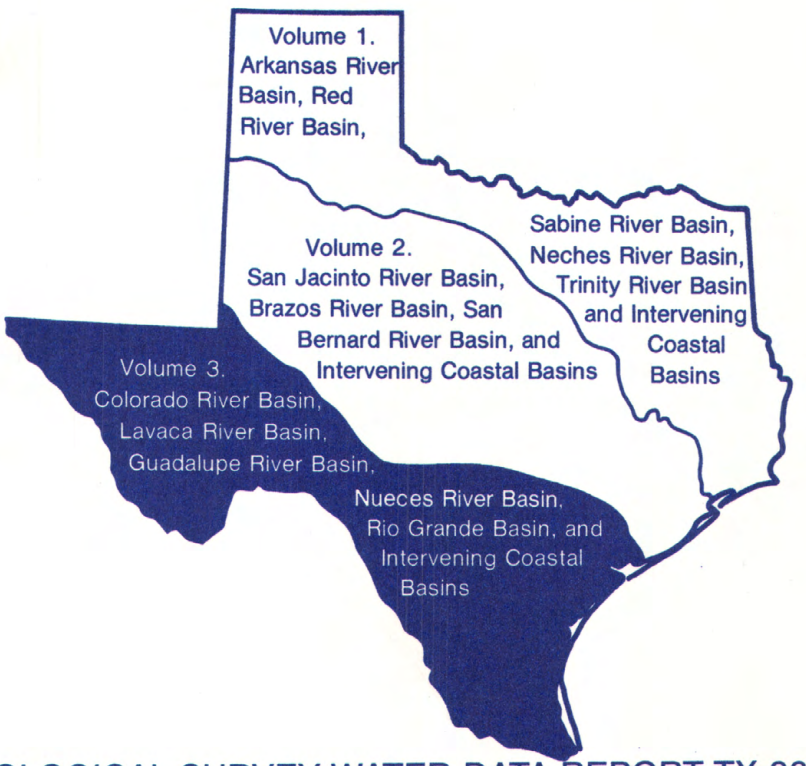
Water Resources Data Texas Water Year 1996

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-96-3
Prepared in cooperation with the State of Texas
and with other agencies

CALENDAR FOR WATER YEAR 1996

1995

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1996

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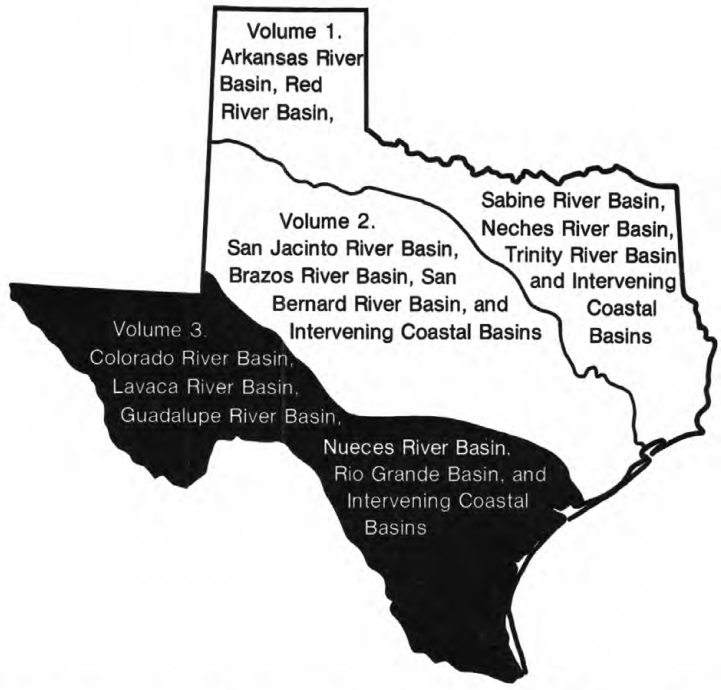
Water Resources Data
Texas
Water Year 1996

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins

by S.C. Gandara, W.J. Gibbons, F.L. Andrews, R.E. Jones, and D.L. Barbie



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-96-3
Prepared in cooperation with the State of Texas
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

GEOLOGICAL SURVEY

Gordon P. Eaton, Director

For additional information write to:
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Austin, Texas 78754-3898

1997

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 4 volumes:

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

Volume 2. San Jacinto River Basin, Brazos River Basin, San Bernard River Basin, and Intervening Coastal Basins

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins

Volume 4. 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 1996 water year for Texas are presented in four 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 3 contains records for water discharge at 110 gaging stations; stage only at 1 gaging station; stage and contents at 12 lakes and reservoirs; water quality at 53 gaging stations; and data for 38 partial-record stations comprised of 9 flood-hydrograph, 17 low-flow, and 12 crest-stage 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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16. PRICE CODE

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Unclassified	Unclassified	Unclassified	

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ILLUSTRATIONS

TABLES

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.]

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

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)
Lake J.B. Thomas near Vincent (e)	08118000	3,389	1954-86
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)	08122C00	21.70	1954-59
Morgan Creek near Colorado City (d)	08122500	313	1947-49
Champlin Creek near Colorado City (d)	08123500	198	1948-59
Champlin Creek Reservoir near Colorado city (e)	08123600	207	1960-87
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
Combined Canal and South Concho River at Christoval (d)	08128001	N/A	1940-75
Middle Concho River near Tankersley (d)	08128500	2,653	1930-61
Dove Creek Springs near Knickerbocker (d)	08129500*	N/A	1944-58
Spring Creek near Tankersley (d)	08131000	699	1930-60
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
Concho River near Veribest (e)	08136150	5,541	1969-73
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
Colorado River at Winchell (d)	08138000*	25,179	1924-34, 1939-93
Deep Creek SWS No. 3 near Placid (e)	08139000	3.42	1954-60
Deep Creek near Mercury (d)	08139500	43.90	1954-73

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Deep Creek SWS No. 6 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	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
Lake Brownwood near Brownwood (e)	08143000	1,535	1948-85
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
San Saba River at Menard (d)	08144500	1,135	1916-93
Combined Noyes Canal and San Saba River at Menard (d)	08144501	N/A	1916-68
San Saba River near Brady (d)	08144600	1,633	1979-93
Brady Creek near Eden (d)	08144800	101	1962-85
Brady Creek Reservoir near Brady (e)	08144900	513	1963-83
Brady Creek at Brady (d)	08145000	588	1939-86
Brady Creek Tributary near Brady (e)	08145100	4.05	1967-73
San Saba River at San Saba (d) (e)	08146000	3,046	1916-92, 1905-07, 1993
Lake Buchanan near Burnet (e)	08148000	31,910	1937-90
North Llano River near Junction (d)	08148500	914	1915-77
Ilano River near Junction (d)	08150000	1,854.14	1915-93
Llano River Tributary near London (e)	08150200	0.58	1966-73
Llano River near Mason (d)	08150700	3,247.14	1968-93
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 (e)	08151300	5.66	1967-73
Sandy Creek near Kingsland (d)	08152000	327	1967-93
Pedernales River near Fredericksburg (d)	08152900	369	1979-93
Pedernales River at Stonewall (d)	08153000	647	1924-34
Pedernales River near Stonewall (d)	08153050	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
Barton Creek near Camp Craft Road near Austin (d)	08155260	109	1982-89
Shoal Creek at Northwest Park at Austin (d)	08156700	6.52	1975-84
Waller Creek at 38th Street, Austin (d)	08157000	2.31	1955-80
Waller Creek at 23rd Street, Austin (d)	08157500	4.13	1955-80
Boggy Creek at U.S. Highway 183, Austin (d)	08158050*	13.10	1976-86
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
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
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Williamson Creek at Oak Hill (d)	08158920	6.30	1978-93
Williamson Creek at Manchaca Road, Austin (e)	08158930	19	1975-85
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
Colorado River at Smithville (d)	08159500	39,880	1931-75
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, 1971-73
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 Speaks (d)	08164350	437	1982-89
Navidad River near Ganado (d)	08164500	826	1939-80
Mustang Creek below Ganado (e)	08164505	290	1971-75
Johnson Creek near Ingram (d)	08166000	114	1942-60, 1962-93
Guadalupe River above Bear Creek at Kerrville (d)	08166140*	494	1978-86
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
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 (e)	08169950	83.7	1915-21
San Marcos River at San Marcos (d)	08170500	93	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	354	1980-94
Coleto Creek near Schroeder (d)	08177000	369	1930-34, 1953-79
Olmos Reservoir at San Antonio (d)	08177700*	21.0	1968-86
San Antonio River at Hildebrand Ave., San Antonio (d)	08177820	35.0	1980-87
San Antonio River at Dolorosa, San Antonio (d)	08177920	N/A	1980-86
San Pedro Creek at Furnish St., San Antonio (d)	08178500	2.60	1916-29
West Elm Creek at San Antonio (e)	08178640	2.45	1976-88
Bandera Creek Tributary near Bandera (e)	08178900	0.27	1966-74

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
Ranch Creek near Helotes (d)	08181410		1978
Leon Creek Tributary at Kelly Air Force Base (d)	08181450	1.19	1969-79
Calaveras Creek near Elmendorf (d)	08182500	77.20	1954-71
San Antonio River at Calaveras (d)	08183000	1,786	1918-25
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 at Kenedy (d)	08187500	72.40	1954-73
Dry Escondido Creek near Kenedy (d)	08188000	9.43	1954-59
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
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
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 near D'Hanis (d)	08202500	87.40	1952-64
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
Nueces River above Calallen (d)	08211200	16,772	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 at Alice (d)	08211900	507	1965-77
San Fernando Creek near Alice (d)	08212000	518	1962-63
North Los Animas Creek Tributary near Freer (e)	08212320	0.07	1969-74
Los Olmos Creek near Falfurrias (d)	08212400	480	1967-73
Rio Grande at Vinton Bridge near Anthony (d)	08363840	28,680	1969-74
Rio Grande below Americal Dam (d)	08365000	29,271	1938-60
Northgate Reservoir at El Paso (e)	08365540	6.89	1973-75

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
Inlet to Fort Bliss Sump at El Paso (d)	08365700	3.50	1961
Government Ditch at El Paso (d)	08365800	6.40	1958-77
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
Rio Grande below Old Fort Quitman (d)	08370500	31,944.0	1976-82
Wild Horse Creek Tributary near Van Horn (e)	08370800	0.74	1966-73
Rio Grande above Rio Conchos near Presidio (d)	08371500	34,966	1900-14, 1920, 1923-60
Cibolo Creek near Presidio (d)	08373200	276	1971-77
Alamito Creek near Presidio (d)	08374000	1,504	1932-72
Rio Grande below Rio Conchos near Presidio (d)	08374200	66,203	1955-60
Terlingua Creek near Terlingua (d)	08374500	1,070	1932-60
Rio Grande at Johnson Ranch (d)	08375000	70,215	1936-60
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
Delware 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
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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 Ozuna (e)	08447200	7.53	1967-73
Pecos River near Shumla (d)	08447400	35,162	1955-60
Pecos River near Langtry (d)	08447410	35,179	1976-78, 1981-85
Goodenough Springs near Comstock (e)	08448500	N/A	1929-60
Sonora Field Creek near Sonora (e)	08448800	2.60	1965-71
Devils River near Juno (d)	08449000	2,730	1925-49, 1964-73
Devils River at Pafford Crossing near Comstock (d)	08449400	3,961	1978-85
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 mear 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
Salt Draw near Pecos (d)	08431500	1,882	1939-41, 1944-45

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Limpia Creek above Fort Davis (d)	08431700	52.40	1966-86
Limpia Creek below Fort Davis (d)	08431800	227	1962-77
Rio Grande at Eagle Pass (d)	08458000	127,312	1900-16, 1924-60
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 at Zapata (d)	08460500	163,344	1932-53
Rio Grande at Roma (d)	08462500	166,464	1900-13, 1923-54
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
Rio Grande at Hildalgo (d)	08471500	176,100	1928-32, 1935, 1939. 1941-51
Rio Grande near Progreso (d)	08473300	176,228	1953-60
Rio Grande near San Beniot (d)	08473700	176,304	1953-60

The following stations were discontinued as continuous-record surface-water-quality stations prior to the 1996 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)
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
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
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, 1951-92
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

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
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 Loop 410 at San Antonio	08178565	119	SC, pH, T, DO	1987-88
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	1966-83
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
Los Olmos Creek near Falfurrias	08212400	480	SC, T	1975-81
Rio Grande below Old 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
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

WATER RESOURCES DATA—TEXAS, 1996

VOLUME 3

COLORADO RIVER BASIN, LAVACA RIVER BASIN, GUADALUPE RIVER BASIN, NUECES RIVER BASIN, RIO GRANDE 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 four 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 3 contains records for water discharge at 110 gaging stations; stage only at 1 gaging station; stage and contents at 12 lakes and reservoirs; and water quality at 53 gaging stations. Also included are data for 38 partial-record stations comprised of 9 flood-hydrograph, 17 low-flow, and 12 crest-stage 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. Groundwater 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-96-3." 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, Spring-field, VA 22161.

Additional information, including the current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (512) 873-3000.

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 1996 are:

- Corps of Engineers, U.S. Army.
- International Boundary and Water Commission, United States and Mexico, U.S. Section.
- 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 Water District; 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 Flood Control District; Houston-Galveston Area Council; Lavaca-Navidad River Authority; Lower Colorado River Authority; Lower Neches Valley Authority; North Central Texas Council of Governments; North Central Texas Municipal Water Authority; Northeast Texas Municipal Water District; North Texas Municipal Water District; Pecos River Commission; Red Bluff Water Power Control District; Red River Authority; 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; Texas Water Development Board; Titus County Fresh Water Supply District No. 1; Trinity 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.

Although drought conditions occurred in places, streamflow throughout the State during water year 1996 ranged from normal (discharges between the 25 percentile and 75 percentile of record) to above normal (discharges within the upper 25 percentile of record).

Conservation storage in 77 selected reservoirs throughout the State, with a combined conservation capacity of 34,558,000 acre-feet, decreased from 82 percent at the end of September 1995 to 72 percent at the end of September 1996. Records from these reservoirs indicate that storage increased in 12, decreased in 60, and remained the same in 5.

The area for which water resources data are presented in volume 3 includes the entire southwestern one-half of the State, extending from the western tip of the State to the central and lower Texas Gulf Coast. Normal annual precipitation ranges from less than 8 inches in parts of west Texas to more than 40 inches along the middle Texas Gulf Coast. Average annual runoff ranges from less than 0.1 inch in parts of west Texas to more than 10 inches in some places along the Texas Gulf Coast. The area described in volume 3 and the location of selected streamflow-gaging and water-quality stations in the area are shown in figure 1.

Streamflow

Streamflow was normal during water year 1996 in the area covered in volume 3. Streamflow for water year 1995 and streamflow for the period of record at the six selected stations (fig. 1) for which data are included in volume 3 is presented in table 1.

At the four long-term hydrologic index stations in the State, monthly mean streamflow during water year 1996 ranged from below normal to above normal. Monthly mean discharges for water year 1996 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 North Concho River near Carlsbad was below normal in May, above normal during August and September, and normal for the remaining 9 months of water year 1996. Streamflow for the station Guadalupe River near Spring Branch was below normal from February through August, and normal for the remaining 5 months of water year 1996. Streamflow at the station Neches River near Rockland was normal during October, November, and December, above normal in August, and September, and below normal for the remaining 7 months. The station North Bosque River near Clifton had below normal streamflow during May, above normal streamflow during November, August and September, and normal streamflow for the remaining 8 months.

Conservation storage in 20 selected reservoirs in this area of the State, with a total combined conservation capacity of 9,206,000 acre-feet, decreased from 60 percent of capacity at the end of September 1995 to 46 percent of capacity at the end of September 1996. Records from these reservoirs indicate that storage increased in 5 and decreased in 15 during the water year.

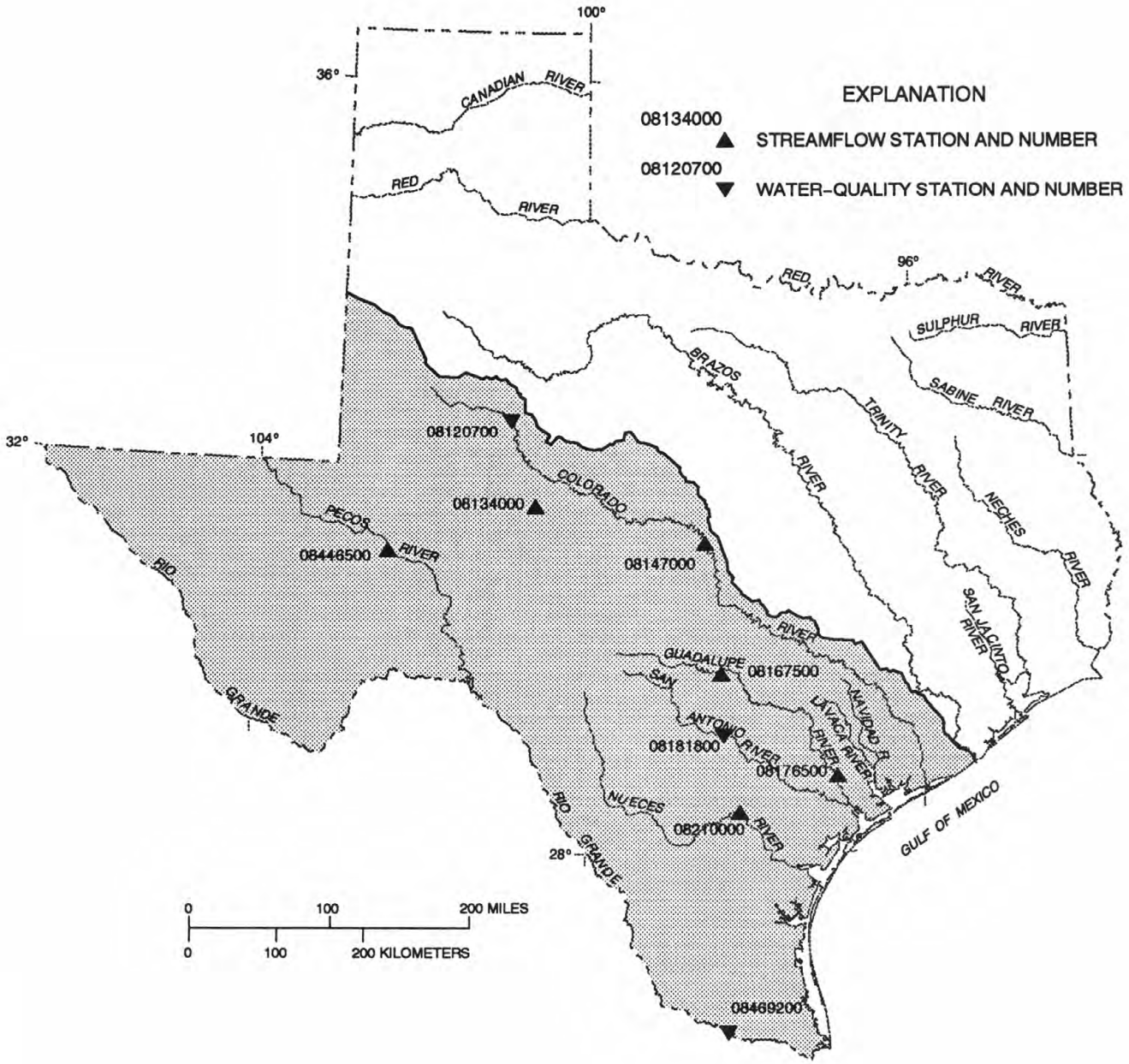


Figure 1. Area of Texas covered by volume 3 (shaded) and location of selected streamflow and water-quality stations in volume 3.

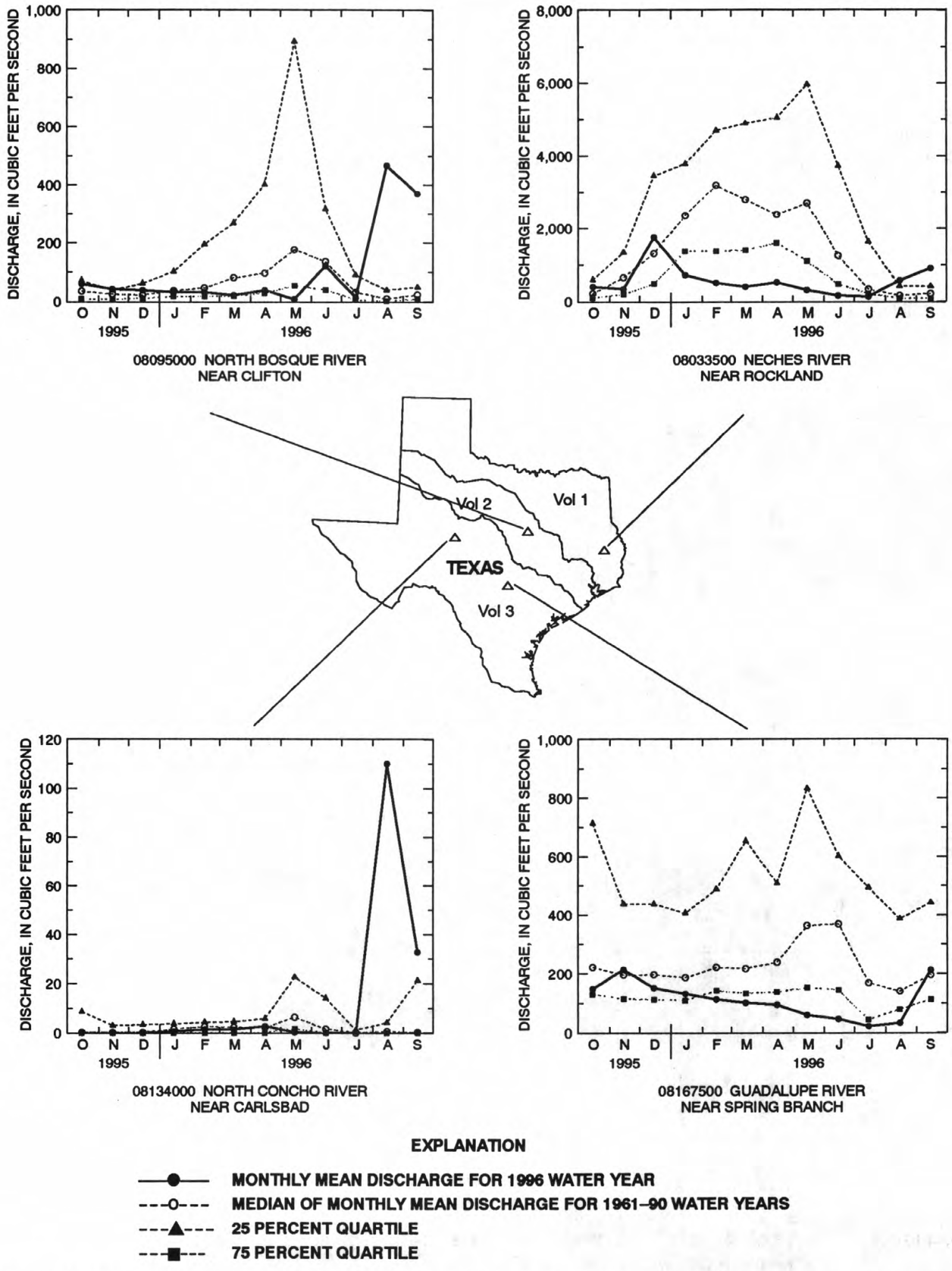


Figure 2. Monthly mean discharges at four long-term hydrologic index stations during 1996 water year and median of the monthly mean discharges for 1961–90 water years.

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 where 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 1996 are compared with those for water years 1992–96 for selected long-term daily or continuous-record water-quality stations (fig. 1) in the Colorado River, Guadalupe River, and Rio Grande Basins. Results are shown in table 2.

Table 1. Streamflow at six selected stations

Station no. and name		Discharge during 1996 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
Colorado River Basin							
08134000	North Concho River near Carlsbad, Tex. 1/	7,160	0	12.5	94,600	0	29.9 (1924-96)
08147000	Colorado River near San Saba, Tex.	12,700	17	380	47,400	0	709 (1969-96)
Guadalupe River Basin							
08167500	Guadalupe River near Spring Branch, Tex. 1/	5,320	4.7	110	160,000	0	343 (1922-96)
08176500	Guadalupe River at Victoria, Tex.	9,760	38	609	105,000	38	2,024 (1963-96)
Nueces River Basin							
08210000	Nueces River near Three Rivers, Tex.	3,500	36	231	18,300	.55	433 (1983-96)
Rio Grande Basin							
08446500	Pecos River near Girvin, Tex.	95	6.2	25.4	20,000	1.9	74.9 (1939-96)

1/ Hydrologic index station.

Table 2.--Comparison of records of discharge-weighted-average concentrations of dissolved solids for the 1996 and 1992-96 water years

Station no. and name		Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
		1996	1992-96	1996	1992-96
Colorado River Basin					
08120700	Colorado River near Cuthbert, Tex.	8.5	20	1,790	1,730
Guadalupe River Basin					
08181800	San Antonio River near Elmendorf, Tex.	212	692	512	354
Rio Grande Basin					
08469200	Rio Grande below Anzalduas Dam, Tex.	1,224	1,470	814	764

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 39 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 re-mobilization 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.

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 191 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO2 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 SO2 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.nrel.colostate.edu/NAPD

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 53 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://wwwrvares.er.usgs.gov/nawqa/nawqa_home.html
http://www.cr.usgs.gov/trin/index.html
http://www.cr.usgs.gov/sctx/index.html

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 1996 water year that began October 1, 1995, and ended September 30, 1996. 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 and, in Texas, for surface-water stations where only miscellaneous measurements are made.

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

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report.

Data Collection and Computation

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

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters 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, Chapter A6.

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

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations, that 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 the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

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

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

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

Headings for AVERAGE DISCHARGE, EXTREMES FOR PERIOD OF RECORD, AND EXTREMES FOR CURRENT YEAR have been deleted and the information contained in these paragraphs, except for the listing of secondary instantaneous peak discharges in the 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.

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 (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals depends on flow conditions and other factors which must be evaluated by the collector.

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

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 punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the Texas District Office. The address is given on the back of the title page of this report.

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at 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 (1996) 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.

Dissolved Trace-Element Concentrations

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

ACCESS TO WATSTORE DATA

The National WATer Data STOrage and REtrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the U.S. Geological Survey at the National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from the District office (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

In addition to providing direct access to WATSTORE, data can be provided in various machine-readable formats on magnetic tape or 5-1/4 inch floppy disk.

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.

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 326,000 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 of the original water sample.

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.

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

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

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at +35 °C or -1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area 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 °C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

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

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. The 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 cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters or liters.

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

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

Color Unit is produced by one milligram per liter of platinum in the form of the 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 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 2,445 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 mm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

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

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

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

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

> 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 (CaCO3).

Hydrologic Benchmark Network is a network of 53 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

Hydrologic unit is a geographic area representing part 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.

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

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the mass of solute per unit volume (liter) of water. 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.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 284 sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are: (1) To obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for; (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs; (3) detection of changes or trends with time in the pattern of occurrence of water- quality characteristics; and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

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, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The U.S. 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 or sieve
Gravel	2.0 - 64.0	Sieve

The particle-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.

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 O/(m^2/time)] for periphyton and macrophytes and [mg O/(m^3/time)] or 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. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

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

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

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

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

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

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

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

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

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

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

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

Solute is any substance that is dissolved in water.

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

Stage-discharge relation is the relation between gage height (stage) and 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 emersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

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

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

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

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

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

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

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a 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 quantity of a sub- stance in solution or suspension that passes a stream section during a 24-hour period.

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

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 "water year 1990."

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."

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 p.

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 p.

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 p.

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

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

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

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 p.

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 p.

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 p.

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

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

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

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

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

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

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 p.

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

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 p.

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 p.

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

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

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

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

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

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 p.

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

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 p.

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

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

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 p.

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 p.

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

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 p.

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 p.

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 p.

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 p.

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

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 p.

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

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

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

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

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

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

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

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 p.

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 p.

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 p.

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 p.

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 p.

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 p.

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

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 p.

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 p.

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 p.

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 p.

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 p.

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 p.

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

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 p.

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 p.

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 p.

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

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 p.

08117995 COLORADO RIVER NEAR GAIL, TX

LOCATION.--Lat 32°37'43", long 101°17'06", Borden County, Hydrologic Unit 12080002, near right downstream end of bridge on FM 1205, 5.0 mi north of junction with FM 1785, 14 mi northwest of Vincent, 25 mi west of Ira, and 13 mi southeast of Gail.

DRAINAGE AREA.--498 mi².

PERIOD OF RECORD.--March 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,240 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation or diversions above station. One observation of water temperature was made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e10
2	.26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e7.5
3	3.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e4.0
4	12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e2.0
5	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e1.0
6	5.2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.50
7	1.1	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	e.25
8	.19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.10
9	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.05
10	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.01
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.9	e.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	12	e.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	e.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	50	e160
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.1	e30
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	e10
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e2.0
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	23	e.50
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	173	e.10
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	25	e10
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	30	e2.0
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.2	e1.0
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	84	e.50
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	233	e.10
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	e40	e.01
31	.00		.00	.00	---	.00	---	.00	---	.00	e20	---
TOTAL	41.91	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	701.31	241.62
MEAN	1.35	.000	.000	.000	.000	.000	.000	.000	.000	.000	22.6	8.05
MAX	20	.00	.00	.00	.00	.00	.00	.01	.00	.00	233	160
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	83	.00	.00	.00	.00	.00	.00	.02	.00	.00	1390	479

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1996, BY WATER YEAR (WY)

MEAN	1.98	1.10	2.40	2.11	3.44	2.58	6.76	42.5	36.7	14.6	6.38	21.2
MAX	10.6	4.71	15.6	8.42	23.8	10.0	51.5	263	166	107	22.6	49.1
(WY)	1992	1992	1992	1992	1992	1990	1990	1992	1992	1988	1996	1989
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.48
(WY)	1990	1990	1990	1995	1991	1991	1991	1993	1990	1994	1994	1993

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1988 - 1996	
ANNUAL TOTAL	2912.28		984.85			
ANNUAL MEAN	7.98		2.69		11.5	
HIGHEST ANNUAL MEAN					46.2	1992
LOWEST ANNUAL MEAN					1.89	1994
HIGHEST DAILY MEAN	577	May 6	233	Aug 29	2060	May 25 1992
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 11	.00	Jun 7 1988
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 11	.00	Jun 7 1988
INSTANTANEOUS PEAK FLOW			486	Aug 29	4010	Jul 3 1988
INSTANTANEOUS PEAK STAGE			8.45	Aug 29	m16.43	May 26 1992
ANNUAL RUNOFF (AC-FT)	5780		1950		8310	
10 PERCENT EXCEEDS	3.2		.13		8.0	
50 PERCENT EXCEEDS	.00		.00		.01	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
m Result of earthen dam.

08120700 COLORADO RIVER NEAR CUTHBERT, TX

LOCATION.--Lat 32°28'38", long 100°56'58", Mitchell County, Hydrologic Unit 12080002, on left bank at downstream side of bridge on Farm Road 1808, 4.0 mi downstream from Deep Creek, 4.8 mi east of Cuthbert, 8.0 mi northwest of Colorado City, and at mile 810.0.

DRAINAGE AREA.--3,912 mi², of which 2,381 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1965 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,073.49 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since July 1952, flow largely regulated by lake J. B. Thomas (capacity, 203,600 acre-ft), 27 mi upstream. There are numerous diversions from lake J. B. Thomas for municipal use and for oil field operations. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1941 and 1946 reached a stage of 36.1 ft, from State Department of Highways and Public Transportation bridge plans.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.82	3.8	2.9	3.7	4.3	4.2	3.7	.37	.00	.00	.00	19
2	e.59	5.8	3.0	4.3	4.5	4.3	2.6	.32	.00	.00	.00	11
3	1.8	2.5	3.0	4.4	4.5	4.5	2.1	.29	.00	.00	.00	8.2
4	7.3	1.5	3.1	4.6	5.0	3.5	2.0	.28	.00	.00	.00	6.2
5	e6.1	1.3	3.1	4.5	5.0	2.5	4.6	.25	.00	.00	31	18
6	5.3	1.1	3.0	4.4	5.1	2.3	27	.25	.00	.00	6.7	16
7	3.5	1.1	3.2	4.1	5.6	2.2	20	.20	.00	.00	1.7	7.0
8	1.4	1.2	3.1	3.7	6.3	2.1	10	.24	3.9	.00	.40	5.0
9	.73	1.2	3.1	3.6	5.9	1.7	6.9	.37	3.3	.00	.19	4.0
10	.50	1.2	2.9	3.4	5.4	1.6	5.0	.35	3.1	.00	.12	3.3
11	.39	1.1	2.8	3.4	5.2	1.7	3.7	.28	1.6	1.3	.09	2.8
12	.47	1.0	2.8	3.4	5.1	1.8	2.6	.22	.66	1.7	.06	2.5
13	.59	1.0	3.1	3.3	4.1	2.1	1.8	.22	.39	.31	.04	2.5
14	.49	1.0	3.5	3.1	3.4	2.1	1.7	.18	.25	.17	.03	2.6
15	.33	1.1	3.6	3.1	4.1	2.4	1.8	.11	.16	.10	.02	9.0
16	.33	1.1	3.7	3.1	4.2	2.5	1.8	.08	.09	.06	.01	24
17	.33	1.4	3.6	3.0	4.4	2.3	1.7	.03	.04	.02	.00	9.5
18	.33	1.8	3.8	3.7	4.4	2.1	1.6	.01	.02	.00	.00	5.9
19	.33	1.9	4.4	3.4	4.4	2.3	1.3	.00	.02	.00	.08	175
20	.33	1.9	4.5	2.9	4.3	2.3	1.1	.00	.50	.00	.10	450
21	.33	2.0	4.2	2.5	3.5	2.3	1.0	.00	.31	.00	.08	136
22	.33	1.9	4.2	3.5	2.9	2.2	1.0	.00	.17	.00	.08	23
23	.33	1.9	4.2	3.9	2.9	1.9	.89	.00	.08	.00	47	12
24	.33	1.9	4.0	3.9	2.8	1.5	.80	.00	.02	.00	232	7.5
25	.33	1.9	4.0	3.8	2.5	1.4	.74	.00	.00	.00	125	5.8
26	.64	1.9	4.0	3.8	2.4	1.5	.72	.00	.00	.00	50	4.8
27	.74	2.1	4.0	3.8	2.5	1.7	.58	.00	.00	.00	30	4.1
28	.74	2.5	4.0	3.6	3.1	4.7	.47	.00	.00	.00	306	3.9
29	.74	2.6	3.7	3.6	3.2	6.2	.47	.00	.00	.00	517	3.6
30	.74	2.5	3.3	3.8	---	5.7	.45	.00	.00	.00	99	3.4
31	.82	---	3.2	4.0	---	4.7	---	.00	---	.00	41	---
TOTAL	38.03	55.2	109.0	113.3	121.0	84.3	110.12	4.05	14.61	3.66	1487.70	985.6
MEAN	1.23	1.84	3.52	3.65	4.17	2.72	3.67	.13	.49	.12	48.0	32.9
MAX	7.3	5.8	4.5	4.6	6.3	6.2	27	.37	3.9	1.7	517	450
MIN	.33	1.0	2.8	2.5	2.4	1.4	.45	.00	.00	.00	.00	2.5
AC-FT	75	109	216	225	240	167	218	8.0	29	7.3	2950	1950

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1996, BY WATER YEAR (WY)

MEAN	30.9	8.06	8.34	7.60	10.7	10.8	29.7	78.9	75.8	17.9	60.8	54.0
MAX	304	37.1	51.5	30.2	86.5	66.0	204	403	592	131	771	810
(WY)	1987	1985	1992	1992	1992	1973	1981	1965	1982	1988	1971	1980
MIN	.000	.092	.53	.68	.82	.20	.39	.044	.000	.000	.000	.000
(WY)	1969	1971	1971	1971	1971	1971	1971	1967	1984	1970	1970	1983

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1965 - 1996	
ANNUAL TOTAL	4176.06		3126.57			
ANNUAL MEAN	11.4		8.54		32.2	
HIGHEST ANNUAL MEAN					104	1980
LOWEST ANNUAL MEAN					4.15	1970
HIGHEST DAILY MEAN	760	May 30	517	Aug 29	8770	Sep 29 1980
LOWEST DAILY MEAN	.00	Jul 16	.00	May 19	.00	Apr 13 1965
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 19	.00	May 19	.00	Apr 13 1965
INSTANTANEOUS PEAK FLOW			714	Aug 29	11500	Aug 14 1972
INSTANTANEOUS PEAK STAGE			9.61	Aug 29	27.18	Sep 29 1980
ANNUAL RUNOFF (AC-FT)	8280		6200		23350	
10 PERCENT EXCEEDS	10		5.9		26	
50 PERCENT EXCEEDS	3.7		1.9		4.2	
90 PERCENT EXCEEDS	.03		.00		.01	

e Estimated

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1965 to current year.

PERIOD OF DAILY RECORD.
SPECIFIC CONDUCTANCE: March 1965 to current year.
WATER TEMPERATURE: March 1965 to May 1980, April 1983 to current year.

INSTRUMENTATION.--From March 1965 to October 1987, specific conductance was recorded continuously at this station. From April 1983 to October 1987, water temperature was recorded continuously at this station. Since October 1989, specific conductance and water temperature are continuously recorded at this station.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 70,000 microsiemens Nov. 17, 1968; minimum, 102 microsiemens Sept. 28, 1980.
WATER TEMPERATURE: Maximum, 36.0°C Aug. 7, 1985; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 27,400 microsiemens June 9; minimum, 467 microsiemens Aug. 29.
WATER TEMPERATURE: Maximum, 34.5°C July 17; minimum, 0.0°C several days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT									
06...	1017	5.8	4380	16.5	420	310	100	38	760
NOV									
27...	1442	2.1	3940	13.0	740	500	180	71	550
JAN									
29...	1321	3.5	6190	7.0	1000	760	240	100	980
MAR									
28...	1445	5.2	7300	12.5	1100	910	260	120	1200
AUG									
13...	0740	0.04	2800	23.5	620	540	140	66	360

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT								
06...	16	7.1	110	290	1200	0.30	4.4	2470
NOV								
27...	9	12	240	420	920	0.80	1.2	2300
JAN								
29...	13	11	250	740	1600	1.1	2.5	3820
MAR								
28...	15	11	230	830	2000	1.0	4.3	4570
AUG								
13...	6	9.6	84	460	620	0.40	9.1	1720

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.	1995	38.03	4880	3080	316	1100	117	710	73	910
NOV.	1995	55.2	4800	3020	450	1100	166	700	104	890
DEC.	1995	109.0	5050	3180	936	1200	344	740	217	940
JAN.	1996	113.3	6260	3980	1220	1500	473	870	265	1100
FEB.	1996	121.0	6330	4020	1310	1600	512	870	286	1100
MAR.	1996	84.3	6350	4030	918	1600	359	870	199	1100
APR.	1996	110.12	7240	4630	1380	1900	560	960	284	1200
MAY	1996	4.05	10100	6620	72	3000	33	1100	12	*
JUNE	1996	14.61	16800	11500	455	6700	263	1100	42	*
JULY	1996	3.66	10000	6690	66	3400	34	930	9.2	*
AUG.	1996	1487.70	1390	853	3420	260	1040	230	938	300
SEPT	1996	985.6	2730	1720	4570	630	1670	400	1070	510
TOTAL		3126.57	**	**	15100	**	5570	**	3500	**
WTD.AVG.		8.5	2840	1790	**	660	**	410	**	530

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	3210	3120	3180	3910	3170	3450	3760	3660	3710	6390	6070	6230
2	3890	3120	3390	9270	3550	7030	3970	3660	3790	6420	5920	6220
3	3970	3410	3730	9140	7570	8290	4180	3970	4110	5950	5760	5870
4	7490	3560	5900	7610	7080	7360	4250	4140	4210	5780	5680	5730
5	7330	4930	6170	7080	5860	6490	4270	4160	4230	5850	5290	5610
6	4930	4300	4410	5860	5260	5530	4400	4260	4320	5850	5210	5440
7	4300	3520	3840	5320	5090	5240	4500	4390	4430	7370	5850	6770
8	4700	3520	3950	5090	4730	4870	4650	4460	4580	7250	6970	7100
9	6200	4700	5550	4780	4360	4540	4640	4460	4580	7100	7010	7050
10	6810	6200	6570	4420	4180	4290	4460	4320	4370	7160	7090	7130
11	7350	6810	7030	4900	4340	4710	4940	4430	4770	7250	6950	7140
12	7520	7350	7450	4910	4720	4830	5180	4930	5010	6980	6680	6830
13	7520	7320	7390	4780	4500	4640	5400	5180	5330	6680	6200	6510
14	7340	6120	6930	4510	4410	4450	5660	5390	5520	6620	5440	6180
15	6120	4760	5370	4480	4140	4330	5450	5120	5230	6340	5190	5850
16	4760	4470	4570	4200	4100	4130	5120	4940	5030	6400	5310	6090
17	4480	4390	4440	4340	4120	4250	5080	4900	4990	5410	5270	5350
18	4460	4360	4400	4240	4100	4140	5170	5070	5110	6370	5400	6200
19	4570	4420	4500	4120	3930	4040	5170	5030	5110	6320	6240	6270
20	4480	3670	4110	3940	3640	3760	5210	4970	5100	6470	6300	6400
21	3670	3410	3490	3720	3650	3700	5460	4970	5270	6390	6280	6340
22	3830	3510	3670	3950	3670	3780	5300	5130	5190	6600	6340	6450
23	3840	3670	3750	4180	3950	4060	5420	5160	5310	7040	6600	6830
24	3720	3640	3680	4410	4180	4310	5480	5370	5440	6620	6070	6260
25	3650	3520	3600	4440	4210	4390	5910	5120	5580	6230	6050	6140
26	3570	3410	3500	4620	4390	4470	5830	5660	5740	6350	6080	6260
27	3410	3280	3340	4630	3910	4270	5870	5670	5740	6200	5950	6080
28	3440	3330	3380	3990	3810	3930	5780	5610	5680	6050	5950	6020
29	3440	3270	3330	3910	3810	3850	5720	5630	5660	6210	6040	6130
30	3420	3320	3380	3910	3720	3840	5800	5630	5720	6170	5890	6010
31	3480	3250	3370	---	---	---	6230	5800	5990	6140	5930	6050
MONTH	7520	3120	4560	9270	3170	4700	6230	3660	5000	7370	5190	6280

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6180	6060	6130	6250	5960	6170	6790	6280	6610	8630	8330	8500
2	6060	5940	6000	5960	5310	5650	7050	6790	6950	8850	8420	8650
3	6070	5870	5990	5760	5270	5500	7300	6920	7070	9140	8720	8910
4	6230	5950	6130	5890	5720	5810	8060	7300	7630	9400	9020	9190
5	6240	5950	6090	5930	5680	5770	8190	7650	7900	9620	9230	9420
6	6040	5800	5900	6140	5930	6020	8660	5040	6960	9710	9410	9550
7	5920	5840	5870	6150	6060	6100	9210	5380	7550	10000	9580	9780
8	6250	5920	6090	6350	6150	6290	10100	6020	8280	10200	9670	9990
9	6210	6090	6150	6230	6030	6100	7330	6020	6870	10900	10200	10500
10	6340	6050	6190	6110	6030	6070	7630	6990	7310	11200	10800	10900
11	6340	6060	6170	6900	6070	6500	7540	6870	7180	11400	11000	11200
12	6430	6060	6200	6990	6450	6790	6960	6070	6480	11700	11200	11400
13	6600	6430	6550	6450	6290	6350	6630	6030	6310	12000	11500	11800
14	6600	6480	6520	6370	6290	6350	7600	6540	7090	12000	11600	11800
15	7170	6520	6820	6500	6370	6460	7600	7220	7490	12200	11600	12000
16	7420	7100	7320	6500	6260	6360	7220	6340	6510	12500	11800	12200
17	7100	6530	6730	6760	6340	6510	6510	6250	6400	12800	11900	12400
18	6530	6490	6530	6920	6600	6770	6430	6050	6250	12900	12400	12600
19	6580	6500	6560	6720	6600	6660	6560	6130	6340	---	---	---
20	6540	6460	6490	6720	6440	6610	6940	6520	6670	---	---	---
21	6500	6380	6450	6560	6390	6490	7160	6820	6970	---	---	---
22	6510	6420	6460	6560	6400	6450	7370	6950	7200	---	---	---
23	6880	6470	6680	6690	6480	6600	7630	7160	7470	---	---	---
24	6800	6390	6500	6860	6570	6670	7590	7290	7460	---	---	---
25	6440	6390	6400	7450	6860	7170	7630	7380	7500	---	---	---
26	6600	6440	6500	7700	7450	7580	8020	7630	7850	---	---	---
27	6810	6560	6700	7870	7700	7740	8280	7980	8080	---	---	---
28	6810	6200	6450	7870	7020	7540	8320	8150	8250	---	---	---
29	6250	6200	6220	7020	6190	6430	8450	8280	8360	---	---	---
30	---	---	---	6280	5690	6020	8500	8240	8390	---	---	---
31	---	---	---	6280	5690	5900	---	---	---	---	---	---
MONTH	7420	5800	6370	7870	5270	6430	10100	5040	7250	12900	8330	10600

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	4780	3240	4020
2	---	---	---	---	---	---	---	---	---	6090	4780	5280
3	---	---	---	---	---	---	---	---	---	7690	6090	6890
4	---	---	---	---	---	---	---	---	---	8250	7110	7890
5	---	---	---	---	---	---	5220	962	2540	9680	6870	8460
6	---	---	---	---	---	---	3110	1620	2610	6870	3820	4920
7	---	---	---	---	---	---	1930	1750	1840	5490	3350	4110
8	21400	15600	18200	---	---	---	2200	1890	2020	7490	5290	6920
9	27400	18600	22800	---	---	---	2470	2200	2370	7200	6690	6800
10	18800	12100	15700	---	---	---	2660	2470	2600	7340	6700	6900
11	15000	11900	13800	21900	11500	17700	2850	2660	2750	8620	7340	7950
12	14100	9920	11700	11500	4980	6170	2950	2800	2870	9610	8620	9120
13	9920	8910	9310	4980	4250	4810	2990	2900	2930	10100	9610	9850
14	8910	8620	8750	4850	4770	4820	3040	2870	2980	10500	9890	10200
15	8870	8500	8690	4810	4690	4750	3090	3000	3050	10700	8660	10100
16	9040	8710	8830	4900	4690	4780	3140	3090	3100	10500	4420	7000
17	9220	8880	9000	5030	4820	4890	---	---	---	4420	2390	2880
18	9430	8970	9160	---	---	---	---	---	---	8010	3510	6470
19	9730	9520	9620	---	---	---	3330	3200	3270	7970	739	3750
20	10300	9430	9920	---	---	---	3420	3290	3340	1220	478	771
21	11100	10200	10600	---	---	---	3520	3340	3450	3350	827	1820
22	11500	11000	11200	---	---	---	3610	3480	3540	5050	3350	4310
23	11800	11200	11500	---	---	---	4120	756	2710	6230	5050	5670
24	12000	11400	11700	---	---	---	3780	505	1590	7200	6230	6760
25	---	---	---	---	---	---	2700	802	1850	7890	7150	7580
26	---	---	---	---	---	---	2620	802	2090	8420	7890	8200
27	---	---	---	---	---	---	3980	2110	3070	8900	8420	8670
28	---	---	---	---	---	---	3390	551	1490	9080	8770	8930
29	---	---	---	---	---	---	1100	467	615	9180	8870	9010
30	---	---	---	---	---	---	2000	1100	1630	9270	9090	9190
31	---	---	---	---	---	---	3240	2000	2520	---	---	---
MONTH	27400	8500	11800	21900	4250	6850	5220	467	2510	10700	478	6680
YEAR	27400	467	6240									

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	25.0	20.5	22.5	18.0	15.5	17.0	12.5	7.5	9.5	8.0	4.0	6.0
2	22.5	19.5	21.0	16.5	12.0	14.0	12.5	7.5	10.0	4.5	2.5	3.5
3	23.0	17.5	20.0	12.0	9.5	10.0	12.0	8.0	10.0	5.0	.5	2.5
4	23.5	18.0	20.5	9.5	8.5	9.0	11.5	7.5	9.5	6.5	2.5	4.5
5	22.0	18.0	20.0	12.5	7.0	9.5	11.5	8.0	9.5	5.5	3.5	4.5
6	20.5	16.5	18.0	15.0	11.5	13.0	10.5	7.5	9.0	5.0	2.0	3.0
7	19.5	14.5	17.0	16.5	12.5	14.0	9.5	7.5	8.0	3.5	.0	2.0
8	21.0	16.0	18.5	14.5	10.5	12.5	11.0	7.0	8.5	5.5	.5	2.5
9	21.5	17.5	19.5	16.0	11.0	13.5	7.5	3.5	5.0	6.5	2.0	4.0
10	23.5	18.0	20.5	17.5	14.0	15.5	5.0	1.5	3.0	7.0	2.5	5.0
11	23.0	18.0	20.5	14.0	10.0	12.0	8.0	3.0	5.0	8.5	5.0	6.5
12	22.5	17.5	20.0	12.5	8.0	10.5	9.5	4.5	7.0	8.5	4.0	6.0
13	22.0	16.5	19.0	14.0	9.0	11.5	10.0	6.5	8.5	8.5	4.0	6.5
14	20.0	14.5	17.0	14.0	10.0	12.0	11.0	7.0	9.0	9.5	4.5	7.0
15	19.0	13.0	16.0	14.0	9.5	11.5	11.5	8.0	9.5	9.5	5.0	7.0
16	18.5	13.5	16.0	14.0	10.0	12.0	10.5	7.0	9.0	9.0	5.5	7.0
17	19.5	14.0	16.5	14.5	12.5	13.5	9.5	9.0	9.5	9.0	6.0	7.5
18	20.5	15.0	17.5	15.5	11.5	13.5	9.5	7.0	8.5	8.5	3.0	4.5
19	20.5	16.0	18.0	15.5	11.0	13.0	8.0	5.0	6.5	5.0	.5	2.5
20	18.0	13.0	15.5	15.0	11.0	13.0	7.0	4.0	5.5	6.5	1.5	4.0
21	17.0	11.5	14.0	15.0	11.5	13.0	5.5	4.0	5.0	6.5	1.5	4.0
22	19.5	14.0	16.5	15.5	11.0	13.0	5.0	3.5	4.5	10.0	3.5	6.5
23	18.5	14.5	16.0	13.5	10.5	12.0	4.5	2.0	3.0	9.0	5.5	7.5
24	16.0	11.5	13.5	12.5	8.0	10.0	4.0	2.0	3.0	8.0	3.5	6.0
25	18.5	12.5	15.5	12.0	7.5	10.0	5.0	.5	3.0	8.0	3.0	5.5
26	19.5	15.0	17.0	12.0	8.5	10.5	6.0	2.0	4.0	7.5	4.0	5.5
27	19.0	14.0	16.5	13.5	10.5	12.0	6.5	2.0	4.0	6.5	2.0	4.5
28	17.5	13.0	15.0	11.0	7.5	9.0	5.5	2.0	3.5	8.0	3.0	5.5
29	18.5	13.5	16.0	10.5	6.0	8.0	6.5	3.0	5.0	8.0	3.5	6.0
30	18.0	17.0	17.5	11.0	6.0	8.5	8.0	5.5	6.5	6.5	3.5	5.0
31	20.5	17.0	18.0	---	---	---	8.0	4.0	6.0	4.0	1.0	2.0
MONTH	25.0	11.5	17.5	18.0	6.0	12.0	12.5	.5	6.5	10.0	.0	5.0

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.5	.0	1.5	10.0	3.0	6.0	18.5	11.5	15.0	25.5	15.5	20.0
2	1.0	.0	.5	11.5	4.0	8.0	18.5	12.5	15.5	27.5	16.5	21.0
3	2.0	.0	.5	13.5	6.0	10.0	21.0	14.0	17.5	27.5	19.5	23.0
4	2.5	.0	1.0	16.5	10.5	13.0	18.0	13.0	15.0	29.5	21.0	24.5
5	5.5	.0	2.5	17.5	13.0	15.0	13.0	6.0	8.5	30.5	22.0	25.5
6	6.5	1.0	4.0	14.5	9.0	12.5	13.0	6.5	9.5	29.5	21.0	24.5
7	10.0	3.5	6.5	10.5	5.0	8.0	16.0	9.5	12.5	29.5	22.0	25.0
8	12.5	6.5	9.5	8.5	4.5	6.5	20.5	13.0	16.0	29.5	21.5	25.0
9	13.0	7.5	10.5	10.0	3.0	6.5	23.0	15.0	18.5	29.5	22.5	25.5
10	14.0	8.0	11.0	12.0	4.5	8.5	21.5	16.5	19.0	28.0	22.0	25.0
11	11.0	7.0	9.0	14.5	8.0	11.0	23.5	16.5	20.0	28.5	19.5	23.5
12	11.0	5.5	8.0	17.0	10.0	13.5	24.5	18.0	21.0	28.0	20.0	23.5
13	11.0	6.0	8.5	19.0	12.5	15.5	22.5	17.0	19.5	29.5	21.5	25.0
14	13.0	7.0	10.0	19.5	14.5	17.0	21.0	15.0	18.0	26.5	22.0	24.0
15	13.5	8.5	11.0	19.0	13.0	15.5	20.5	13.5	17.0	29.0	21.0	24.5
16	11.5	7.0	9.5	18.5	11.5	15.0	19.5	14.0	17.0	29.5	21.5	25.0
17	12.0	6.0	9.0	17.0	12.5	15.0	22.0	15.5	18.5	30.0	22.0	25.5
18	13.5	6.5	10.0	16.5	11.5	14.0	24.0	16.5	20.0	30.0	23.0	26.0
19	14.5	9.0	12.0	15.0	10.0	12.5	24.5	17.0	20.5	---	---	---
20	15.5	10.0	12.5	15.0	8.5	12.0	23.0	16.5	19.5	---	---	---
21	17.0	11.0	14.0	16.0	8.5	12.5	23.5	16.5	20.0	---	---	---
22	16.5	12.0	14.5	17.5	12.0	15.0	22.5	18.0	20.0	---	---	---
23	15.5	11.5	13.5	20.5	14.5	17.0	22.5	15.5	19.0	---	---	---
24	14.0	9.0	12.0	20.0	14.5	17.5	23.0	16.0	19.5	---	---	---
25	16.0	11.5	14.0	14.5	9.5	12.0	23.0	17.0	20.0	---	---	---
26	16.5	12.0	14.0	10.5	6.0	7.5	24.5	17.0	20.5	---	---	---
27	17.0	12.5	14.5	6.0	4.5	5.5	26.0	18.0	21.5	---	---	---
28	13.5	7.0	9.5	13.5	5.0	9.0	23.0	17.5	21.5	---	---	---
29	7.0	5.0	6.0	18.0	10.0	14.0	22.0	14.0	17.5	---	---	---
30	---		---	19.5	12.5	15.5	22.0	13.0	17.0	---	---	---
31	---		---	18.0	11.5	15.0	---	---	---	---	---	---
MONTH	17.0	.0	9.0	20.5	3.0	12.0	26.0	6.0	18.0	30.5	15.5	24.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	28.0	24.0	25.5
2	---	---	---	---	---	---	---	---	---	29.0	24.0	26.5
3	---	---	---	---	---	---	---	---	---	30.0	25.5	27.5
4	---	---	---	---	---	---	---	---	---	30.0	25.5	27.5
5	---	---	---	---	---	---	29.0	23.5	26.0	27.5	24.5	26.0
6	---	---	---	---	---	---	32.0	26.0	28.5	27.0	23.0	25.0
7	---	---	---	---	---	---	32.0	26.0	29.0	29.5	23.5	26.0
8	28.5	23.0	27.0	---	---	---	30.0	26.5	28.0	30.0	24.0	26.5
9	30.0	23.0	26.5	---	---	---	30.0	25.5	27.0	29.0	24.0	26.5
10	31.0	24.5	27.5	---	---	---	29.5	24.5	26.5	29.0	23.5	26.0
11	32.0	25.5	28.5	32.5	29.5	31.0	33.0	23.5	27.5	27.5	23.0	25.0
12	30.0	25.0	27.5	31.5	26.5	29.0	31.5	24.0	27.5	25.5	23.0	24.0
13	31.5	24.5	27.5	31.0	26.5	28.5	29.0	23.5	26.0	23.0	21.5	22.0
14	30.5	24.0	27.0	27.5	25.5	26.5	29.5	23.0	26.0	22.5	21.0	21.5
15	32.0	24.5	27.5	30.0	23.5	26.5	28.5	24.0	26.0	26.0	21.0	23.0
16	33.0	24.5	28.0	32.0	24.5	27.5	27.0	24.5	25.5	26.0	21.0	23.5
17	33.0	24.5	27.5	34.5	25.0	28.5	---	---	---	28.0	22.5	25.0
18	33.5	24.0	28.5	---	---	---	---	---	---	29.0	24.5	26.5
19	28.5	28.5	28.5	---	---	---	30.5	23.0	26.5	26.5	21.0	23.0
20	33.0	26.0	29.0	---	---	---	30.0	24.0	26.5	23.0	20.5	21.5
21	34.0	26.0	29.0	---	---	---	30.5	24.0	26.5	25.0	22.0	23.5
22	33.0	25.0	28.5	---	---	---	29.5	23.5	26.0	27.0	23.0	24.5
23	34.0	25.0	29.0	---	---	---	25.0	22.0	23.0	28.5	24.0	26.0
24	32.5	26.0	29.0	---	---	---	23.0	22.0	22.5	26.5	22.5	24.0
25	---	---	---	---	---	---	25.5	22.5	23.5	26.5	21.5	23.5
26	---	---	---	---	---	---	26.0	22.5	24.5	26.0	22.5	24.0
27	---	---	---	---	---	---	25.5	24.0	24.5	22.5	17.0	19.0
28	---	---	---	---	---	---	24.5	23.5	24.0	20.5	14.0	17.0
29	---	---	---	---	---	---	25.0	23.0	24.0	21.0	15.0	18.0
30	---	---	---	---	---	---	26.0	24.5	25.0	22.0	16.0	19.0
31	---	---	---	---	---	---	27.0	23.5	25.0	---	---	---
MONTH	34.0	23.0	28.0	34.5	23.5	28.0	33.0	22.0	26.0	30.0	14.0	24.0
YEAR	34.5	.0	16.0									

08121000 COLORADO RIVER AT COLORADO CITY, TX

LOCATION.--Lat 32°23'33", long 100°52'42", Mitchell County, Hydrologic Unit 12080002, on right bank at Colorado City, 3,517 ft upstream from bridge on State Highway 377, 4,100 ft upstream from the Texas and Pacific Railroad Company bridge, 1.3 mi downstream from bridge on Interstate Highway 20 and U.S. Highway 80, 1.6 mi upstream from Lone Wolf Creek, and at mile 796.3.

DRAINAGE AREA.--3,966 mi², of which 2,381 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1923 to August 1925 (published as "at Colorado"), May 1946 to current year.

REVISED RECORDS.--WSP 1512: 1946(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,030.16 ft above sea level. Nov. 28, 1923, to Aug. 31, 1925, nonrecording gage at site 1.4 mi downstream at different datum. May 9 to Aug. 5, 1946, nonrecording gage at site 185 ft upstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Since July 1952, flow largely regulated by Lake J. B. Thomas (capacity, 203,600 acre-ft) 31 mi upstream. The Colorado River Municipal Water District diverts low flow into an off channel reservoir 3 mi upstream for brine disposal. There are numerous diversions from Lake J. B. Thomas for municipal use and for oil field operations. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--6 years (water years 1947-52) prior to completion of Lake J.B. Thomas, 85.4 ft³/s (61,870 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1947-52).--Maximum discharge, 24,900 ft³/s July 6, 1948 (gage height, 22.37 ft, from floodmark); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1910, 35.9 ft June 20, 1939, present site and datum, based on floodmarks 1,000 ft upstream and 3,740 ft downstream from gage; discharge, 66,000 ft³/s, by slope-area measurement of peak flow at site 2.5 mi upstream from gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.28	.26	.31	.41	.15	.36	.16	.02	.01	.06	68
2	1.4	.24	.24	.25	.62	.15	.41	.15	.02	.01	.06	.64
3	.53	.18	.24	.22	.62	.15	.41	.15	1.6	.02	.06	.21
4	.27	.15	.24	.24	.62	.15	.41	.15	.20	.02	.05	55
5	.15	.18	.24	.24	.59	.21	2.1	.14	.09	.01	6.9	16
6	.15	.24	.24	.24	.62	.24	1.2	.09	.06	.01	.35	.39
7	.15	.24	.24	.24	.76	.24	.51	.12	.12	.01	.14	.18
8	.15	.18	.16	.29	.70	.15	.42	.09	.10	.01	.09	.14
9	.15	.18	.15	.41	.62	.15	.23	.09	.08	.01	.10	.12
10	.15	.22	.11	.31	.62	.15	.33	.09	.04	.02	.42	.12
11	.15	.15	.15	.41	.61	.20	.26	.09	.03	.02	1.5	.12
12	.14	.15	.19	.29	.41	.24	.26	.09	.03	12	.37	.11
13	.15	.15	.24	.28	.41	.24	.39	.09	.03	1.8	.14	.19
14	.15	.15	.24	.24	.41	.24	.71	.11	.03	.43	.09	1.4
15	.15	.15	.24	.24	.60	.24	.76	.09	.04	.27	.07	2.8
16	.15	.15	.21	.24	.62	.24	.80	.09	.05	.16	1.7	.36
17	.15	.15	.24	.24	.62	.24	.68	.09	.05	.08	.40	.20
18	.15	.15	.24	.60	.69	.24	.78	.08	.06	.07	.19	.29
19	.15	.15	.17	.28	.92	.24	.68	.04	.04	.05	.12	12
20	.11	.15	.18	.29	.92	.24	.62	.03	.03	.04	.10	390
21	.10	.15	.19	.27	.63	.24	.62	.03	.03	.03	.08	448
22	.12	.15	.24	.34	.79	.24	.58	.02	.02	.03	.07	161
23	.09	.15	.24	.32	.62	.24	.76	.03	.02	.03	24	58
24	.09	.15	.24	.41	.46	.26	.74	.03	.02	.04	90	18
25	.12	.15	.24	.41	.41	.24	.37	.04	.02	.04	348	.57
26	.15	.15	.31	.41	.41	.24	.24	.03	.03	.06	211	.21
27	.15	.19	.41	.41	.41	.24	.33	.02	.03	.08	3.8	.15
28	.10	.24	.30	.41	.26	.29	.35	.02	.01	.07	97	.17
29	.10	.24	.28	.41	.17	.41	.20	.02	.01	.06	580	.17
30	.12	.24	.24	.37	---	.41	.24	.02	.01	.06	407	.17
31	.17	---	.23	.41	---	.41	---	.03	---	.06	186	---
TOTAL	6.01	5.40	7.14	10.03	16.55	7.32	16.75	2.32	2.92	15.61	1959.86	1234.71
MEAN	.19	.18	.23	.32	.57	.24	.56	.075	.097	.50	63.2	41.2
MAX	1.4	.28	.41	.60	.92	.41	2.1	.16	1.6	12	580	448
MIN	.09	.15	.11	.22	.17	.15	.20	.02	.01	.01	.05	.11
AC-FT	12	11	14	20	33	15	33	4.6	5.8	31	3890	2450

08121000 COLORADO RIVER AT COLORADO CITY, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1996#, BY WATER YEAR (WY)

MEAN	39.5	7.45	5.98	4.69	9.56	7.92	37.9	104	77.4	21.5	43.1	61.1
MAX	339	61.1	49.6	33.6	99.0	88.3	332	1047	745	197	684	817
(WY)	1987	1985	1992	1992	1957	1973	1957	1957	1982	1961	1971	1962
MIN	.000	.000	.026	.051	.061	.000	.010	.001	.000	.000	.000	.000
(WY)	1969	1956	1955	1971	1971	1956	1955	1970	1953	1974	1954	1954

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1953 - 1996#	
ANNUAL TOTAL	3533.00		3284.62			
ANNUAL MEAN	9.68		8.97		35.0	
HIGHEST ANNUAL MEAN					143	1957
LOWEST ANNUAL MEAN					.41	1970
HIGHEST DAILY MEAN	659	May 30	580	Aug 29	9560	May 25 1957
LOWEST DAILY MEAN	.03	Aug 24	.01	Jun 28	.00	Oct 4 1952
ANNUAL SEVEN-DAY MINIMUM	.04	Aug 19	.01	Jun 28	.00	Oct 4 1952
INSTANTANEOUS PEAK FLOW			714	Aug 29	13000	May 25 1957
INSTANTANEOUS PEAK STAGE			8.42	Aug 29	27.81	Sep 29 1980
ANNUAL RUNOFF (AC-FT)	7010		6520		25380	
10 PERCENT EXCEEDS	.75		.76		26	
50 PERCENT EXCEEDS	.26		.21		.62	
90 PERCENT EXCEEDS	.15		.03		.00	

Period of regulated streamflow.

08121000 COLORADO RIVER AT COLORADO CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1946 to September 1954, November 1956 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1946 to September 1954, November 1956 to current year.
WATER TEMPERATURE: November 1952 to September 1954, November 1956 to current year.

INSTRUMENTATION.--From 1969 to 1975, specific conductance was continuously recorded at this station.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 67,400 microsiemens May 14, 17, 1961; minimum daily, 240 microsiemens Sept. 29, 1980.
WATER TEMPERATURE: Maximum daily, 39.0°C July 21, 1995; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 43,400 microsiemens June 24; minimum daily, 892 microsiemens Aug. 30.
WATER TEMPERATURE: Maximum daily, 35.5°C July 5; minimum daily, 0.0°C Jan. 7, 31, Feb. 1, 3, 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT									
06...	1320	0.19	14000	20.0	1100	920	220	130	2800
NOV									
27...	1330	0.27	30100	13.0	2300	2100	510	250	6900
JAN									
29...	1225	0.34	28000	7.0	2600	2300	610	250	6300
MAR									
28...	1725	0.40	29900	20.0	2300	2100	540	220	6400
MAY									
29...	0800	0.02	23200	20.5	1900	1800	350	250	4900
AUG									
13...	0920	0.17	34000	23.5	2500	2300	590	240	7990

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT								
06...	37	10	170	1300	4200	0.70	0.50	8760
NOV								
27...	63	18	160	2400	10000	0.70	1.4	20200
JAN								
29...	54	16	220	2200	9700	0.70	1.3	19200
MAR								
28...	59	20	130	2400	9900	0.70	1.4	19500
MAY								
29...	49	17	110	3000	7100	0.90	4.6	15700
AUG								
13...	70	28	130	2100	12000	0.40	0.90	23000

08121000 COLORADO RIVER AT COLORADO CITY, TX--Continued

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.	1995	6.01	18100	11800	191	5400	87	2000	32	*
NOV.	1995	5.40	29400	19600	286	10000	145	2300	33	*
DEC.	1995	7.14	29000	19400	374	9800	189	2300	44	*
JAN.	1996	10.03	28400	18900	513	9500	258	2300	62	*
FEB.	1996	16.55	27400	18200	815	9100	406	2300	102	*
MAR.	1996	7.32	28800	19300	380	9700	192	2300	45	*
APR.	1996	16.75	27600	18400	831	9200	415	2300	103	*
MAY	1996	2.32	28400	18900	119	9500	60	2300	14	*
JUNE	1996	2.92	27900	18700	147	9500	75	2100	17	*
JULY	1996	15.61	21200	13900	585	6500	274	2200	91	*
AUG.	1996	1959.86	2920	1840	9740	700	3730	450	2360	380
SEPT	1996	1234.71	2310	1440	4810	530	1770	370	1240	310
TOTAL		3284.62	**	**	18800	**	7600	**	4140	**
WTD.AVG.		9.0	3330	2120	**	860	**	470	**	400

FROM DAILY OBSERVER
SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14800	e26900	e29800	28600	28400	26900	28700	28800	e21700	36000	37200	2950
2	14700	e26400	e29900	28500	28400	27500	28800	28200	e22300	35100	37300	5440
3	14200	e27700	e30000	28900	28800	27400	28800	e28000	22800	32000	36900	8200
4	13000	e28000	30100	29100	29500	27300	29300	e27900	23400	30400	36800	6000
5	13800	e28200	29800	29000	27900	28100	e25000	e27800	26800	28700	23100	4920
6	14000	28500	30000	28800	28000	28300	e26000	27700	26400	27200	25400	6400
7	e16000	29100	29700	28900	27400	28400	e26500	28600	29900	26800	26200	8400
8	e16300	29100	29300	28600	e27100	e28400	26800	29100	37700	25500	29100	10200
9	16500	29200	29900	28600	e26800	e28300	27300	28900	40800	25000	e30500	11400
10	16800	29300	29300	28300	e26500	e28200	27600	28600	40900	22700	e31900	12500
11	17500	29800	28600	28500	e26300	28300	27700	28100	40000	20800	e33300	12900
12	18100	29400	29000	e28700	26200	28200	27700	27900	38700	e20000	34800	13100
13	18700	28600	29800	e28500	26000	28600	27800	28200	37100	e21900	34400	13200
14	19400	29200	29300	e28400	26300	28600	28000	29400	e37200	e22800	33800	13500
15	19600	30200	e29000	28400	26400	28700	27700	30300	e37300	23800	25200	5660
16	20000	30300	e29100	27900	26500	28300	27500	30700	e37200	27900	14500	7930
17	20500	e30300	e29000	28000	26800	28500	27600	e30400	37400	31300	17500	9810
18	21700	e30600	e28600	28300	27300	28700	28400	e30100	37900	33000	22700	11500
19	22100	e30700	28100	28500	27200	29100	e28600	e29900	39400	33500	25000	7090
20	e22400	30800	28300	27900	27000	29000	e28400	29700	40300	33400	26000	e3000
21	e22500	30800	28500	28200	27600	29100	e28500	29800	41300	33800	26200	e1000
22	e23000	30900	28500	27800	27500	e29300	28300	28900	42000	34400	26500	e1500
23	22900	30600	28700	28400	e27600	e29500	28600	e28100	42800	34600	e10100	2660
24	23200	30200	28200	28500	e27800	e30000	28700	e27400	43400	31500	e8400	3930
25	23500	30100	e28200	28000	e28000	30500	28600	e26600	42800	30900	e5520	5140
26	24300	29100	e28600	e28100	28100	29900	28500	e25800	42300	e30600	3500	6270
27	25300	30200	e28600	e28200	28200	28900	28200	25100	40600	e30200	4050	7540
28	25400	30100	e28200	e28200	28000	29900	28200	24100	e39300	e29800	3460	8050
29	25600	30000	e28900	28300	27500	e29500	28500	23200	e38100	29500	e1000	8780
30	e25700	30000	e29000	28000	---	e29000	28600	20600	e36800	36700	892	9380
31	e26200	---	e28700	28300	---	e28700	---	e21200	---	38000	2490	---
MEAN	19900	29500	29100	28400	27400	28700	28000	27700	36200	29600	21700	7610

e Estimated

08121000 COLORADO RIVER AT COLORADO CITY, TX--Continued

FROM DAILY OBSERVER
WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	---	---	6.5	.0	5.0	11.5	15.5	---	25.5	25.5	24.5
2	20.5	---	---	3.0	1.5	7.5	14.5	28.5	---	27.0	32.0	26.5
3	19.0	---	---	1.0	.0	8.5	15.0	---	21.5	26.0	27.0	29.5
4	17.5	---	17.5	7.0	.0	13.0	14.5	---	24.5	27.0	28.0	29.5
5	22.0	---	9.5	4.0	1.0	16.0	---	---	23.5	35.5	25.0	23.5
6	20.0	13.0	7.5	2.0	4.0	10.5	---	22.0	24.5	27.0	26.5	28.5
7	---	13.0	8.5	.0	14.5	11.0	---	27.0	26.5	30.0	27.0	25.5
8	---	11.5	12.5	1.0	---	---	13.0	23.5	23.5	26.0	29.0	25.5
9	18.0	14.0	2.5	3.5	---	---	17.0	27.5	24.5	27.0	---	23.5
10	19.0	19.0	1.5	5.0	---	---	18.5	28.0	24.5	26.0	---	24.5
11	18.0	10.0	4.0	10.0	---	9.0	18.5	20.0	26.5	32.5	---	21.5
12	18.0	9.5	7.0	---	5.0	14.0	24.0	23.0	24.5	---	24.0	21.0
13	23.0	10.0	8.0	---	7.0	14.0	18.5	23.5	33.0	---	25.5	21.0
14	14.0	11.5	14.0	---	9.0	14.0	16.0	24.5	---	---	23.5	21.0
15	13.5	10.5	---	6.0	8.0	20.0	13.5	22.5	---	24.5	24.0	21.5
16	19.5	16.0	---	7.0	12.5	14.0	16.0	32.5	---	26.0	25.5	20.0
17	15.0	---	---	8.5	7.5	14.0	15.0	---	25.5	25.0	26.0	22.5
18	15.0	---	8.0	3.0	9.0	11.5	25.0	---	26.5	34.0	26.0	26.5
19	20.5	---	5.5	5.5	9.5	11.0	---	---	27.5	34.5	24.0	25.0
20	---	11.5	4.0	3.5	12.0	8.0	---	24.0	27.5	29.0	25.5	---
21	---	11.5	4.0	3.0	12.0	18.0	---	24.0	34.5	28.5	24.0	---
22	---	13.0	5.0	7.5	19.0	---	16.5	24.0	29.0	26.0	31.5	---
23	14.0	12.5	3.0	7.0	---	---	17.0	---	28.5	27.0	---	23.5
24	12.0	9.0	3.5	3.0	---	---	16.5	---	26.0	22.0	---	23.0
25	13.0	9.0	---	10.0	---	7.0	17.0	---	27.5	31.0	---	21.5
26	13.5	11.5	---	---	13.0	5.0	26.0	---	26.0	---	23.5	22.0
27	18.0	12.0	---	---	13.0	5.0	21.0	18.5	32.0	---	24.0	17.0
28	12.5	6.5	---	---	5.0	20.0	20.5	21.0	---	---	24.0	14.0
29	15.5	6.5	---	5.0	2.0	---	14.0	22.5	---	25.5	---	15.0
30	---	11.5	---	3.5	---	---	15.0	27.5	---	26.5	24.5	15.0
31	---	---	---	.0	---	---	---	---	---	25.5	24.5	---
MEAN	17.1	11.5	7.0	4.6	7.5	11.6	17.2	24.0	26.7	27.8	25.8	22.7

08123000 LAKE COLORADO CITY NEAR COLORADO CITY, TX

LOCATION.--Lat 32°20'41", long 100°55'10", Mitchell County, Hydrologic Unit 12080002, on left bank at municipal water-intake structure, 1.7 mi upstream from Colorado City Dam on Morgan Creek, 2.2 mi downstream from the Texas and Pacific Railway Co. bridge, 2.5 mi upstream from mouth, and 4.0 mi southwest of Colorado City.
DRAINAGE AREA.--344.7 mi², of which 42.7 mi² probably is noncontributing.

PERIOD OF RECORD.--April 1949 to current year.
Water-quality records.--Chemical analyses: October 1969 to September 1984.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Aug. 23, 1950, non-recording gages at or near powerplant about 0.7 mi downstream at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam 4,800 ft long. Storage began in April 1949, and the dam was completed in September 1949. The dam and lake are owned by the Texas Electric Service Co. to operate their thermal electric powerplant. The uncontrolled spillway is an excavated cut channel through natural ground 1,200 ft wide located 600 ft upstream and to the left of left end of dam. The spillway is designed to discharge 150,000 ft³/s at the maximum design flood elevation. The service spillway is an uncontrolled rectangular drop inlet located 100 ft upstream from dam with two uncontrolled openings of 10.0 by 12.0 ft. The spillway is designed for a maximum discharge of 5,000 ft³/s. A service outlet is provided for small releases downstream through a 30-inch valve-controlled concrete pipe. Records furnished by the Texas Electric Service Co. will show pumpage from Champion Creek Reservoir (capacity 42,500 acre-ft), into Lake Colorado City. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	2,090.0	-
Design flood	2,086.7	70,700
Crest of spillway	2,073.7	37,850
Crest of service spillway (top of conservation pool)	2,070.2	31,810
Lowest gated outlet (invert)	2,024.3	316

COOPERATION.--Capacity curve was furnished by the Texas Electric Service Co. Record of diversions for municipal use was furnished by the city of Colorado City.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 40,280 acre-ft Sept. 7, 1962 (elevation, 2,075.10 ft); minimum since first appreciable storage, 5,800 acre-ft Apr. 11-13, 1950 (elevation, 2,045.72 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 22,030 acre-ft Nov. 22 at 1200 hours (elevation, 2,063.38 ft); minimum, 16,920 acre-ft Aug. 22 (elevation, 2,059.04 ft).

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

2,045.0	5,530	2,060.0	17,980	2,070.0	31,480
2,050.0	8,740	2,064.0	22,820	2,073.0	36,570
2,055.0	12,880	2,067.0	26,930	2,076.0	42,350

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21330	21680	21770	21200	20610	20050	19140	e18330	e17750	17800	e17410	17760
2	21400	21680	21760	21180	20580	20020	19100	18290	e17770	17790	e17380	17770
3	21430	21680	21740	21170	20560	19980	19060	e18260	17800	e17780	e17370	17780
4	21440	21690	21720	21150	20560	19980	19040	18240	17790	e17760	e17350	18280
5	21440	21720	21690	21120	20530	19940	19040	18240	17790	e17750	e17340	18340
6	21440	21730	21670	21100	20520	19910	e19030	18300	17770	e17740	e17320	18360
7	21450	21740	21640	21080	20520	19860	e19030	18310	17770	e17720	e17300	18360
8	21450	21760	21600	21070	20560	19810	e19020	e18300	e17790	e17700	e17280	18380
9	21470	21780	21580	21050	20530	19790	e19010	e18290	e17820	e17690	e17250	18370
10	21480	21800	21530	21040	20510	19760	e19000	18280	17840	e17670	e17240	18370
11	21490	21800	21500	21010	20460	19740	e18980	e18230	17840	e17660	e17230	18370
12	21500	21810	21490	21010	20460	19710	e18970	e18180	e17850	e17650	e17220	18390
13	21500	21810	21470	21000	20460	19690	e18970	e18150	17850	e17640	17210	18400
14	21580	21830	21470	20970	20430	19660	e18960	e18120	17860	e17630	17210	18520
15	21590	21860	21440	20970	20400	19630	e18950	e18070	17880	e17620	17200	18480
16	21540	21870	21430	20960	20370	19610	e18940	18030	17890	e17600	17190	18470
17	21540	21900	21430	20950	20360	19580	18940	17960	17890	e17590	17140	18480
18	21580	21940	21400	20890	20360	19540	e18890	17940	e17900	e17580	17080	18500
19	21570	21960	21380	20860	20320	19490	e18850	e17910	e17910	e17570	17020	18660
20	21550	21990	21370	20850	20300	19470	e18800	17880	17910	e17550	16980	18720
21	21580	22000	21340	20850	20290	19440	e18760	17840	17890	e17540	16950	18780
22	21590	22000	21330	20840	20270	19420	e18720	e17800	17870	e17530	16950	18800
23	21540	21960	21320	20830	20240	19390	e18690	17770	17880	e17520	17110	18810
24	21540	21940	21310	20800	20210	19360	e18640	17740	17860	e17510	17090	18810
25	21580	21910	21290	20780	20210	19300	e18600	17770	17860	e17480	17210	18820
26	21590	21890	21280	20750	20190	19260	18550	17740	17860	e17470	17210	18800
27	21590	21850	21260	20770	20160	19270	e18500	17720	17850	e17460	17390	18750
28	21590	21810	21230	20720	20100	19270	e18470	17730	17830	e17450	17460	18740
29	21600	21810	21220	20680	20060	19260	e18420	17730	17810	e17440	17530	18740
30	21620	21770	21220	20640	---	19220	e18380	17720	17800	e17430	17570	18750
31	21670	-	21210	20630	---	19170	---	17730	---	e17420	17730	---
MAX	21670	22000	21770	21200	20610	20050	19140	18330	17910	17800	17730	18820
MIN	21330	21680	21210	20630	20060	19170	18380	17720	17750	17420	16950	17760
(+)	2063.10	2063.18	2062.73	2062.26	2061.79	2061.04	2060.35	2059.77	2059.84	2059.49	2059.77	2060.68
(@)	+340	+100	-560	-580	-570	-890	-790	-650	+70	-380	+310	+1020

CAL YR 1995 MAX 22870 MIN 20370 (@) -840
WTR YR 1996 MAX 22000 MIN 16950 (@) -2580

e Estimated
(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08123800 BEALS CREEK NEAR WESTBROOK, TX

LOCATION.--Lat 32°11'57", long 101°00'49", Mitchell County, Hydrologic Unit 12080007, on left bank at downstream side of bridge on State Highway 163, 2.1 mi downstream from Hackberry Creek, 10.8 mi south of Westbrook, 15.7 mi southwest of Colorado City, and 19.1 mi upstream from mouth.

DRAINAGE AREA.--9,802 mi², of which 7,814 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to current year.

REVISED RECORDS.--WRD TX-72-1: 1971. WDR TX 81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,048.74 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Low flow is affected by diversion upstream from station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1908, about 24.5 ft in 1922, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 7	1100	984	9.43	Aug. 24	1400	1,490	11.95
Aug. 11	1915	979	9.40	Sept. 20	0415	950	9.24

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	1.8	.04	.08	.08	.07	.04	.01	.01	.04	.01	10
2	2.2	.13	.04	.08	.07	.07	.04	.01	2.2	.04	.01	e4.0
3	.25	.06	.04	.07	.06	.07	.04	.01	1.2	.04	.01	e1.7
4	.11	.05	.04	.07	.05	.06	.04	.01	.22	.04	.01	2.8
5	.05	.04	.04	.07	.06	.05	4.6	.01	6.3	.03	.00	157
6	.03	.05	.04	.07	.06	.04	1.9	328	.95	.03	.00	84
7	.03	.04	.03	.07	.06	.03	6.2	505	.24	.03	.00	37
8	.03	.04	.04	.07	.06	.04	3.1	14	.10	.03	.00	e11
9	.03	.05	.03	.07	.07	.04	.50	3.2	.05	.03	.00	e5.2
10	.03	.05	.04	.07	.08	.04	.15	.76	.03	.02	1.5	e3.1
11	.03	.04	.04	.07	.07	.04	.08	.24	.01	.02	421	e2.4
12	.03	.04	.05	.07	.07	.04	.05	.12	.01	.02	68	e1.6
13	.03	.04	.05	.07	.08	.04	.04	.06	.01	.02	7.1	e1.1
14	.02	.04	.05	.07	.08	.04	.03	.05	8.6	.03	2.1	18
15	.03	.05	.05	.07	.08	.04	.03	.03	2.8	.02	.82	221
16	.03	.05	.07	.07	.07	.04	.03	.02	.29	.02	.42	29
17	.03	.05	.07	.07	.07	.04	.03	.01	.14	.01	.24	7.7
18	.03	.05	.06	.06	.08	.04	.03	.01	26	.01	.14	5.2
19	.03	.05	.05	.06	.07	.04	.03	.01	3.5	.01	35	270
20	.02	.04	.05	.07	.08	.04	.03	.01	.57	.01	8.4	372
21	.02	.04	.05	.07	.08	.04	.04	.01	.17	.01	2.4	19
22	.03	.04	.05	.08	.07	.04	.04	.01	.09	.01	.78	e6.5
23	.02	.04	.05	.08	.06	.04	.03	.01	.05	.01	287	e3.3
24	.03	.04	.05	.08	.06	.04	.03	.01	.03	.01	1070	1.8
25	.04	.04	.05	.08	.07	.03	.02	.01	.03	.01	304	1.2
26	.04	.04	.05	.08	.07	.03	.01	.01	.04	.01	30	.76
27	.04	.03	.05	.08	.06	.09	.02	.01	.03	.01	54	.58
28	.03	.03	.06	.08	.05	.08	.02	.01	.03	.01	208	.64
29	.04	.03	.06	.08	.05	.05	.01	.01	.03	.01	112	.98
30	.04	.04	.06	.08	---	.04	.01	.01	.03	.01	74	.70
31	.08	---	.05	.08	---	.04	---	.01	---	.01	56	---
TOTAL	3.47	3.13	1.50	2.27	1.97	1.43	17.22	851.68	53.76	0.61	2742.94	1279.26
MEAN	.11	.10	.048	.073	.068	.046	.57	27.5	1.79	.020	88.5	42.6
MAX	2.2	1.8	.07	.08	.08	.09	6.2	505	26	.04	1070	372
MIN	.02	.03	.03	.06	.05	.03	.01	.01	.01	.01	.00	.58
AC-FT	6.9	6.2	3.0	4.5	3.9	2.8	34	1690	107	1.2	5440	2540

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1996, BY WATER YEAR (WY)

MEAN	42.8	6.19	5.73	5.44	8.13	7.39	20.2	62.5	42.0	27.2	18.7	67.5
MAX	572	29.4	49.2	47.0	94.9	75.6	256	334	254	258	168	680
(WY)	1987	1987	1992	1987	1992	1973	1966	1994	1987	1961	1971	1980
MIN	.000	.060	.048	.073	.068	.046	.074	.14	.020	.000	.005	1.55
(WY)	1964	1990	1996	1996	1996	1996	1986	1962	1990	1964	1970	1968

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1959 - 1996	
ANNUAL TOTAL	4315.58		4959.24			
ANNUAL MEAN	11.8		13.5		26.2	
HIGHEST ANNUAL MEAN					107	1987
LOWEST ANNUAL MEAN					4.30	1983
HIGHEST DAILY MEAN	832	May 30	1070	Aug 24	5890	Sep 29 1980
LOWEST DAILY MEAN	.01	Sep 8	.00	Aug 5	.00	Oct 1 1958
ANNUAL SEVEN-DAY MINIMUM	.02	Sep 2	.00	Aug 3	.00	Oct 1 1958
INSTANTANEOUS PEAK FLOW			1490	Aug 24	8780	May 19 1961
INSTANTANEOUS PEAK STAGE			11.95	Aug 24	21.94	Sep 29 1980
ANNUAL RUNOFF (AC-FT)	8560		9840		18980	
10 PERCENT EXCEEDS	8.2		4.8		26	
50 PERCENT EXCEEDS	.10		.05		2.4	
90 PERCENT EXCEEDS	.03		.01		.04	

e Estimated

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1958 to current year. Chemical and biochemical analyses: October 1974 to October 1977. Sediment analyses: October 1974 to October 1977.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1958 to current year.
WATER TEMPERATURE: November 1958 to current year.

INSTRUMENTATION.--Since March 5, 1981, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--Estimated mean specific conductance and estimated mean temperature values and interruptions in the maximum and minimum specific conductance and temperature values were due to malfunction 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 regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 24,500 microsiemens Aug. 9, 1989; minimum, 169 microsiemens Apr. 4, 1995.
WATER TEMPERATURE: Maximum, 37.0°C June 28, 1960, and July 3, 1976; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 16,900 microsiemens Aug. 10; minimum, 200 microsiemens Aug. 23.
WATER TEMPERATURE: Maximum, 31.5°C Sept. 3; minimum, 1.0°C Feb. 3, 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT									
12...	0900	0.03	2820	19.0	560	410	120	64	350
NOV									
27...	1140	0.04	3840	14.0	760	590	150	93	510
FEB									
08...	1252	0.06	5570	13.0	1100	920	220	140	800
MAR									
29...	0840	0.05	6310	12.0	1200	1100	200	170	920
MAY									
29...	1330	0.01	7490	25.0	1500	1300	300	190	980
AUG									
13...	1321	6.0	3140	27.5	640	570	140	71	390

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT								
12...	6	6.1	160	270	640	0.50	6.7	1550
NOV								
27...	8	6.1	170	400	920	0.50	3.9	2190
FEB								
08...	10	6.0	200	630	1400	0.90	3.1	3320
MAR								
29...	12	8.9	130	730	1700	0.90	2.0	3810
MAY								
29...	11	11	190	840	1900	1.0	9.9	4340
AUG								
13...	7	18	74	420	760	0.40	10	1850

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

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.	1995	3.47	3220	1950	18	820	7.7	390	3.6	670
NOV.	1995	3.13	4200	2570	22	1100	9.1	530	4.4	880
DEC.	1995	1.50	5150	3190	13	1300	5.4	670	2.7	1100
JAN.	1996	2.27	5560	3450	21	1400	8.8	730	4.5	1200
FEB.	1996	1.97	6080	3800	20	1600	8.4	820	4.4	1300
MAR.	1996	1.43	6630	4170	16	1700	6.6	910	3.5	1400
APR.	1996	17.22	3120	1910	89	800	37	390	18	650
MAY	1996	851.68	2790	1720	3950	720	1650	360	822	580
JUNE	1996	53.76	3060	1860	270	780	113	370	54	640
JULY	1996	0.61	4730	2930	4.8	1200	2.0	620	1.0	990
AUG.	1996	2742.94	1270	755	5590	320	2370	140	1060	260
SEPT	1996	1279.26	1540	920	3180	390	1340	180	606	320
TOTAL		4959.24	**	**	13200	**	5560	**	2580	**
WTD.AVG.		14	1630	986	**	420	**	190	**	340

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	3270	3120	3180	4730	3760	4350	4430	4030	4220	5670	5150	5490
2	3290	3200	3240	4690	4610	4640	4270	3910	4080	5230	5030	5130
3	3210	2790	3040	4610	4490	4530	4390	4190	4290	5420	4990	5240
4	2940	2620	2760	4490	4410	4440	4790	4100	4310	5500	5140	5340
5	2680	2490	2580	4410	4280	4330	4820	4300	4640	5260	5140	5210
6	2550	2410	2480	4280	4160	4210	4820	4180	4560	5380	5100	5230
7	2540	2430	2470	4200	4120	4170	4860	4660	4800	5570	5180	5390
8	2650	2500	2560	4200	4080	4150	5020	4410	4540	5730	5170	5500
9	2720	2610	2670	4120	4040	4060	5300	4970	5170	5770	5450	5580
10	2750	2640	2690	4080	4000	4040	5210	4570	4930	5680	5210	5410
11	2780	2710	2750	4080	3960	4020	5170	4690	4840	5680	5440	5570
12	2830	2730	2780	4000	3920	3960	5290	4880	5070	5520	5360	5480
13	3110	2830	2890	3960	3880	3930	5120	4880	4960	5710	5400	5530
14	3190	3110	3150	3920	3840	3900	5240	5040	5170	5790	5480	5620
15	3110	2910	2980	3920	3800	3860	5280	5080	5170	5590	5390	5480
16	3070	2910	3050	3880	3760	3810	5320	5030	5220	5710	5350	5510
17	3150	3030	3110	3800	3760	3770	5230	5030	5140	5710	5630	5680
18	3230	3110	3200	3800	3640	3700	5510	5110	5340	5700	5580	5660
19	3320	3070	3150	3680	3560	3600	5310	5140	5220	5740	5460	5580
20	3360	3270	3320	3600	3520	3560	5380	5140	5240	5620	5460	5530
21	3440	3190	3270	3560	3480	3530	5300	5060	5150	5620	5300	5460
22	3680	3400	3520	3720	3520	3590	5540	5180	5410	5690	5500	5580
23	3880	3640	3750	3720	3680	3690	5690	5210	5500	5730	5490	5620
24	3880	3760	3830	3720	3640	3680	5930	5530	5730	5610	5450	5560
25	3880	3720	3830	3800	3720	3750	5970	5490	5810	5770	5570	5640
26	3840	3640	3740	3960	3720	3810	5970	5600	5810	5880	5650	5790
27	3840	3760	3810	3960	3800	3880	5880	5480	5710	5960	5570	5760
28	3840	3720	3770	4160	3790	4040	5800	5440	5670	5920	5720	5860
29	3880	3800	3830	4030	3670	3880	5560	5320	5430	5990	5720	5880
30	4040	3800	3980	4110	3510	3810	5630	5390	5500	5990	5830	5900
31	4040	3680	3960	---	---	---	5670	5350	5520	6070	5710	5970
MONTH	4040	2410	3200	4730	3480	3960	5970	3910	5100	6070	4990	5550

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6100	5910	6010	6870	6420	6570	6870	6750	6800	11200	10800	11100
2	6140	5980	6080	6620	6370	6500	6900	6820	6860	11100	10300	10800
3	6290	6060	6150	6570	6360	6470	6980	6780	6880	10600	10100	10400
4	6610	6180	6350	6560	6390	6470	6980	6890	6960	10600	10200	10300
5	6290	5780	6060	6590	6420	6530	6970	561	3830	10400	10100	10300
6	6130	5580	5830	6700	6540	6580	1400	520	772	12400	432	5780
7	5660	5470	5570	6770	6530	6670	3760	800	1670	1490	314	882
8	5750	5500	5630	6800	6560	6730	4960	3760	4330	1840	1490	1670
9	5830	5580	5780	6800	6510	6670	6470	4800	5620	2080	1840	1940
10	5980	5780	5890	6670	6350	6550	7700	6430	7010	2240	2080	2130
11	6180	5930	6060	6660	6490	6540	8460	7660	8060	2390	2200	2270
12	6210	5920	6070	6650	6480	6520	8810	8340	8530	2620	2350	2460
13	6120	5910	6000	6680	6480	6540	8930	8570	8760	3050	2620	2760
14	6160	5910	6040	6710	6480	6600	9000	8800	8910	3290	2900	3060
15	6110	5900	6040	6740	6500	6670	9080	8920	9000	3520	3290	3420
16	6100	5890	6000	6740	6610	6690	9110	8750	9030	4100	3480	3760
17	6040	5760	5880	6840	6680	6710	9380	9030	9180	4530	4100	4280
18	6080	5750	5960	6870	6680	6790	9740	9260	9460	4920	4530	4680
19	6110	5900	6050	6870	6710	6830	9890	9540	9730	5230	4920	5040
20	6140	6020	6070	6980	6700	6830	10000	9810	9900	5700	5190	5430
21	6250	6090	6130	6970	6650	6830	10200	9760	9990	6000	5580	5770
22	6280	6080	6170	6850	6800	6830	10600	10200	10400	6240	5970	6090
23	6280	6230	6270	6950	6790	6830	11000	10500	10800	6510	6160	6320
24	6390	6270	6310	7020	6790	6870	11400	11000	11200	6580	6390	6490
25	6420	6220	6300	7050	6930	7000	11500	11200	11400	6730	6580	6660
26	6450	6250	6390	7050	7000	7020	11500	11200	11400	7040	6690	6880
27	6490	6360	6450	7040	6260	6710	11200	10900	11000	7230	6960	7080
28	6600	6440	6500	6410	5980	6260	11000	10700	10900	7420	7150	7250
29	6630	6590	6620	6520	6250	6390	11100	10900	11000	7420	7260	7350
30	---	---	---	6710	6520	6590	11200	11000	11100	7480	7280	7410
31	---	---	---	6790	6630	6730	---	---	---	7480	7280	7380
MONTH	6630	5470	6090	7050	5980	6660	11500	520	8350	12400	314	5710

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7680	7440	7550	2960	2790	2880	8510	7910	8200	3520	2800	3280
2	7680	325	6500	3120	2910	3030	8990	8510	8720	3000	2640	2770
3	732	284	526	3280	3080	3190	9470	8990	9270	2640	2560	2600
4	1060	691	810	3520	3280	3410	9660	9140	9470	2640	2160	2530
5	4750	1060	3480	3880	3480	3710	---	---	---	5200	520	2020
6	3410	2920	3170	4090	3840	3980	---	---	---	4240	1200	2360
7	2920	2680	2770	4290	4090	4160	---	---	---	4040	2280	3190
8	2840	2680	2790	4410	4250	4310	---	---	---	6280	3800	5300
9	3170	2840	3030	4410	4330	4370	---	---	---	6320	5760	6150
10	3530	3130	3270	4530	4370	4450	16900	16700	16800	5760	4880	5280
11	3610	3370	3460	4650	4490	4570	16700	---	1500	4880	4560	4700
12	3780	3570	3660	4770	4650	4700	---	---	e2500	4600	4400	4500
13	4060	3780	3910	5010	4770	4940	---	---	3000	4400	4160	4270
14	6170	2190	4060	5130	4970	5070	3520	3280	3390	4160	400	3480
15	3690	2110	2930	5290	5130	5210	3600	3480	3530	1600	400	1140
16	4380	3690	4070	5370	5250	5300	3640	3560	3590	1000	720	849
17	4460	4180	4300	5410	5290	5340	3720	3600	3660	1160	960	1100
18	4750	1010	2790	5530	5360	5440	3800	3680	3720	1320	1160	1220
19	1260	1090	1190	5600	5440	5520	5680	2320	3850	4240	240	1160
20	1220	1180	1200	5760	5520	5630	2320	2200	2230	1560	600	1130
21	1260	1130	1200	5840	5640	5730	2320	2200	2240	1320	1160	1190
22	1300	1180	1240	5880	5720	5800	2360	2240	2310	1640	1160	1350
23	1540	1300	1410	5960	5800	5880	2360	200	1430	2480	1640	2070
24	1580	1500	1540	8850	5960	7660	1600	320	646	3040	2480	2770
25	1700	1540	1630	8850	8600	8770	1600	1040	1370	3480	3040	3280
26	1900	1700	1820	8600	8320	8480	4280	1600	3070	3800	3440	3620
27	2270	1900	2130	8320	8000	8160	4440	440	3670	3880	3760	3800
28	2430	2230	2340	8040	7800	7930	3360	240	1100	4040	3880	3940
29	2630	2430	2550	7870	7710	7800	5080	480	2090	4280	4040	4160
30	2790	2630	2700	7750	7630	7670	3560	880	1290	4360	4240	4290
31	---	---	---	7990	7590	7820	2800	840	1510	---	---	---
MONTH	7680	284	2800	8850	2790	5510	16900	200	4010	6320	240	2980
YEAR	16900	200	5010									

e Estimated

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.0	21.5	22.5	19.0	17.0	18.0	13.5	10.5	12.0	10.0	6.5	8.0
2	22.5	20.5	21.5	18.5	15.0	16.5	13.5	11.0	12.5	7.0	5.0	6.0
3	21.0	19.5	20.5	15.0	13.0	13.5	13.5	10.5	12.0	7.5	2.5	5.5
4	21.5	19.5	20.5	13.0	11.0	12.0	13.0	9.0	11.5	8.5	5.5	7.5
5	21.5	19.5	20.0	14.0	10.5	12.0	14.0	11.0	12.0	8.0	4.5	5.5
6	20.0	18.0	19.0	15.5	14.0	15.0	13.0	9.5	11.5	5.5	3.5	4.5
7	19.0	17.0	18.0	16.5	15.0	15.5	11.0	9.0	10.0	7.0	2.5	5.0
8	20.0	17.5	18.5	15.5	14.0	14.5	11.5	8.0	10.0	9.0	5.0	7.0
9	20.0	18.5	19.5	16.0	14.0	15.0	8.5	5.5	7.0	9.5	5.0	7.5
10	20.5	18.5	19.5	17.0	16.0	16.5	8.0	5.0	6.5	10.0	6.0	8.0
11	20.5	19.0	20.0	16.0	13.5	14.5	9.5	6.5	8.0	10.0	8.0	9.0
12	22.0	19.0	20.5	14.5	12.5	13.5	11.5	8.0	9.5	10.0	6.0	8.5
13	21.5	19.0	20.5	15.5	13.5	14.5	11.5	9.0	10.0	11.0	6.0	8.5
14	20.0	17.5	19.0	15.5	14.0	14.5	13.0	10.0	11.5	11.5	8.0	9.5
15	19.5	16.5	18.0	15.0	13.5	14.5	13.0	10.5	11.5	11.0	8.0	9.5
16	19.5	17.0	18.5	15.0	13.5	14.5	11.5	9.0	10.5	11.0	8.0	9.5
17	20.0	17.0	18.5	15.5	15.0	15.0	11.5	10.5	11.0	11.5	9.0	10.5
18	20.5	17.5	19.0	16.0	14.5	15.0	11.0	8.0	9.5	10.5	4.0	6.5
19	21.0	19.0	19.5	16.0	14.5	15.5	9.0	6.5	7.5	6.5	2.0	4.5
20	19.0	16.5	17.5	15.5	14.5	15.0	9.0	5.0	7.0	8.0	4.0	6.0
21	18.5	15.5	17.0	15.5	14.5	15.0	7.5	5.0	6.0	9.0	4.5	7.0
22	19.0	15.5	17.5	16.0	14.5	15.5	7.5	5.5	6.5	13.5	6.5	10.0
23	18.5	17.0	17.5	15.5	14.0	15.0	8.0	5.0	6.5	12.0	8.5	10.5
24	17.0	15.0	16.0	14.5	12.5	13.5	7.5	5.0	6.0	10.0	6.0	8.0
25	18.5	15.5	17.0	14.5	13.0	13.5	8.5	5.0	7.0	10.5	5.5	7.5
26	19.5	17.5	18.5	14.5	13.0	14.0	9.5	6.0	8.0	9.5	7.0	8.0
27	19.0	17.0	18.0	14.5	10.5	13.5	9.5	6.0	7.5	9.5	5.5	6.5
28	18.0	16.0	17.0	10.5	9.0	10.0	9.5	5.5	7.5	10.5	5.0	7.5
29	18.5	16.0	17.5	11.5	7.5	10.0	8.0	4.0	6.5	10.0	6.5	8.5
30	18.0	18.0	18.0	12.5	8.0	10.5	9.5	7.5	8.5	9.5	5.5	7.5
31	19.5	17.5	18.5	---	---	---	10.0	6.5	8.5	5.5	3.0	4.0
MONTH	23.0	15.0	19.0	19.0	7.5	14.0	14.0	4.0	9.0	13.5	2.0	7.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5.5	2.0	3.5	9.5	3.0	6.0	17.0	11.0	14.5	21.5	15.0	18.5
2	4.0	1.5	2.5	11.0	4.5	8.0	17.0	12.5	14.5	24.0	16.5	20.5
3	3.0	1.0	2.0	14.0	6.5	10.0	19.5	13.0	16.0	26.0	19.5	22.5
4	4.0	1.0	3.0	17.0	10.5	13.0	17.5	12.5	14.5	27.5	21.0	24.0
5	7.0	3.0	5.0	16.5	13.0	14.5	12.5	3.0	7.5	29.5	22.0	24.5
6	10.5	5.0	7.5	15.5	8.5	12.5	13.0	5.0	8.5	24.0	16.5	20.0
7	14.5	8.0	11.0	10.5	4.5	7.5	17.0	8.5	12.5	25.0	16.5	21.0
8	13.5	10.5	12.0	7.5	3.5	5.5	20.5	12.0	15.5	29.0	22.0	25.0
9	13.5	8.5	11.0	10.0	2.0	6.0	23.5	16.0	19.0	29.5	22.5	25.5
10	15.0	10.0	12.0	13.0	5.0	9.0	21.5	17.0	19.5	27.5	23.0	25.0
11	11.0	7.5	9.0	14.5	7.5	11.0	23.0	16.5	19.5	26.5	20.5	23.5
12	10.5	5.0	8.0	17.5	10.0	13.5	21.5	18.5	20.0	28.5	21.0	24.0
13	10.5	6.0	8.5	20.5	12.0	16.0	22.0	16.5	19.5	28.5	22.0	25.0
14	12.5	8.0	10.5	18.0	13.5	16.0	19.0	15.0	17.0	26.5	22.5	24.0
15	13.0	9.0	11.0	18.0	12.5	15.0	18.5	13.0	15.5	29.0	21.5	25.0
16	10.5	7.0	9.0	18.0	11.0	15.0	19.0	13.5	16.5	28.0	21.5	24.5
17	11.5	6.5	9.0	18.5	12.5	15.5	21.5	14.5	18.0	27.0	22.5	24.5
18	13.0	7.0	10.0	17.5	11.5	14.0	22.0	16.0	19.0	27.0	22.5	24.5
19	14.0	9.0	11.5	15.5	9.0	12.5	23.0	17.0	20.0	27.0	22.0	24.5
20	14.5	10.5	12.5	15.0	8.0	12.0	21.5	16.0	19.0	29.0	21.5	25.0
21	16.0	11.5	14.0	17.5	8.0	13.0	23.5	16.5	19.5	30.0	22.5	26.0
22	15.5	12.0	14.0	19.5	13.0	16.0	22.0	17.5	20.0	29.0	24.0	26.0
23	15.5	11.5	13.5	21.0	14.5	17.0	21.5	16.0	18.5	28.5	23.0	25.5
24	14.0	9.0	12.0	19.5	13.5	17.0	22.5	16.5	19.5	27.5	23.5	25.0
25	17.0	12.5	14.5	14.5	8.5	12.0	21.5	15.0	18.5	24.0	22.5	23.5
26	16.5	12.5	14.5	8.5	5.0	6.5	22.5	16.0	19.5	27.0	21.5	24.0
27	15.5	12.5	14.0	6.5	5.0	5.5	25.0	17.5	21.5	26.0	20.0	23.0
28	13.5	5.5	8.0	13.5	4.5	9.0	23.0	18.0	21.0	27.0	21.0	23.5
29	5.5	3.5	4.5	18.5	11.5	14.5	20.0	14.5	17.5	26.5	22.0	24.0
30	---	---	---	17.5	12.5	15.0	21.0	13.5	17.5	25.0	21.5	23.0
31	---	---	---	16.5	11.5	14.0	---	---	---	25.5	22.0	23.5
MONTH	17.0	1.0	9.5	21.0	2.0	12.0	25.0	3.0	17.0	30.0	15.0	24.0

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29.5	23.0	25.5	26.5	24.0	25.5	24.5	23.0	24.0	28.5	23.5	25.5
2	26.5	22.5	24.5	27.0	24.0	25.5	26.0	22.5	24.5	31.0	24.0	27.0
3	25.5	18.0	22.0	26.0	24.0	25.0	26.0	23.0	24.5	31.5	25.0	28.0
4	28.0	20.5	24.0	26.5	23.5	25.0	26.5	22.5	24.5	30.5	25.5	27.0
5	31.0	24.0	27.0	26.0	23.5	25.0	---	---	---	26.0	21.5	23.5
6	31.0	23.0	27.0	26.5	23.5	25.0	---	---	---	27.0	22.5	24.5
7	28.0	22.5	25.0	26.5	23.5	25.5	---	---	---	29.0	24.0	26.0
8	28.0	22.0	24.5	26.5	24.0	25.0	---	---	---	30.0	24.5	27.0
9	27.5	22.5	25.0	26.5	24.0	25.0	---	---	---	30.5	24.0	27.0
10	29.5	23.5	26.0	26.0	23.5	25.0	24.5	24.5	24.5	30.5	24.0	27.0
11	29.5	24.5	26.5	26.5	23.5	25.0	24.5	22.0	23.0	29.5	23.5	26.5
12	27.5	23.5	25.5	25.5	24.0	24.5	---	---	e25.5	26.5	24.0	25.0
13	28.5	24.0	26.0	25.5	23.5	24.5	---	---	28.0	24.0	21.5	22.5
14	28.5	24.0	26.0	24.5	23.5	24.0	29.0	24.5	27.0	22.5	21.0	22.0
15	27.5	24.0	25.5	26.0	23.0	24.5	28.5	25.0	27.0	23.5	20.5	22.0
16	28.5	25.5	27.0	25.0	23.5	24.5	27.5	25.0	26.0	26.5	21.0	23.5
17	28.5	25.0	26.5	26.0	23.0	24.5	29.0	24.5	26.5	27.5	22.5	25.0
18	28.5	24.5	26.5	26.5	23.0	24.5	28.0	24.5	26.0	29.5	24.5	26.5
19	27.5	25.5	26.5	26.5	23.5	25.0	29.5	24.5	27.0	27.0	20.0	23.5
20	28.5	25.5	27.0	27.0	23.5	25.5	31.0	24.5	27.5	26.0	21.5	23.5
21	27.5	25.0	26.0	27.0	23.5	25.5	30.0	25.0	27.5	27.0	22.5	24.5
22	26.0	24.0	25.5	26.5	23.5	25.0	31.0	25.0	27.5	29.0	23.0	25.5
23	26.5	24.0	25.0	27.5	24.0	25.5	26.5	22.5	24.0	30.5	24.0	27.0
24	26.5	24.0	25.0	25.5	23.0	24.5	23.0	22.5	22.5	28.0	23.0	24.5
25	26.5	24.0	25.0	25.5	22.5	24.0	26.5	22.5	24.0	28.0	22.0	24.5
26	25.0	24.0	24.5	26.5	23.0	24.5	27.5	24.0	25.5	27.5	23.0	24.5
27	25.0	23.0	24.0	25.5	23.0	24.5	27.0	23.5	25.5	23.5	17.5	19.5
28	26.5	23.5	25.0	26.0	23.0	24.5	26.0	23.5	24.5	22.5	14.5	18.0
29	27.0	24.0	25.5	26.0	23.0	24.5	26.0	23.5	24.5	23.0	16.0	19.5
30	26.0	24.0	25.0	24.5	23.0	24.0	26.0	23.5	25.0	24.0	17.0	20.0
31	---	---	---	26.5	23.0	24.5	27.5	23.0	25.0	---	---	---
MONTH	31.0	18.0	25.5	27.5	22.5	25.0	31.0	22.0	25.5	31.5	14.5	24.5
YEAR	31.5	1.0	17.5									

e Estimated

08123850 COLORADO RIVER ABOVE SILVER, TX

LOCATION.--Lat 32°03'13", long 100°45'42", Coke County, Hydrologic Unit 12080008, on right bank 25 ft downstream from Pan American Oil Co. bridge, 4.7 mi west of Silver, and at mile 756.0.

DRAINAGE AREA.--14,910 mi², of which 10,260 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1967 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,907.66 ft above sea level. Prior to Oct. 4, 1972, water-stage recorder at site 0.5 mi downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. For affects by upstream diversions, see station 08121000. There is also regulation upstream by Lake J. B. Thomas (capacity 203,600 acre-ft), by Lake Colorado City (station 08123000), and by Champion Creek Reservoir (capacity, 42,500 acre-ft). Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	95	3.1	3.3	2.6	1.4	1.7	.07	.89	5.5	e.07	140
2	5.6	20	4.1	3.3	2.4	1.4	1.5	.07	9.2	5.7	e.05	69
3	7.0	8.1	4.0	3.6	2.4	1.7	1.6	.07	4.9	4.5	.07	42
4	4.6	5.3	4.1	4.1	2.4	2.4	1.1	.07	20	3.4	.05	23
5	3.7	4.1	4.0	4.1	2.4	2.6	6.1	.07	15	4.2	.11	192
6	6.1	3.7	3.7	3.9	2.4	1.7	7.8	10	6.7	3.6	.10	400
7	6.9	3.7	3.7	3.7	2.8	1.1	4.9	475	4.2	2.4	.09	99
8	4.8	3.7	3.3	3.7	3.2	1.1	7.7	179	3.8	2.0	.03	49
9	3.7	3.3	2.8	3.7	2.8	1.1	6.9	24	3.8	2.0	.05	24
10	3.3	3.1	2.8	3.7	2.7	1.3	5.0	8.5	3.4	.98	.12	15
11	2.8	2.0	2.8	3.7	2.0	1.7	4.8	4.9	2.1	.68	20	11
12	2.5	2.0	2.8	3.7	2.0	1.7	2.8	3.8	1.6	.68	292	8.8
13	2.2	2.0	2.8	3.3	2.0	1.7	2.0	2.7	1.3	.56	49	9.0
14	1.7	2.0	2.8	3.3	2.0	1.7	1.0	1.7	1.0	13	15	31
15	1.7	2.0	2.8	3.3	2.0	1.7	.68	1.4	2.0	2.2	8.6	469
16	1.7	2.0	2.8	3.3	2.0	1.7	.68	.83	1.6	.08	6.3	224
17	1.7	2.0	2.8	3.3	2.0	1.7	.68	.61	2.0	.05	4.8	55
18	1.7	2.0	2.9	2.4	2.0	1.1	.61	.34	36	.04	17	25
19	1.5	2.0	3.3	2.4	2.0	1.1	.49	.29	17	.03	8.2	37
20	1.1	2.0	3.3	2.7	2.0	1.1	.39	.27	22	.03	14	613
21	1.1	2.0	3.3	2.4	2.0	1.1	.39	.21	15	.06	15	172
22	1.1	2.0	2.9	2.7	2.0	1.1	1.3	.21	13	.07	7.8	258
23	1.1	2.0	2.8	2.8	1.8	1.5	3.0	.21	13	.07	63	134
24	1.1	2.8	2.8	2.8	1.4	1.5	1.4	.16	13	.05	572	50
25	1.1	2.8	2.8	2.8	1.4	1.1	.61	.15	12	.05	797	33
26	1.1	2.8	2.8	2.8	1.4	1.1	.29	.14	12	.05	215	24
27	1.1	2.8	2.8	2.8	1.4	1.3	.29	.11	12	.09	138	15
28	1.1	2.5	2.8	2.8	1.4	2.3	.22	.11	11	.11	187	12
29	1.1	2.4	3.0	2.8	1.4	2.8	.07	.13	7.4	.11	323	9.7
30	1.1	2.4	3.3	2.8	---	2.2	.07	1.7	5.9	.11	225	8.4
31	1.3	---	3.3	2.8	---	1.7	---	1.6	---	e.11	399	---
TOTAL	79.9	194.5	97.3	98.8	60.3	48.7	66.07	718.42	272.79	52.51	3377.44	3251.9
MEAN	2.58	6.48	3.14	3.19	2.08	1.57	2.20	23.2	9.09	1.69	109	108
MAX	7.0	95	4.1	4.1	3.2	2.8	7.8	475	36	13	797	613
MIN	1.1	2.0	2.8	2.4	1.4	1.1	.07	.07	.89	.03	.03	8.4
AC-FT	158	386	193	196	120	97	131	1420	541	104	6700	6450

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1996, BY WATER YEAR (WY)

MEAN	134	20.3	20.0	19.1	29.6	29.6	53.9	167	162	55.4	92.0	165
MAX	1834	67.5	120	90.7	256	280	599	681	1242	313	1122	1853
(WY)	1987	1973	1992	1987	1992	1973	1981	1994	1982	1988	1971	1980
MIN	.000	.000	.30	1.17	1.02	.36	2.19	1.91	.23	.000	.010	.000
(WY)	1969	1971	1971	1971	1971	1971	1980	1984	1984	1970	1984	1968

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1967 - 1996	
ANNUAL TOTAL	10005.91		8318.63			
ANNUAL MEAN	27.4		22.7		79.5	
HIGHEST ANNUAL MEAN					298	1987
LOWEST ANNUAL MEAN					11.7	1970
HIGHEST DAILY MEAN	892	May 31	797	Aug 25	15900	Sep 30 1980
LOWEST DAILY MEAN	.28	Sep 1	.03	Jul 19	.00	Aug 2 1968
ANNUAL SEVEN-DAY MINIMUM	.29	Aug 19	.05	Jul 17	.00	Aug 2 1968
INSTANTANEOUS PEAK FLOW			1160	Aug 25	18900	Sep 9 1980
INSTANTANEOUS PEAK STAGE			6.08	Aug 25	22.73	Sep 9 1980
ANNUAL RUNOFF (AC-FT)	19850		16500		57580	
10 PERCENT EXCEEDS	36		24		102	
50 PERCENT EXCEEDS	3.7		2.7		9.7	
90 PERCENT EXCEEDS	1.1		.14		.30	

e Estimated

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1967 to current year. Chemical and biochemical analyses: November 1977 to August 1994. Pesticide analyses: October 1969 to August 1981. Sediment analyses: August 1977 to August 1994.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1967 to current year.
WATER TEMPERATURE: December 1967 to current year.

INSTRUMENTATION.--Since December 1967, specific conductance was recorded continuously. Since June 1981, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--Estimated mean specific conductance and missing maximum and minimum temperature values were due to 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 regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 19,900 microsiemens Sept. 10, 1988; minimum, 154 microsiemens Sept. 21, 1990.
WATER TEMPERATURE: Maximum, 35.5°C Aug. 2, 7, 1985; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 10,200 microsiemens May 6; minimum, 416 microsiemens Sept. 6
WATER TEMPERATURE: Maximum, 32.0°C June 18; minimum, 0.5°C Feb. 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
DEC											
01...	1428	2.8	4160	8.0	14.0	10.2	109	1400	1200	380	99
FEB											
08...	1040	3.4	7460	8.0	12.0	9.8	101	2000	1800	530	170
APR											
04...	1242	1.1	8880	7.8	16.0	8.4	95	2500	2400	630	230
MAY											
16...	1220	0.88	3010	8.2	24.0	6.7	87	730	660	190	62
JUL											
23...	1100	0.07	3940	8.0	31.0	7.9	116	1400	1300	380	100
AUG											
12...	1735	197	1080	7.6	25.0	--	--	230	120	65	16
27...	1218	136	4880	7.7	25.0	6.7	89	480	400	120	43

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)
DEC											
01...	460	5	7.2	110	1100	780	0.40	7.6	2900	--	--
FEB											
08...	1100	11	9.2	180	1800	1700	0.50	3.0	5420	--	--
APR											
04...	1300	11	10	130	2200	2100	0.60	3.8	6550	0.060	--
MAY											
16...	360	6	9.8	68	630	590	0.70	3.3	1890	0.090	--
JUL											
23...	390	5	9.3	62	1200	650	0.50	13	2780	0.060	0.060
AUG											
12...	110	3	5.5	110	98	210	0.60	8.3	577	--	--
27...	870	17	9.6	81	380	1400	0.30	6.6	2880	0.200	0.200

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)
DEC											
01...	<0.010	--	<0.050	0.020	0.18	0.20	<0.010	<0.010	--	<1	<100
FEB											
08...	<0.010	--	<0.050	0.100	0.10	0.20	<0.010	<0.010	--	<1	100
APR											
04...	<0.010	0.060	0.060	0.170	0.13	0.30	0.010	0.020	0.06	<1	100
MAY											
16...	<0.010	0.090	0.090	0.040	1.1	1.1	<0.010	<0.010	--	2	210
JUL											
23...	0.010	0.070	0.070	0.130	0.27	0.40	<0.010	<0.010	--	3	350
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
27...	0.030	0.230	0.230	0.080	0.42	0.50	0.020	0.020	0.06	3	230

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
DEC										
01...	<1.0	<1.0	2.0	<10	2.0	30	1.1	2	<1.0	<10
FEB										
08...	<1.0	<1.0	<1.0	<10	<4.0	60	<0.1	3	<1.0	<10
APR										
04...	<1.0	2.4	<1.0	<10	<1.0	80	0.2	3	<1.0	<10
MAY										
16...	<1.0	<1.0	<1.0	<9.0	<1.0	23	<0.1	1	<1.0	<9.0
JUL										
23...	<1.0	<1.0	<1.0	<12	<1.0	300	<0.1	<1	<1.0	<12
AUG										
12...	--	--	--	--	--	--	--	--	--	--
27...	<1.0	<1.0	1.0	10	<1.0	<3.0	<0.1	<1	<1.0	<9.0

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.	1995	79.9	3660	2340	505	780	168	740	159	860
NOV.	1995	194.5	3570	2270	1190	750	395	710	375	840
DEC.	1995	97.3	6300	4190	1100	1400	370	1300	341	1400
JAN.	1996	98.8	7840	5310	1420	1800	480	1600	435	1800
FEB.	1996	60.3	8040	5470	890	1900	302	1700	273	1800
MAR.	1996	48.7	8810	6060	796	2100	271	1900	243	2000
APR.	1996	66.07	8090	5500	982	1900	333	1700	301	1800
MAY	1996	718.42	2930	1860	3610	620	1190	590	1140	690
JUNE	1996	272.79	3050	1930	1420	640	469	610	447	720
JULY	1996	52.51	4530	2920	414	970	138	910	130	1100
AUG.	1996	3377.44	1420	876	7980	290	2610	280	2540	340
SEPT	1996	3251.9	1540	947	8310	310	2720	300	2650	370
TOTAL		8318.63	**	**	28600	**	9450	**	9030	**
WTD.AVG.		23	2020	1270	**	420	**	400	**	480

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	3050	2880	2970	5420	2310	4010	4470	4350	4410	7880	7700	7750
2	2880	2430	2740	2310	1900	2020	4660	4400	4590	8030	7720	7900
3	2570	2470	2540	2470	2150	2330	4900	4630	4800	8230	8030	8110
4	2650	2480	2560	2760	2470	2610	5130	4870	5010	8170	7950	8070
5	2750	2530	2660	2840	2720	2780	5240	5060	5160	8100	7950	8020
6	2530	2400	2480	2840	2720	2780	5360	5170	5280	8280	8030	8150
7	2820	2400	2680	2920	2800	2850	5340	5240	5290	8450	8110	8300
8	2760	2580	2680	3090	2880	3010	5330	5250	5290	8290	8110	8210
9	3320	2750	2920	3210	3090	3140	5440	5250	5350	8230	7990	8130
10	3790	3320	3670	3330	3170	3240	5560	5410	5490	8210	7930	8050
11	3940	3770	3860	3860	3330	3470	5670	5560	5620	8050	7870	7970
12	4730	3920	4280	3620	3500	3560	5820	5630	5730	8070	7790	7930
13	5010	4250	4680	3620	3500	3570	6080	5750	5940	7960	7680	7830
14	5100	4450	4670	3790	3580	3670	6270	6080	6190	7830	7600	7720
15	4660	4500	4600	3870	3660	3800	6430	6150	6340	7760	7380	7630
16	4740	4580	4680	3910	3750	3850	6630	6400	6510	7740	7530	7630
17	4860	4740	4800	3950	3830	3910	6580	6470	6530	7720	7530	7620
18	4910	4820	4860	4040	3910	3980	6710	6500	6620	7760	7440	7640
19	5030	4870	4950	4040	3880	3950	7030	6690	6830	7970	7600	7850
20	5470	4990	5350	4080	3880	3980	6980	6690	6830	7940	7650	7810
21	5600	5390	5500	4040	3920	3960	7060	6860	6980	7920	7660	7750
22	5680	5560	5590	4040	3880	3970	7270	6580	6750	7740	7400	7630
23	5970	5600	5760	4090	3920	4000	7790	7270	7570	7510	7400	7440
24	6130	5930	6050	4210	4010	4120	7920	7660	7820	7790	7430	7580
25	6130	5970	6080	4210	4010	4110	7930	7680	7810	7760	7470	7610
26	6050	5930	5990	4130	4010	4080	7890	7680	7790	7640	7370	7540
27	6140	5970	6060	4180	4050	4120	7960	7720	7830	7710	7490	7610
28	6220	6100	6140	4340	4140	4290	8040	7790	7940	7780	7430	7660
29	6300	6100	6190	4510	4300	4430	8120	7900	8020	7710	7390	7590
30	6190	6100	6150	4470	4300	4370	7920	7770	7860	7680	7400	7560
31	6190	5420	6000	---	---	---	7900	7750	7830	7910	7580	7830
MONTH	6300	2400	4520	5420	1900	3600	8120	4350	6390	8450	7370	7810

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7980	7570	7830	8530	8360	8480	9090	8910	8980	8630	8440	8510
2	7850	7620	7760	8570	8400	8490	8990	8880	8940	8680	8460	8570
3	8390	7700	8010	8610	8480	8550	9050	8760	8890	8840	8590	8660
4	8630	7990	8250	8600	8560	8570	8930	8690	8830	8880	8530	8660
5	8230	7860	8090	8640	8470	8560	8690	7430	8010	8880	8470	8710
6	8200	7890	8040	8680	8550	8610	7820	7240	7400	10200	7430	8680
7	7950	7540	7760	8760	8640	8690	7730	7340	7590	9720	421	3580
8	7660	7530	7600	8760	8590	8700	8040	7550	7860	1690	421	991
9	7830	7570	7730	8720	8500	8630	7950	7660	7810	2230	1690	2020
10	7910	7570	7820	8670	8500	8610	8270	7760	7920	2350	2230	2320
11	8080	7860	7970	8750	8630	8690	8380	8170	8300	2480	2350	2380
12	8120	7900	7990	8750	8490	8690	8400	8190	8330	2600	2370	2530
13	8030	7810	7920	8750	8580	8680	8510	8000	8270	2840	2600	2720
14	8110	7900	7970	8870	8700	8780	8630	8220	8410	3080	2840	2930
15	8190	7980	8080	8950	8700	8840	8550	8240	8420	3320	2970	3120
16	8230	7970	8130	8910	8610	8770	8670	8260	8490	3770	3220	3480
17	8230	8010	8110	8860	8690	8820	8700	8170	8460	4040	3740	3860
18	8230	8100	8160	8940	8810	8860	8720	8390	8570	4200	3900	4040
19	8220	7920	8100	8980	8890	8930	8740	8520	8610	4280	4070	4170
20	8180	8050	8110	8980	8810	8900	8760	8450	8610	4360	4150	4300
21	8220	8090	8140	8980	8810	8890	8890	8360	8630	4530	4320	4480
22	8340	8130	8230	8970	8850	8910	8790	8180	8460	4680	4380	4590
23	8380	8210	8310	9050	8930	9000	9030	8420	8740	4840	4650	4770
24	8420	8250	8340	9090	9010	9040	8740	8330	8530	5000	4800	4890
25	8370	8290	8320	9180	8960	9090	8580	8450	8510	5070	4880	4980
26	8370	8240	8320	9130	9090	9120	8590	8290	8470	5060	4930	5020
27	8490	8280	8390	9130	8920	9020	8540	8400	8480	5210	5000	5090
28	8580	8490	8530	8960	8660	8830	8560	8440	8480	5420	5090	5270
29	8530	8400	8500	9380	8910	9170	8490	8360	8450	5520	5310	5410
30	---	---	---	9360	9020	9170	8520	8390	8450	5620	5300	5440
31	---	---	---	9120	8910	9000	---	---	---	5510	4450	4760
MONTH	8630	7530	8090	9380	8360	8810	9090	7240	8400	10200	421	4800

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4870	4550	4730	3890	3480	3760	5900	5800	5900	1560	1140	1310
2	5070	3590	4690	4090	3680	3970	6000	5900	5930	1350	1140	1230
3	4120	2950	3940	4290	3770	4160	6000	5900	5980	1770	1350	1600
4	4010	2430	3080	4380	4180	4280	6100	5900	6010	2080	1770	1960
5	4210	1900	3280	4580	4280	4480	6000	5900	5940	2910	624	2180
6	3680	3050	3140	4680	4480	4620	6100	5900	5970	2600	416	1340
7	4100	3150	3880	4780	4570	4730	6000	5900	5970	3120	1560	2300
8	5560	4090	5250	4980	4670	4870	6000	5900	5960	2080	1560	2000
9	6390	5450	6110	5070	4870	5000	5900	5600	5790	3330	1870	2350
10	6290	5340	5600	5160	4970	5070	5700	5400	5480	3640	3230	3490
11	5440	4700	5100	5260	5160	5230	5400	3500	4490	3330	2920	3050
12	4910	3860	4240	5360	5160	5270	5200	1000	2300	3020	2920	2940
13	4180	3650	3940	5360	5250	5300	1410	1100	1300	3020	2920	3000
14	3960	3650	3900	5450	504	4830	1530	1410	1450	3130	1670	2890
15	4060	3640	3850	5040	4840	4970	1740	1420	1610	1980	626	1320
16	4060	3740	3970	4940	4630	4750	1950	1630	1830	2400	730	1510
17	4150	3740	4020	4830	4720	4780	2160	1950	2020	1880	1360	1540
18	4250	2800	3410	5020	4820	4940	2160	1540	1700	1980	1770	1890
19	3520	2690	3340	5320	5020	5120	1650	1540	1560	1980	1570	1920
20	2690	1140	1400	5320	5210	5250	1750	1130	1530	2610	522	1230
21	1650	1240	1470	5410	5210	5380	1760	1030	1480	1150	731	888
22	2060	1550	1840	5610	5410	5510	1960	1760	1910	5330	941	2240
23	2370	1960	2160	5800	5500	5680	2280	1030	1960	1150	941	1040
24	2680	2270	2490	5900	5700	5830	2480	725	1110	1460	1150	1250
25	2980	2570	2780	5900	5800	5810	---	---	e500	1780	1360	1560
26	3190	2670	2950	6000	5800	5900	---	---	e2000	2090	1670	1940
27	3290	2770	3080	5900	5800	5860	---	---	2960	2410	2090	2280
28	3490	2980	3310	5800	5700	5790	3220	1450	2050	2620	2410	2500
29	3590	3180	3450	5900	5600	5810	2180	727	1240	2830	2620	2720
30	3790	3270	3580	5900	5700	5830	3630	727	1410	3040	2830	2950
31	---	---	---	5900	5800	5860	3950	935	1800	---	---	---
MONTH	6390	1140	3600	6000	504	5120	6100	725	3130	5330	416	2010
YEAR	10200	416	5520									

e Estimated

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	24.5	21.5	22.5	19.0	14.5	17.0	12.5	11.0	12.0	9.5	5.5	8.0
2	23.5	20.5	22.0	17.0	13.5	15.0	14.0	12.0	13.0	5.5	3.5	4.5
3	20.5	19.0	20.0	13.5	10.0	11.5	14.0	11.5	13.0	6.5	2.5	4.5
4	22.5	19.5	20.5	12.0	9.5	10.5	13.0	10.0	11.5	7.5	4.5	6.0
5	22.5	18.5	20.5	11.0	8.0	9.5	14.0	11.5	12.5	7.5	5.0	6.0
6	20.5	16.5	18.0	16.0	9.0	13.0	12.5	10.0	11.0	5.0	3.0	4.0
7	21.0	16.5	18.5	17.0	13.5	15.5	12.0	10.0	11.0	4.0	1.5	3.0
8	21.0	17.5	18.5	16.0	12.5	14.5	13.0	9.5	11.0	7.0	2.5	5.0
9	22.0	18.5	20.0	17.5	13.0	15.5	10.5	6.0	7.5	8.0	4.5	6.0
10	21.5	18.0	19.5	18.0	15.5	17.0	6.5	3.5	5.5	9.0	5.0	7.0
11	20.5	18.5	19.5	16.5	11.5	13.0	9.5	5.0	7.0	10.0	7.0	8.5
12	22.5	19.5	21.0	13.5	10.5	11.5	11.0	8.0	9.0	9.0	6.0	7.5
13	22.5	19.0	21.0	14.5	11.5	13.5	12.0	10.0	11.0	10.5	6.5	8.5
14	20.5	17.5	18.5	14.5	12.0	13.5	13.0	11.0	11.5	10.5	8.0	9.5
15	19.0	16.0	17.5	14.5	11.5	13.0	14.0	12.0	13.0	10.5	8.0	9.0
16	20.5	17.0	18.5	15.0	12.5	13.5	13.0	10.0	11.0	11.5	8.5	10.0
17	21.0	17.0	19.0	15.0	14.5	15.0	12.5	11.0	12.0	12.0	9.5	10.5
18	22.0	18.5	20.5	15.0	13.5	14.5	12.0	7.5	10.0	11.5	4.5	6.5
19	22.5	19.0	21.0	16.5	13.5	15.0	8.5	5.5	7.0	5.5	2.0	4.0
20	19.5	16.0	17.5	16.5	13.0	14.5	8.0	5.0	6.5	7.5	3.5	5.5
21	19.5	15.0	17.0	16.0	14.0	15.0	8.0	5.5	6.5	8.5	4.0	6.5
22	20.5	15.5	17.5	17.5	14.0	16.0	7.5	6.0	7.0	13.5	7.5	10.0
23	19.5	16.5	18.0	17.0	13.0	14.5	6.0	4.5	5.5	13.0	10.0	11.5
24	17.5	14.0	16.0	13.5	10.0	12.0	6.0	3.5	5.0	10.0	6.0	8.0
25	18.0	15.0	16.5	14.5	10.5	12.5	6.5	3.0	5.0	10.5	6.0	8.5
26	21.5	17.5	19.5	14.5	12.5	13.0	6.5	4.5	5.5	9.5	7.0	8.5
27	20.5	17.5	19.0	14.5	12.0	13.5	7.0	4.0	5.5	8.0	4.5	7.0
28	19.0	16.0	17.5	12.5	8.0	9.5	7.5	4.0	6.0	9.5	4.5	7.0
29	19.5	15.0	17.0	9.5	7.0	8.0	7.5	4.5	6.0	9.0	6.5	8.0
30	19.0	18.0	18.5	12.5	7.5	10.5	9.0	6.5	7.5	10.0	8.0	9.0
31	20.0	17.5	18.5	---	---	---	10.0	6.0	8.0	8.0	3.5	4.5
MONTH	24.5	14.0	19.0	19.0	7.0	13.5	14.0	3.0	9.0	13.5	1.5	7.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4.5	2.0	3.5	10.5	5.0	7.5	17.5	13.0	15.5	18.5	15.5	17.0
2	4.0	2.0	2.5	12.0	7.0	9.5	17.5	13.0	15.5	21.5	17.0	19.5
3	3.0	1.5	2.0	14.5	9.0	12.0	17.0	13.5	15.5	25.5	20.0	22.5
4	4.0	.5	2.5	17.0	12.5	15.0	17.5	14.0	15.5	26.0	22.5	24.0
5	6.0	4.0	5.0	17.5	15.0	16.0	14.0	6.5	9.5	27.5	22.0	25.0
6	10.0	4.5	7.0	17.0	11.0	15.0	10.0	6.5	8.0	29.0	22.5	25.5
7	14.0	8.5	11.0	11.0	5.0	8.0	12.0	9.5	11.0	26.0	20.0	22.5
8	14.5	11.5	13.0	8.5	5.5	7.5	14.0	11.5	13.5	27.0	20.5	23.0
9	14.5	11.0	12.0	9.5	5.5	7.5	17.5	14.0	16.0	28.0	22.0	24.5
10	15.5	12.5	13.5	13.0	7.5	10.0	22.0	16.5	19.0	25.5	22.5	24.0
11	14.0	9.5	11.5	14.5	9.5	12.5	23.0	16.5	19.5	25.0	19.5	21.5
12	11.0	7.0	8.5	16.5	11.5	13.5	23.0	19.5	21.0	24.0	20.0	22.0
13	11.0	8.0	9.5	19.0	13.5	15.5	22.0	17.0	19.5	27.0	20.5	24.0
14	14.5	10.0	12.0	19.0	16.0	17.5	21.0	16.0	18.0	26.0	22.5	24.0
15	14.0	11.0	12.5	17.5	14.0	16.0	16.5	13.5	15.0	25.5	20.0	23.0
16	13.0	9.0	11.0	17.0	13.5	15.0	19.0	15.0	17.0	27.5	22.5	25.0
17	11.0	8.0	10.0	18.5	14.5	16.0	20.5	16.0	17.5	27.5	23.0	25.0
18	14.5	9.0	12.0	17.0	12.5	15.0	20.5	17.5	19.0	27.5	22.5	25.0
19	14.0	11.0	12.5	15.0	11.5	13.5	23.0	18.5	21.0	26.5	22.5	24.5
20	14.0	12.5	13.5	14.0	10.5	12.5	22.5	18.0	19.5	26.0	23.0	24.5
21	16.0	13.5	14.5	16.5	11.0	13.5	22.5	17.0	20.0	25.0	24.0	24.5
22	16.0	14.0	15.0	18.5	14.5	16.5	22.5	19.5	21.0	30.0	25.0	26.5
23	17.0	13.5	15.5	21.0	16.0	18.0	21.0	17.0	19.0	28.0	23.0	25.5
24	15.0	11.5	14.0	19.5	17.0	18.5	22.5	15.0	19.5	28.0	24.0	26.0
25	17.0	14.5	15.5	17.0	10.5	13.0	21.0	16.5	18.5	25.5	23.5	24.0
26	18.5	15.0	16.5	12.5	7.5	9.5	20.0	17.5	19.0	25.0	22.0	23.5
27	17.0	14.5	15.5	7.5	6.5	7.0	25.0	18.0	21.5	25.0	21.5	22.5
28	16.0	8.0	11.0	13.5	6.0	9.0	23.5	20.5	22.0	24.0	22.5	23.0
29	8.0	6.0	7.0	17.5	12.0	14.5	20.5	14.5	17.5	26.0	24.0	24.5
30	---	---	---	18.5	14.0	16.5	19.5	14.5	17.0	26.5	23.0	25.0
31	---	---	---	16.0	12.5	14.5	---	---	---	26.5	24.0	25.5
MONTH	18.5	.5	10.5	21.0	5.0	13.0	25.0	6.5	17.5	30.0	15.5	24.0

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	26.5	25.0	25.5	---	---	29.0	---	---	27.0	26.5	24.0	25.5
2	27.0	23.0	25.5	---	---	30.0	27.5	25.5	26.5	29.0	23.5	26.5
3	25.0	22.0	22.5	---	---	29.0	28.0	26.0	27.0	31.0	25.0	28.0
4	26.0	24.0	25.0	---	---	30.0	---	---	26.0	30.5	24.5	27.5
5	31.0	24.5	27.5	---	---	30.0	28.0	26.0	27.0	27.0	22.5	24.0
6	28.5	23.5	26.0	---	---	29.5	30.0	25.5	28.0	26.0	21.5	23.0
7	28.0	24.0	25.5	---	---	30.5	---	---	26.5	28.0	23.5	26.0
8	26.0	24.0	24.5	---	---	30.5	27.5	26.5	27.0	29.0	24.5	27.0
9	27.0	24.0	25.5	---	---	30.0	27.0	26.0	26.5	29.5	23.5	26.0
10	27.0	25.0	25.5	---	---	29.5	---	---	25.0	28.0	24.0	26.0
11	27.5	25.5	26.0	---	---	30.0	---	---	25.5	26.5	22.5	24.5
12	28.0	26.0	27.0	---	---	30.5	---	---	26.5	26.5	23.0	24.5
13	27.5	26.0	27.0	---	---	31.0	31.0	25.5	27.5	---	---	22.5
14	28.5	27.5	27.5	---	---	29.0	28.5	25.5	27.0	23.5	20.5	22.0
15	29.5	27.5	28.5	---	---	29.5	28.0	25.5	26.5	---	---	21.5
16	29.5	27.5	28.5	---	---	29.5	27.5	26.0	27.0	---	---	24.0
17	29.5	26.5	28.0	---	---	30.0	27.0	24.5	26.0	26.5	21.5	23.5
18	32.0	26.5	28.5	---	---	30.5	29.0	25.0	26.5	28.5	23.0	25.0
19	31.5	26.5	29.0	---	---	30.5	28.0	24.5	26.0	27.0	22.5	24.5
20	31.5	27.5	29.5	---	---	30.5	31.0	24.5	27.0	26.0	21.0	23.0
21	31.5	25.5	28.0	---	---	30.5	30.5	26.0	28.0	26.0	22.0	23.5
22	29.0	26.0	27.5	---	---	32.0	29.0	25.5	26.5	26.5	21.5	24.0
23	29.0	27.0	28.0	---	---	28.0	27.0	25.0	25.5	---	---	25.0
24	30.5	28.0	29.0	28.5	25.5	26.5	25.0	24.0	24.5	26.0	22.0	24.0
25	30.0	27.5	29.0	26.5	25.0	25.5	26.0	24.0	25.0	26.5	21.5	24.0
26	30.0	26.0	28.0	28.5	25.5	26.0	27.5	24.0	26.0	---	---	23.5
27	30.5	27.0	29.0	28.5	26.0	27.0	26.0	24.5	25.5	22.5	17.5	20.0
28	29.5	26.5	28.0	27.5	26.0	26.5	26.5	24.5	25.0	19.5	14.5	16.5
29	30.0	27.5	28.5	28.0	25.5	27.0	25.5	24.0	25.0	19.5	15.5	17.0
30	---	---	29.0	27.5	25.5	26.0	26.5	24.5	25.0	22.0	16.5	19.0
31	---	---	---	27.5	26.5	27.0	27.0	23.0	25.5	---	---	---
MONTH	32.0	22.0	27.0	28.5	25.0	29.0	31.0	23.0	26.0	31.0	14.5	23.5
YEAR	32.0	.5	18.5									

08123950 E.V. SPENCE RESERVOIR NEAR ROBERT LEE, TX

LOCATION.--Lat 31°52'46", long 100°31'01", Coke County, Hydrologic Unit 12080008, in outlet works of Robert Lee Dam on the Colorado River, 2.2 mi west of Robert Lee, and at mile 716.0.

DRAINAGE AREA.--15,278 mi², approximately, of which 10,260 mi² probably is noncontributing.

PERIOD OF RECORD.--December 1968 to current year.
Water-Quality records.--Chemical analyses: November 1969 to August 1988. Biochemical analyses: January 1978 to August 1988.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to June 24, 1969, non-recording gage at same site and datum.

REMARKS.--The reservoir is formed by a rolled earthfill dam 21,500 ft long. Closure was made Dec. 30, 1968, and dam was completed in June 1969. The dam is the property of the Colorado River Municipal Water District, which has a permit to divert 50,000 acre-ft annually for municipal, mining, and industrial uses. Inflow into the reservoir is partially regulated by Lake J.B. Thomas (capacity, 283,600 acre-ft), Lake Colorado City (station 08123000), and Champion Creek Reservoir (capacity, 42,500 acre-ft). There are two spillways: The controlled service spillway is a morning-glory type that is partially controlled by 12 lift gates, 14.48 by 22.0 ft, and discharges through a 28.0-foot-diameter concrete conduit. The uncontrolled spillway is a 3,200-foot-wide cut through natural ground near the right end of dam. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,928.0	-
Crest of spillway	1,908.0	653,400
Top of gates	1,900.0	519,300
Top of conservation pool	1,898.0	488,800
Crest of spillway	1,878.0	262,900
Lowest gated outlet (invert)	1,815.85	4,000

COOPERATION.--Capacity table (dated March 1972) was furnished by the Colorado River Municipal Water District. Records of diversions can be obtained from the city of San Angelo and from the Colorado River Municipal Water District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 355,300 acre-ft June 16, 1987 (elevation, 1,887.03 ft); minimum since first appreciable storage in June 1969 (not from recorder), about 330 acre-ft May 29, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 170,100 acre-ft Oct. 1 at 0000 hours (elevation, 1,866.24 ft); minimum observed, 101,500 acre-ft Aug. 8 (elevation, 1,854.24 ft).

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

1,806.0	225	1,846.0	67,900	1,873.0	219,900
1,816.0	4,430	1,856.0	109,900	1,878.0	262,900
1,826.0	19,050	1,862.0	142,400	1,883.0	312,000
1,836.0	38,760	1,868.0	182,400	1,888.0	366,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170100	165400	162700	161000	158800	157100	154500	141900	114500	105900	102500	109500
2	170000	165100	162700	160700	158600	156900	154300	140900	114900	105800	102400	109700
3	169900	165000	162600	160600	158600	156900	154300	140100	115100	105700	102200	109600
4	169900	165000	162400	160700	158600	156900	154400	139300	114800	105700	102100	109500
5	169700	165000	162400	160500	158700	156900	155400	138200	113800	105500	101900	109500
6	169400	165000	162200	160200	158700	156700	155500	137400	112800	105300	101900	109800
7	169100	164800	162200	160200	158800	156400	155600	136900	112000	105200	101700	e110100
8	169000	164500	162000	160200	158600	156200	155600	136600	111100	105000	101500	e110500
9	168900	164400	161900	160200	158600	156200	155600	136100	110100	104900	101800	110600
10	168900	164300	161800	160200	158600	156100	155600	135100	109300	104700	102000	110600
11	168900	164200	161800	160200	158600	156100	155600	134200	108700	104600	102000	110600
12	168700	164100	161800	160200	158500	156000	155500	133400	108100	104600	102200	110600
13	168400	163900	161800	160100	158500	156000	155500	132600	107700	e104600	102300	111800
14	168400	163800	161800	160100	158400	155900	155400	131500	107600	e104600	102300	e113600
15	168300	163600	161600	160100	158300	155800	155400	130300	107700	104500	102300	114800
16	167800	163600	161500	160100	158200	155700	155400	129700	107800	104500	102200	115400
17	167700	163800	161500	160000	158200	155600	155000	128600	107900	104500	102100	115700
18	167600	163800	161500	159900	158200	155500	154100	127400	107900	104400	102100	115800
19	167300	163700	161400	159600	158100	155400	152800	126000	107700	104100	102100	115900
20	167300	163700	161400	159600	158000	155200	151800	125000	107500	103800	102000	116300
21	166900	163600	161400	159600	158000	155000	e151200	124400	107400	103600	101900	e116700
22	166600	163500	161400	159700	157900	155000	150700	123600	107200	103500	101900	e117100
23	166600	163500	161200	159700	157800	154900	149700	122500	107000	103400	102500	117300
24	166200	163400	161200	159700	157600	154800	148300	121600	106800	103200	103600	117500
25	166100	163300	161100	159500	157700	154800	147300	120500	106600	103100	105000	117400
26	166200	163200	161000	159300	157600	154600	146600	119300	106600	103100	106000	117400
27	166000	163000	161000	159100	157600	154700	146000	118100	106600	103000	106600	117400
28	165800	162900	160900	159100	157300	154700	e145700	117200	106500	103000	107100	e117300
29	165500	162900	160700	159100	157100	154700	144800	116700	106200	102900	107900	e117200
30	165500	162800	160900	159100	---	154700	143600	116100	e106100	102800	108600	117200
31	165600	---	161000	158900	---	154700	---	115400	---	102600	e109100	---
MAX	170100	165400	162700	161000	158800	157100	155600	141900	115100	105900	109100	117500
MIN	165500	162800	160700	158900	157100	154600	143600	115400	106100	102600	101500	109500
(+)	1865.60	1865.20	1864.94	1864.61	1864.34	1863.96	1862.20	1857.09	1855.24	1854.49	1855.84	1857.46
(@)	-4500	-2800	-1800	-2100	-1800	-2400	-11100	-28200	-9300	-3500	+6500	+8100

CAL YR 1995 MAX 178100 MIN 160700 (@) -12900
WTR YR 1996 MAX 170100 MIN 101500 (@) -52900

e Estimated
(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08124000 COLORADO RIVER AT ROBERT LEE, TX

LOCATION.--Lat 31°53'07", long 100°28'49", Coke County, Hydrologic Unit 12080008, on left bank 190 ft upstream from bridge on State Highway 208 in Robert Lee, 0.4 mi upstream from Mountain Creek, 2.7 mi downstream from Messbox Creek, 3.6 mi downstream from Robert Lee Dam, and at mile 712.4.

DRAINAGE AREA.--15,307 mi², of which 10,260 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1923 to December 1927, April 1939 to May 1956, and October 1968 to current year. Prior to December 1927, published as "near Robert Lee".
Water-quality records.--Chemical analyses: October 1947 to September 1957.

REVISED RECORDS.--WSP 1723: 1925(M). WDR TX 81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,771.70 ft above sea level. Prior to Dec. 31, 1927, nonrecording gage at site 9 mi downstream at different datum. Apr. 18 to Sept. 26, 1939, nonrecording gage, and Sept. 27, 1939, to May 9, 1956, water-stage recorder at site 200 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Beginning April 1949, flow was affected by Lake Colorado City (see station 08123000) and since July 1952 by Lake J. B. Thomas (capacity 203,600 acre-ft). Since December 1968, flow completely regulated by E. V. Spence Reservoir (station 08123950) 3.6 mi upstream. There are many diversions above station for municipal, mining, agricultural, and industrial uses. Several observations of water temperature were made during the year. Radio telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--19 years (water years 1924-27, 1940-55) prior to completion of Robert Lee Dam, 207 ft³/s (150,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1924-27, 1940-55).--Maximum discharge, 32,500 ft³/s Sept. 6, 1926 (gage height, 20.20 ft, site and datum then in use), from rating curve extended above 15,000 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 26.7 ft Oct. 13, 1957, from floodmarks. Flood in April 1922 reached a stage of 25.5 ft, present datum, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	11	3.2	3.8	4.2	3.1	3.0	450	432	8.3	11	13
2	8.8	5.6	3.2	3.9	4.4	3.2	2.8	445	440	8.4	12	14
3	9.1	6.1	3.2	3.9	4.0	3.2	2.8	436	431	8.2	12	14
4	8.8	6.3	3.2	3.9	3.7	3.5	3.0	434	408	8.2	12	14
5	8.6	6.2	3.3	4.2	3.7	3.5	11	432	405	8.0	13	14
6	8.9	5.7	3.3	4.2	3.9	3.6	3.8	430	419	8.2	13	14
7	9.0	5.9	3.4	4.1	4.0	3.8	3.0	426	431	8.2	13	14
8	9.0	5.9	3.3	4.3	3.8	3.8	2.9	426	445	8.7	12	16
9	9.1	5.8	3.3	4.5	3.6	3.9	2.8	431	458	8.5	10	45
10	9.1	5.7	3.3	4.6	3.4	3.9	2.8	432	466	8.0	11	e25
11	8.7	5.8	3.3	4.6	3.4	4.0	2.8	437	475	8.1	10	e17
12	8.7	5.8	3.3	4.7	3.5	4.1	2.8	436	383	8.4	10	e15
13	8.8	5.9	3.2	4.6	3.6	3.9	2.7	438	16	8.0	10	e30
14	8.8	6.0	3.6	4.5	3.4	3.6	2.7	442	12	9.6	10	e20
15	9.2	6.1	3.8	4.5	3.0	3.6	2.7	438	12	15	11	e200
16	9.2	6.2	3.8	4.4	3.2	3.6	2.7	435	11	12	11	e50
17	9.3	7.0	3.8	4.4	3.3	3.5	3.4	433	11	12	11	e30
18	9.3	4.0	3.7	4.1	3.3	3.7	153	436	12	11	11	e20
19	9.2	3.0	3.7	3.7	3.3	3.3	502	440	10	11	11	e17
20	8.8	3.0	3.6	3.8	3.2	3.1	494	444	9.8	11	11	e15
21	9.0	3.6	3.1	3.9	3.2	3.1	485	445	9.5	11	13	e15
22	9.1	3.2	2.9	3.9	3.1	3.0	491	448	9.3	11	12	e15
23	9.3	3.1	2.9	3.8	3.2	2.9	482	450	8.8	11	12	e15
24	9.5	3.2	2.9	3.9	3.2	2.9	471	453	9.2	10	15	e15
25	9.2	3.3	3.2	4.1	3.3	2.8	467	454	9.0	11	13	e15
26	8.9	3.4	3.3	4.0	3.1	2.9	465	451	8.9	10	13	e17
27	8.8	3.8	3.3	4.1	2.9	3.4	464	444	8.4	10	13	e16
28	9.1	3.7	3.4	4.0	3.0	3.2	458	437	8.3	14	13	e15
29	9.1	3.4	3.3	4.1	3.1	3.0	450	440	8.2	14	13	e15
30	9.2	3.2	3.2	4.1	---	3.0	457	436	8.1	12	14	e15
31	12	---	3.2	4.1	---	2.8	---	428	---	11	13	---
TOTAL	282.0	150.9	103.2	128.7	100.0	104.9	5896.7	13607	5374.5	313.8	369	750
MEAN	9.10	5.03	3.33	4.15	3.45	3.38	197	439	179	10.1	11.9	25.0
MAX	12	11	3.8	4.7	4.4	4.1	502	454	475	15	15	200
MIN	8.4	3.0	2.9	3.7	2.9	2.8	2.7	426	8.1	8.0	10	13
AC-FT	559	299	205	255	198	208	11700	26990	10660	622	732	1490

08124000 COLORADO RIVER AT ROBERT LEE, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1996#, BY WATER YEAR (WY)

MEAN	24.0	9.67	1.65	1.35	1.52	1.62	9.62	21.7	42.0	41.1	40.8	35.3
MAX	578	219	9.85	9.14	9.34	9.73	197	439	473	495	512	438
(WY)	1987	1987	1990	1991	1990	1990	1996	1996	1989	1988	1988	1986
MIN	.005	.008	.12	.049	.046	.015	.020	.011	.000	.000	.011	.034
(WY)	1969	1979	1974	1980	1969	1980	1972	1971	1980	1970	1985	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1969 - 1996#	
ANNUAL TOTAL	2013.78		27180.7			
ANNUAL MEAN	5.52		74.3		19.3	
HIGHEST ANNUAL MEAN					182	1987
LOWEST ANNUAL MEAN					1.04	1969
HIGHEST DAILY MEAN	19	Aug 1	502	Apr 19	5600	Sep 9 1980
LOWEST DAILY MEAN	.42	Mar 10	2.7	Apr 13	.00	Oct 1 1968
ANNUAL SEVEN-DAY MINIMUM	.54	Mar 10	2.7	Apr 10	.00	Oct 14 1968
INSTANTANEOUS PEAK FLOW			648	Sep 15	24500	Sep 9 1980
INSTANTANEOUS PEAK STAGE			a6.00	Sep 15	20.63	Sep 9 1980
ANNUAL RUNOFF (AC-FT)	3990		53910		13960	
10 PERCENT EXCEEDS	9.2		436		10	
50 PERCENT EXCEEDS	5.7		8.4		.56	
90 PERCENT EXCEEDS	.96		3.1		.02	

e Estimated
a From floodmark.
Period of regulated streamflow.

08126380 COLORADO RIVER NEAR BALLINGER, TX

LOCATION.--Lat 31°42'55", long 100°01'34", Runnels County, Hydrologic Unit 12090101, at left downstream end of bridge on Farm Road 2111, 0.4 mi upstream from Rocky Creek, 5.0 mi northwest of Ballinger, and at mile 665.8.

DRAINAGE AREA.--16,358 mi², approximately, of which 10,260 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1907 to September 1979 (published as "at Ballinger", station 08126500), October 1979 to current year. Monthly discharge only for some periods published in WSP 1312. Gage-height records collected in this vicinity from 1903-29 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1118: Drainage area. WSP 1512: 1916-17, 1919-20, 1921(M), 1922-25, 1928(M), 1930(M). WSP 1712: 1935, 1954-55(M). WDR TX-78-3: 1975-77.

GAGE.--Water-stage recorder. Datum of gage is 1,606.51 ft above sea level. Prior to Nov. 29, 1930, nonrecording gages at several sites and at various datums near site 5.4 mi downstream. Nov. 29, 1930, to May 1, 1975, water-stage recorder at site 6.2 mi downstream and May 1, 1975, to Sept. 30, 1979, water-stage recorder at site 5.4 mi downstream, both at datum 12.77 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Many diversions upstream from station for irrigation, municipal supplies, and for oil field operations. Flow is also affected by E. V. Spence (station 08123950) and Oak Creek Reservoirs (capacity, 39,360 acre-ft), and at times by discharge from the floodwater-retarding structures in the Kickapoo and Valley Creeks drainage basins. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--61 years (water years 1908-68) prior to completion of Robert Lee Dam, 336 ft³/s (243,400 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1908-68).--Maximum discharge, 75,400 ft³/s Sept. 18, 1936 (gage height, 28.6 ft, at former site and datum); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 36 ft sometime in 1884, at former site and datum, from information by local residents. Flood of Aug. 6, 1906, reached a stage of about 32.0 ft, at former site and datum, from floodmarks (backwater from Elm Creek).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	15	15	17	9.2	9.2	3.7	425	407	7.8	4.7	38
2	25	15	15	16	9.2	8.8	3.2	426	409	5.0	5.1	21
3	28	18	15	15	9.2	7.7	2.0	419	435	3.4	4.4	17
4	27	22	15	14	9.2	7.5	2.1	413	447	3.6	3.9	18
5	26	23	15	14	9.2	7.2	21	410	440	4.6	3.5	39
6	22	20	15	14	9.2	7.0	42	422	383	4.2	4.1	174
7	21	19	15	14	9.2	7.5	35	409	397	3.6	3.6	131
8	19	19	14	14	9.2	7.5	30	409	524	3.2	3.5	109
9	18	18	15	14	9.4	7.5	27	410	420	2.5	3.3	92
10	18	18	13	14	11	7.3	24	419	417	1.7	9.3	77
11	17	19	12	14	13	6.9	20	426	411	2.3	10	65
12	17	16	11	13	11	6.7	18	439	406	1.9	13	71
13	17	16	11	13	11	6.1	17	458	394	4.2	13	58
14	16	16	11	14	11	4.8	17	455	169	9.7	6.2	95
15	16	16	12	12	11	5.1	15	439	69	37	4.6	3440
16	15	16	13	12	11	5.3	13	452	39	18	4.1	1610
17	13	18	12	13	11	5.4	11	453	30	11	4.3	980
18	13	21	13	15	11	5.9	9.6	450	22	8.0	6.5	736
19	14	20	13	13	11	5.8	8.7	451	16	6.3	7.5	582
20	12	21	13	13	11	5.2	174	423	14	4.8	7.6	478
21	11	21	13	13	10	5.9	383	417	12	5.0	6.6	e390
22	11	20	13	13	9.6	5.7	485	416	11	4.6	5.7	317
23	11	20	13	13	9.3	6.0	493	422	9.6	2.5	5.8	239
24	11	18	13	14	9.2	5.4	439	421	8.8	4.3	39	183
25	8.7	18	13	14	9.2	2.7	428	423	8.8	3.5	98	152
26	9.6	17	13	14	9.2	2.7	425	428	8.8	2.4	52	135
27	10	17	13	12	9.2	3.6	421	424	8.5	2.3	96	120
28	9.9	16	13	9.2	9.2	4.0	422	416	7.8	3.2	57	102
29	9.2	15	13	7.6	9.2	3.9	422	413	6.9	33	55	87
30	9.8	15	14	8.9	---	3.6	420	412	5.5	11	148	74
31	10	---	16	9.2	---	3.1	---	422	---	5.0	80	---
TOTAL	490.2	543	415	405.9	290.1	181.0	4831.3	13222	5936.7	219.6	765.3	10630
MEAN	15.8	18.1	13.4	13.1	10.0	5.84	161	427	198	7.08	24.7	354
MAX	28	23	16	17	13	9.2	493	458	524	37	148	3440
MIN	8.7	15	11	7.6	9.2	2.7	2.0	409	5.5	1.7	3.3	17
AC-FT	972	1080	823	805	575	359	9580	26230	11780	436	1520	21080

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1996#, BY WATER YEAR (WY)

MEAN	107	39.8	32.5	28.0	56.0	38.6	40.2	96.3	121	53.4	106	139
MAX	1194	374	259	159	756	299	161	427	739	455	639	833
(WY)	1987	1987	1992	1992	1992	1987	1996	1996	1982	1987	1987	1986
MIN	.78	.82	2.33	2.48	1.52	.67	.47	1.07	1.13	.000	.000	.23
(WY)	1980	1980	1984	1986	1984	1980	1980	1971	1974	1984	1984	1983

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1969 - 1996#	
ANNUAL TOTAL	15732.65		37930.1			
ANNUAL MEAN	43.1		104		71.4	
HIGHEST ANNUAL MEAN					405	1987
LOWEST ANNUAL MEAN					7.18	1984
HIGHEST DAILY MEAN	1400	Aug 5	3440	Sep 15	9220	Aug 28 1986
LOWEST DAILY MEAN	.54	Jul 27	1.7	Jul 10	.00	Mar 20 1971
ANNUAL SEVEN-DAY MINIMUM	.89	Jul 24	2.8	Jul 6	.00	Mar 20 1971
INSTANTANEOUS PEAK FLOW			4870	Sep 15	16600	Aug 3 1978
INSTANTANEOUS PEAK STAGE			18.04	Sep 15	27.50	Sep 21 1990
ANNUAL RUNOFF (AC-FT)	31210		75230		51720	
10 PERCENT EXCEEDS	76		421		120	
50 PERCENT EXCEEDS	13		14		12	
90 PERCENT EXCEEDS	5.4		4.5		1.0	

e Estimated
Period of regulated streamflow.

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1979 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1961 to current year.
WATER TEMPERATURE: October 1961 to current year.
SUSPENDED SEDIMENT DISCHARGE: January 1978 to September 1981.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request. Prior to October 1979, station was operated as 08126500 Colorado River at Ballinger.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 13,500 microsiemens May 3, 1963; minimum daily, 244 microsiemens Sept. 9, 1980.
WATER TEMPERATURE: Maximum daily, 39.0°C July 3, 1977; minimum daily, 0.0°C Jan. 9-11, 1973.
SEDIMENT CONCENTRATION: Maximum daily mean, 3,740 mg/l Sept. 9 1980; minimum daily mean, 4 mg/L Feb. 2, 1980.
SEDIMENT LOADS: Maximum daily, 94,100 tons Aug. 3, 1978; minimum daily, 0 tons on many days during 1978 and 1980-81.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,420 microsiemens July 15; minimum daily, 529 microsiemens Sept. 15.
WATER TEMPERATURE: Maximum daily, 33.0°C July 4, 23, 31, Aug. 6; minimum daily, 5.0°C Jan. 31, Feb. 1-4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT									
27...	1400	10	3690	21.5	1100	920	250	110	410
JAN									
08...	1200	14	2830	6.0	880	700	210	86	280
FEB									
21...	1405	10	3390	15.0	1100	890	260	100	350
APR									
23...	0930	506	4550	18.0	850	730	160	110	600
AUG									
09...	1200	3.3	4250	27.0	1300	1200	290	130	470
30...	1710	202	903	26.0	210	130	49	21	92

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT								
27...	5	2.3	160	920	650	0.40	7.5	2440
JAN								
08...	4	9.6	180	700	440	0.40	7.4	1840
FEB								
21...	5	9.5	170	910	520	0.70	4.6	2260
APR								
23...	9	20	120	740	990	0.60	7.3	2700
AUG								
09...	6	15	110	1200	750	0.60	14	2930
30...	3	6.0	82	140	150	0.30	6.5	514

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.	1995	490.2	2820	1900	2520	410	548	790	1040	950
NOV.	1995	543	3200	2170	3180	490	718	880	1300	1100
DEC.	1995	415	2750	1860	2080	400	445	770	864	940
JAN.	1996	405.9	3050	2070	2270	460	506	850	927	1000
FEB.	1996	290.1	3300	2240	1750	510	397	910	713	1100
MAR.	1996	181.0	4220	2870	1400	710	349	1100	550	1300
APR.	1996	4831.3	4780	3260	42500	860	11200	1200	16300	1400
MAY	1996	13222	5080	3470	124000	930	33200	1300	46900	1500
JUNE	1996	5936.7	4870	3320	53200	880	14000	1300	20400	1400
JULY	1996	219.6	5830	3990	2370	1100	680	1500	869	1600
AUG.	1996	765.3	2520	1710	3530	390	808	690	1430	820
SEPT	1996	10630	757	508	14600	85	2450	230	6490	290
TOTAL		37930.1	**	**	253000	**	65300	**	97800	**
WTD.AVG.		104	3630	2470	**	640	**	950	**	1100

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

FROM DAILY OBSERVER
SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1900	3710	2490	2940	3350	3690	4620	5080	5150	5530	3660	870
2	2480	3460	2350	2850	3330	3920	4550	5110	5180	5620	3850	845
3	2490	3940	2350	2850	3330	3920	4560	5100	5080	5640	3870	954
4	2440	4100	2350	2750	3420	3920	e4040	5100	4790	5440	3950	1120
5	2560	3510	2350	2580	3420	3890	3510	5100	4710	5450	4040	e1610
6	2450	3510	2420	2600	3290	3890	e3470	5060	4710	5470	4080	2100
7	2560	3510	2500	2880	3290	3750	e3430	5030	4820	5600	4210	e1760
8	2560	3530	2550	2880	3090	3760	3400	5100	4430	5620	4210	1420
9	2570	3490	2860	2830	3100	3920	1980	5090	4440	5620	4430	e1380
10	2560	3370	2860	2800	3100	4410	1990	4960	5030	5430	4610	e1320
11	2470	e3370	2860	2730	3170	4410	2080	4970	5020	5440	4740	e1260
12	2470	e3320	2860	2830	3170	4410	2190	5010	4960	5210	4760	e1200
13	2480	3300	2920	2570	3130	4410	2290	5010	e4980	5290	5310	1140
14	2740	3400	2930	2570	3130	4420	2740	5010	4970	5370	4740	1210
15	2610	3460	2900	2670	3140	4380	2740	5040	4870	6420	4190	529
16	2740	3450	2890	2670	3350	4460	2750	5030	4890	6380	3890	821
17	2930	e3400	2700	2820	3350	4460	2870	5090	4910	6310	3890	747
18	2930	e3300	2710	2600	3340	4370	2980	5090	4890	6190	4000	692
19	2930	3260	2800	2900	3350	4260	3150	5110	e4920	6190	4030	757
20	3210	3070	2890	2900	3340	4180	e4110	5090	e4990	6110	4040	722
21	3210	2910	2880	2940	3420	4580	5110	5100	e5080	6080	4120	e710
22	3280	2890	2740	3000	3410	4580	4980	5110	5120	6050	4270	703
23	3620	e2800	2890	2970	3480	4590	4340	5130	5130	6080	4290	705
24	3630	2690	2890	2970	3480	4580	4910	5100	5150	5500	4230	727
25	3730	2490	2890	4470	3480	4650	5000	5120	5170	5510	4230	779
26	3720	e2490	2900	e4470	3490	4440	5040	5100	5300	5790	e3490	863
27	3730	e2490	2900	4470	3320	4190	5040	5110	5290	5800	2000	947
28	3960	e2500	2890	4470	3320	4330	5050	5140	5380	5290	1520	951
29	3970	e2500	2870	4460	3280	4640	5050	5140	e5380	5900	1110	956
30	3980	2500	3250	3310	---	4640	5080	5110	5390	4540	966	967
31	3990	---	2940	3310	---	4650	---	5070	---	3730	941	---
MEAN	3000	3190	2760	3100	3310	4280	3770	5080	5000	5630	3730	1030

e Estimated

FROM DAILY OBSERVER
WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	19.5	15.5	7.0	5.0	14.5	20.0	21.5	27.0	29.0	31.0	26.0
2	25.0	16.5	15.0	7.0	5.0	16.0	25.0	24.0	26.0	31.0	32.0	30.0
3	25.0	15.0	16.0	6.5	5.0	17.0	25.5	26.0	27.0	31.0	32.0	26.0
4	23.5	12.0	15.0	8.5	5.0	15.5	---	26.0	27.0	33.0	32.0	28.0
5	23.0	15.0	15.0	8.0	10.5	16.0	10.5	27.0	27.0	30.5	30.0	---
6	23.0	15.0	15.0	6.0	13.0	16.0	---	26.0	29.0	28.0	33.0	26.0
7	20.5	17.0	12.0	8.0	13.5	12.0	---	24.0	27.0	32.5	30.5	---
8	23.0	18.0	11.5	9.0	14.0	12.0	19.0	26.0	27.0	32.0	29.0	28.0
9	24.0	16.0	9.0	11.0	17.0	9.0	20.0	23.0	25.0	32.0	29.0	---
10	25.0	19.0	9.0	11.0	16.5	14.0	22.0	26.0	29.0	32.0	28.0	---
11	25.0	---	9.5	12.0	14.0	16.0	20.5	22.0	30.0	31.0	29.0	---
12	25.0	---	12.0	9.0	13.5	20.0	23.0	26.0	30.0	27.0	30.0	---
13	22.0	15.5	13.0	9.0	15.0	22.0	21.0	25.0	---	29.0	30.0	25.0
14	21.0	16.0	14.0	9.5	16.0	18.0	18.0	23.0	30.0	26.0	32.0	25.0
15	21.0	13.0	13.0	9.0	16.0	18.0	18.0	27.5	30.0	30.0	29.5	22.0
16	21.5	15.0	13.5	13.0	17.0	20.0	18.5	24.0	29.5	29.5	30.0	25.5
17	22.0	---	13.5	13.5	18.0	20.0	20.5	27.5	29.0	31.0	30.0	26.0
18	22.0	---	11.0	9.0	17.0	16.0	20.0	27.0	32.0	31.0	28.0	26.0
19	22.0	14.0	11.5	9.0	19.0	17.0	27.0	27.0	---	32.5	30.0	24.0
20	21.0	18.0	8.0	10.0	19.0	16.0	21.5	27.5	---	30.0	31.0	26.0
21	20.0	17.5	8.5	12.0	17.0	18.0	21.0	27.0	---	30.0	30.5	---
22	22.0	18.0	8.5	14.5	17.0	20.0	19.0	27.0	31.0	30.0	30.0	26.0
23	23.0	---	9.0	11.5	17.5	20.5	20.0	27.0	31.0	33.0	26.0	26.0
24	23.5	16.0	9.0	12.0	18.0	20.0	23.0	26.0	30.0	31.0	25.0	24.5
25	23.0	16.0	9.5	12.5	18.0	16.0	21.5	26.0	30.0	27.0	24.0	26.0
26	22.0	---	9.0	---	18.5	9.0	22.5	25.0	30.0	27.0	---	26.0
27	22.0	---	9.0	12.0	18.5	8.0	25.0	26.0	30.0	28.0	25.0	25.0
28	21.5	---	8.5	14.0	10.5	13.0	22.0	26.0	30.0	31.5	25.0	23.0
29	21.0	14.0	9.0	14.0	9.0	16.0	18.0	26.0	---	29.0	25.5	21.0
30	21.0	16.5	12.5	6.5	---	19.0	21.0	---	27.0	32.0	25.5	21.0
31	20.5	---	8.5	5.0	---	19.5	---	26.0	---	33.0	26.5	---
MEAN	22.6	16.0	11.4	10.0	14.2	16.3	20.9	25.6	28.8	30.3	29.0	25.3

08127000 ELM CREEK AT BALLINGER, TX

LOCATION.--Lat 31°44'57", long 99°56'51", Runnels County, Hydrologic Unit 12090101, on right bank 1,000 ft upstream from storage dam at Ballinger and 1.9 mi upstream from mouth.

DRAINAGE AREA.--450 mi², of which 63.5 mi² is above Lake Winters Dam.

PERIOD OF RECORD.--April 1932 to current year.
Water-quality records.--Chemical analyses: October 1957 to September 1991. Specific conductance: October 1967 to September 1991. Water temperatures: October 1967 to September 1991.

REVISED RECORDS.--WSP 1442: 1935, 1946, 1954. WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and masonry dam control. Datum of gage is 1,617.72 ft sea level.

REMARKS.--No estimated daily discharges. Records good except those below 10 ft³/s, which are fair. The stage-discharge relation during periods of low flow are affected by wind action and by occasional accumulation of drift on dam. The city of Winters diverts water from New Lake Winters (capacity, 8,374 acre-ft at elevation, 1,790.0 ft) for municipal use. Prior to June 1982, capacity of Old Lake Winters (just upstream from new dam) was 3,060 acre-ft. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1906 reached a stage of 14.5 ft, affected by backwater from Colorado River.

REVISIONS.--Revised figures of mean daily discharges for water year 1995, superseding those published in previous reports are given below.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1994 TO SEPTEMBER 1995
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	1.9	26	17	9.7	12	11	6.6	210	9.3	.00	2.1
2	.01	1.6	24	17	9.7	12	10	7.5	183	8.3	74	1.8
3	.00	1.6	24	17	8.6	12	9.7	7.6	837	13	47	1.5
4	.00	1.7	23	17	8.0	12	52	7.7	184	9.1	422	1.4
5	.00	1.6	21	17	8.0	12	270	48	103	9.0	1690	1.2
6	.00	.97	18	15	9.6	10	191	177	75	8.0	177	1.1
7	.00	.81	17	15	9.7	9.9	95	46	62	11	78	1.0
8	.00	.90	17	14	9.7	8.0	69	36	53	8.3	54	.96
9	.00	1.4	21	14	9.7	8.9	57	35	47	5.6	40	.97
10	.00	1.2	48	14	9.7	9.7	50	19	41	3.5	31	1.0
11	.00	1.6	31	14	9.7	9.7	42	43	250	3.2	25	.97
12	.00	1.8	23	14	9.7	11	36	23	153	2.5	20	.53
13	.00	2.0	19	13	9.7	15	31	15	79	1.9	16	.95
14	.00	3.4	17	12	10	15	28	14	60	1.6	15	1.3
15	.00	130	17	13	12	16	25	12	48	1.4	13	3.1
16	.00	69	17	13	9.2	14	24	12	36	1.2	13	3.7
17	.00	57	17	11	8.4	13	21	10	28	1.1	10	3.6
18	.43	47	14	13	9.7	12	18	8.6	22	1.1	8.0	67
19	41	40	14	14	9.5	11	16	6.0	17	.88	8.1	78
20	14	204	14	14	9.3	11	15	6.6	16	.40	7.4	35
21	5.6	224	12	14	9.6	9.7	14	6.2	14	.15	7.1	20
22	2.7	130	12	13	9.6	9.7	14	5.1	13	.05	6.8	15
23	1.7	87	12	12	9.7	9.7	12	4.8	11	.01	7.0	14
24	1.3	68	12	12	9.7	9.0	14	5.3	9.0	.00	4.1	13
25	1.5	58	12	12	10	12	13	5.2	7.5	.00	3.4	11
26	46	52	12	12	16	52	11	7.5	6.4	.00	4.0	9.7
27	23	46	13	11	13	38	9.7	14	5.8	.00	3.5	9.7
28	13	40	16	11	12	19	9.7	15	4.3	.00	3.0	8.7
29	7.2	33	20	9.8	---	15	8.1	38	4.7	.00	1.9	9.1
30	3.9	29	30	9.7	---	13	7.5	23	12	.00	1.6	9.0
31	2.6	---	22	9.7	---	12	---	45	---	.00	1.6	---
TOTAL	163.96	1336.48	595	414.2	279.2	433.3	1183.7	711.7	2591.7	100.59	2792.50	326.38
MEAN	5.29	44.5	19.2	13.4	9.97	14.0	39.5	23.0	86.4	3.24	90.1	10.9
MAX	46	224	48	17	16	52	270	177	837	13	1690	78
MIN	.00	.81	12	9.7	8.0	8.0	7.5	4.8	4.3	.00	.00	.53
AC-FT	325	2650	1180	822	554	859	2350	1410	5140	200	5540	647
CFSM	.01	.10	.04	.03	.02	.03	.09	.05	.19	.01	.20	.02
IN.	.01	.11	.05	.03	.02	.04	.10	.06	.21	.01	.23	.03

08127000 ELM CREEK AT BALLINGER, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1995, BY WATER YEAR (WY)

MEAN	61.6	13.7	19.0	12.3	27.3	19.8	46.4	155	93.7	26.0	32.8	69.1
MAX	823	253	576	164	911	268	538	822	700	623	740	1248
(WY)	1982	1975	1992	1992	1992	1992	1954	1935	1982	1932	1978	1935
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1934	1935	1934	1934	1934	1935	1939	1984	1934	1933	1933	1938

SUMMARY STATISTICS	FOR 1994 CALENDAR YEAR		FOR 1995 WATER YEAR		WATER YEARS 1932 - 1995	
ANNUAL TOTAL	23911.93		10928.71			
ANNUAL MEAN	65.5		29.9		46.3	
HIGHEST ANNUAL MEAN					261	1935
LOWEST ANNUAL MEAN					.96	1984
HIGHEST DAILY MEAN	5540	May 12	1690	Aug 5	21400	May 1 1956
LOWEST DAILY MEAN	.00	Apr 23	.00	Oct 3	.00	Apr 1 1932
ANNUAL SEVEN-DAY MINIMUM	.00	Apr 23	.00	Oct 3	.00	Apr 1 1932
INSTANTANEOUS PEAK FLOW			2810	Aug 5	50000	Oct 13 1957
INSTANTANEOUS PEAK STAGE			5.66	Aug 5	a14.20	Oct 13 1957
ANNUAL RUNOFF (AC-FT)	47430		21680		33550	
ANNUAL RUNOFF (CFSM)	.15		.067		.10	
ANNUAL RUNOFF (INCHES)	1.98		.90		1.40	
10 PERCENT EXCEEDS	56		52		44	
50 PERCENT EXCEEDS	1.4		12		1.2	
90 PERCENT EXCEEDS	.00		.96		.00	

a From floodmark, not affected by backwater from Colorado River.

08127000 ELM CREEK AT BALLINGER, TX--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	10	8.0	9.5	8.0	4.7	7.2	4.9	134	.39	.00	34
2	6.1	9.6	8.9	9.4	8.0	4.2	5.7	4.3	44	.25	.00	18
3	8.0	9.7	9.3	8.4	8.0	4.4	5.2	3.9	21	.12	.00	13
4	8.0	9.5	8.7	8.0	8.0	4.4	5.2	3.6	79	.06	.00	10
5	7.9	9.7	9.1	8.0	8.0	5.0	19	3.4	68	.01	.00	99
6	7.5	9.7	8.0	8.0	8.0	4.2	38	9.3	31	.00	.00	300
7	6.6	9.7	8.1	8.0	8.0	3.3	47	6.4	68	.00	.00	114
8	6.2	8.9	9.1	8.0	8.0	3.4	26	10	42	.00	.00	191
9	7.7	8.0	8.0	8.0	8.0	3.6	18	8.8	24	.00	.00	146
10	6.9	8.0	8.0	8.0	8.5	3.6	15	7.4	16	.00	.00	112
11	5.9	6.8	8.0	8.0	7.4	3.6	13	7.7	13	.00	.00	92
12	5.2	6.6	8.0	8.0	6.6	3.9	11	4.4	9.4	.00	.00	81
13	6.0	7.5	8.0	8.0	6.3	4.3	9.7	3.4	7.7	.00	.00	83
14	5.3	7.8	9.5	8.0	6.0	4.0	9.7	2.8	6.1	.00	.00	450
15	4.8	8.0	9.3	8.0	5.3	4.0	8.3	2.2	4.2	.00	.00	12400
16	3.4	8.0	8.0	8.0	5.4	3.9	8.0	1.8	2.6	.00	.00	4110
17	3.3	10	9.5	8.3	5.4	3.6	8.0	1.4	1.9	.00	.00	1450
18	3.4	11	8.9	8.0	5.7	3.1	8.0	1.1	3.1	.00	.00	851
19	3.0	12	8.0	7.9	5.4	2.7	7.8	.90	15	.00	.00	529
20	2.1	12	8.0	8.0	5.8	2.8	6.6	.77	10	.00	.00	377
21	2.2	11	8.0	8.0	5.9	3.1	6.2	.59	6.0	.00	.00	282
22	2.1	9.7	8.0	8.0	5.4	3.1	8.2	.40	2.7	.00	.00	216
23	2.2	9.7	8.0	8.0	5.3	3.1	13	.22	1.7	.00	.00	163
24	2.0	8.2	8.0	8.0	4.4	3.2	16	.11	1.5	.00	.00	132
25	2.3	8.0	8.0	8.0	3.8	2.6	13	.05	1.3	.00	.00	112
26	2.9	8.0	9.0	8.0	4.7	2.4	11	.02	1.1	.00	.00	101
27	3.4	8.0	9.4	7.8	4.1	5.4	9.3	.00	1.2	.00	.00	103
28	2.9	8.0	8.0	8.0	4.4	8.0	8.0	.00	1.0	.00	.03	91
29	2.7	8.0	8.0	8.0	4.4	8.0	6.0	.00	.84	.00	749	79
30	2.8	8.0	8.9	8.0	---	9.1	5.2	.45	.55	.00	264	68
31	3.4	---	8.2	8.0	---	8.0	---	1400	---	.00	78	---
TOTAL	143.2	269.1	261.9	251.3	182.2	132.7	372.3	1490.31	617.89	0.83	1091.03	22807
MEAN	4.62	8.97	8.45	8.11	6.28	4.28	12.4	48.1	20.6	.027	35.2	760
MAX	8.0	12	9.5	9.5	8.5	9.1	47	1400	134	.39	749	12400
MIN	2.0	6.6	8.0	7.8	3.8	2.4	5.2	.00	.55	.00	.00	10
AC-FT	284	534	519	498	361	263	738	2960	1230	1.6	2160	45240
CFSM	.01	.02	.02	.02	.01	.01	.03	.11	.05	.00	.08	1.69
IN.	.01	.02	.02	.02	.02	.01	.03	.12	.05	.00	.09	1.89

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1996, BY WATER YEAR (WY)

MEAN	60.7	13.7	18.8	12.3	27.0	19.5	45.9	154	92.5	25.6	32.9	79.7
MAX	823	253	576	164	911	268	538	822	700	623	740	1248
(WY)	1982	1975	1992	1992	1992	1992	1954	1935	1982	1932	1978	1935
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1934	1935	1934	1934	1934	1935	1939	1984	1934	1933	1933	1938

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1932 - 1996	
ANNUAL TOTAL	9507.47		27619.76			
ANNUAL MEAN	26.0		75.5		46.8	
HIGHEST ANNUAL MEAN					261	1935
LOWEST ANNUAL MEAN					.96	1984
HIGHEST DAILY MEAN	1690	Aug 5	12400	Sep 15	21400	May 1 1956
LOWEST DAILY MEAN	.00	Jul 24	.00	May 27	.00	Apr 1 1932
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 24	.00	Jul 6	.00	Apr 1 1932
INSTANTANEOUS PEAK FLOW			15700	Sep 15	50000	Oct 13 1957
INSTANTANEOUS PEAK STAGE			8.47	Sep 15	a14.20	Oct 13 1957
ANNUAL RUNOFF (AC-FT)	18860		54780		33880	
ANNUAL RUNOFF (CFSM)	.058		.17		.10	
ANNUAL RUNOFF (INCHES)	.79		2.28		1.41	
10 PERCENT EXCEEDS	42		43		44	
50 PERCENT EXCEEDS	9.7		7.5		1.3	
90 PERCENT EXCEEDS	2.0		.00		.00	

a From floodmark, not affected by backwater from Colorado River.

08128000 SOUTH CONCHO RIVER AT CHRISTOVAL, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°11'13", long 100°30'06", Tom Green County, Hydrologic Unit 12090102, on left upstream side of U.S. Highway 277 bridge, 9.5 mi upstream from Twin Buttes Dam, and 23.7 mi upstream from mouth.

DRAINAGE AREA.--412.6 mi², of which 58.6 mi² probably is noncontributing.

PERIOD OF RECORD.--February 1930 to September 1995 (daily mean discharge). October 1995 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1118: 1943(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,010.22 ft above sea level. Prior to July 17, 1930, nonrecording gage at same site and datum. July 17, 1930, to Nov. 15, 1977, water-stage recorder at same site and datum. Nov. 16, 1977 to May 5, 1987, water-stage recorder at site 160 ft downstream at same datum.

REMARKS.--Records good. Low flow is affected by diversions to the South Concho Irrigation Company canal 800 ft upstream from station. One observation of water temperature was made during the year. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1882, about 23 ft Aug. 6, 1906 (discharge, 115,000 ft³/s), from rating curve extended above 15,100 ft³/s on basis of slope-area measurement of 80,100 ft³/s, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 160 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 30	0015	3,530	7.14	Aug. 29	1045	8,660	a9.76

a From floodmark.

08128400 MIDDLE CONCHO RIVER ABOVE TANKERSLEY, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°25'38", long 100°42'39", Irion County, Hydrologic Unit 12090103, on left bank 0.3 mi upstream from East Rocky Creek, 0.5 mi southwest of Tullos Ranch Headquarters, 6.7 mi northwest of Tankersley, and 20.9 mi upstream from mouth.

DRAINAGE AREA.--2,084 mi², of which 968 mi² probably is noncontributing.

PERIOD OF RECORD.--March 1961 to September 1995 (daily mean discharge). October 1995 to current year (peak discharges greater than base discharge).
Water-quality records.--Chemical analyses: August 1964 to April 1965.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,986.47 ft above sea level.

REMARKS.--Records good. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 29.5 ft Sept. 26, 1936. A flood in 1900 reached the same stage, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 30	0230	3,200	14.00	Sept. 16	0230	980	10.38
Aug. 29	1900	14,400	a24.30				

a From floodmark.

08129300 SPRING CREEK ABOVE TANKERSLEY, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°19'48", long 100°38'24", Tom Green County, Hydrologic Unit 12090102, on right bank at downstream side of bridge on Farm Road 2335, 1.4 mi south of Tankersley, 2.5 mi upstream from Dove Creek, and 10.4 mi upstream from mouth.

DRAINAGE AREA.--424.7 mi², of which 19.7 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1960 to September 1995 (daily mean discharge). October 1995 to current year (peak discharges greater than base discharge).
Water-quality records.--Chemical analyses: September 1964 to May 1967.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,964.72 ft above sea level. Prior to Nov. 10, 1960, nonrecording gage at same site and datum.

REMARKS.--Records good. There are many small diversions above station for irrigation. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Notable floods since at least 1853 occurred in 1882 and 1884. Flood of Oct. 3, 1959, reached a stage of 18.4 ft, from floodmarks. At former gage near Tankersley 8 mi downstream, the flood of Oct. 3, 1959, had a discharge of 82,100 ft³/s and was found to be about 3 ft lower than the 1882 flood, the greatest at that location since at least 1853.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Aug. 29	1745	17,600	a13.65	Sept. 15	0815	1,490	6.45

a From floodmark.

08130500 DOVE CREEK AT KNICKERBOCKER, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°16'26", long 100°37'50", Tom Green County, Hydrologic Unit 12090102, on left downstream end of bridge on Farm Road 2335, 0.5 mi west of Knickerbocker, and 5.7 mi upstream from mouth.

DRAINAGE AREA.--226.43 mi², of which 8.43 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1960 to September 1995 (daily mean discharge). October 1995 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,001.45 ft above sea level. Prior to Nov. 10, 1960, nonrecording gage, Nov. 10, 1960, to Mar. 17, 1986, water-stage recorder, both at site 278 ft to the right at present datum.

REMARKS.--Records good. Flow is partly regulated by storage, by diversions from two small upstream channel dams, and by small upstream diversions (for irrigation). Flow is sustained by springflow from Dove Creek Spring about 9 mi upstream. One observation of water temperature was made during the year. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, 30.4 ft in 1906 and Oct. 3, 1959; floods in 1882 and 1884 reached about the same stage, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Aug. 9	1930	697	8.17	Aug. 29	1500	12,500	a20.10
Aug. 11	0630	156	5.26	Sept. 15	1215	142	5.12

a From floodmark.

08131200 TWIN BUTTES RESERVOIR NEAR SAN ANGELO, TX

LOCATION.--Lat 31°22'55", long 100°32'17", Tom Green County, Hydrologic Unit 12090102, in outlet control tower at Twin Buttes Dam on Middle Concho River, Spring Creek, and South Concho River, 3.8 mi upstream from Lake Nasworthy Dam, 8.1 mi southwest of San Angelo, and 75.0 mi upstream from mouth.

DRAINAGE AREA.--3,868 mi², of which 1,055 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1962 to current year.
Water-quality records.--Chemical analyses: October 1969 to September 1984.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder on Middle Concho-Spring Creek pool and nonrecording gage on South Concho pool. Datum of gage is sea level.

REMARKS.--The reservoir is formed by a rolled earthfill dam 8.1 mi long, including a 200-foot-wide uncontrolled off-channel concrete gravity spillway with ogee weir section. Outlet works consist of three 15.5-foot concrete conduits, each controlled by a 12.0- by 15.0-foot fixed-wheel gate and a 12.0- by 15.0-foot radial gate, located in the Middle Concho-Spring Creek pool. Low-flow releases are made through 2.0- by 2.0-foot gates located in the center of three fixed-wheel gates. The South Concho and Middle Concho-Spring Creek pools are connected by a 3.22-mile equalizing channel. At an elevation of 1,926.5 ft, the two pools join to form one lake. Below elevation 1,926.5 ft, daily contents are obtained from capacity tables for South Concho and Middle Concho-Spring Creek pools and summed to obtain combined daily contents. Lake level elevations below 1,926.5 ft represent Middle Concho-Spring Creek pool only. Deliberate impoundment of water began on Dec. 1, 1962; dam was completed Feb. 13, 1963. Capacity curve is based on a survey made in 1958. Reservoir was built for flood control, irrigation, and municipal uses. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,991.0	-
Crest of spillway	1,969.1	640,600
Top of conservation storage	1,940.2	186,200
Bottom of equalizing channel (Middle Concho-Spring Creek pool)	1,926.5	86,480
Dead storage in South Concho pool	1,926.5	5,440
Lowest gated outlet (invert at Middle Concho-Spring Creek pool)	1,885.0	3,750

COOPERATION.--Capacity curve furnished by the U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 205,200 acre-ft May 12, 1975 (elevation, 1,942.20 ft); minimum since first appreciable storage, 2,120 acre-ft Apr. 15, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum combined daily contents, 63,920 acre-ft Sept. 26, 30; minimum combined daily, 21,790 acre-ft Aug. 23.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44800	43490	43430	41080	40870	40010	36230	32780	30760	27530	22560	60130
2	44910	43420	43410	41080	40960	39960	36050	32580	30760	27320	22500	60370
3	44980	43340	43380	41070	40970	39940	35840	32390	30680	27170	22430	60540
4	44940	43320	43360	41070	41010	39940	35590	32240	30880	26990	22370	60370
5	44870	43260	43330	41090	41050	39920	35870	32030	30850	26760	22300	60490
6	44800	43230	43290	41130	41070	39790	35950	31890	30760	26560	22240	60470
7	44780	43140	43220	41160	41030	39730	35990	31790	30710	26380	22140	60540
8	44720	43120	43090	41240	40950	39630	36040	31730	30610	26140	22070	60570
9	44680	43110	43020	41250	40910	39570	36210	31640	30520	25950	22100	60620
10	44650	43010	42960	41300	40820	39490	36150	31860	30440	25760	22120	60580
11	44620	42990	42910	41260	40820	39460	36110	31780	30350	25580	22340	60540
12	44570	42930	42810	41250	40800	39440	36010	31720	30260	25390	22400	60520
13	44490	42850	42660	41250	40780	39360	35890	31640	30150	25210	22360	60560
14	44440	42820	42540	41200	40760	39220	35700	31560	30060	25050	22300	60940
15	44390	42790	42400	41190	40670	39180	35600	31470	29970	24880	22260	61900
16	44320	42770	42240	41190	40660	39070	35480	31350	29890	24710	22230	62980
17	44260	43110	42120	41190	40620	38970	35350	31210	29810	24570	22170	63180
18	44240	43260	42010	41130	40620	38840	35190	31070	29710	24470	22130	63410
19	44120	43320	41890	41110	40570	38730	34990	30930	29580	24350	22070	63560
20	44080	43380	41770	41060	40530	38630	34790	30790	29440	24190	22010	63660
21	44010	43430	41690	41020	40490	38540	34640	30680	29270	e24020	21940	63720
22	43910	43490	41630	41020	40450	38430	34520	30530	29140	e23880	21830	63770
23	43790	43490	41560	41000	40370	38390	34350	30300	28940	23760	21790	63830
24	43710	43510	41470	40970	40370	38310	34190	30130	28780	23520	21800	63840
25	43640	43530	41380	40960	40330	38090	33970	29960	28600	23360	21850	63870
26	43600	43570	41310	40900	40310	37790	33760	29800	28460	23210	21810	63920
27	43490	43550	41240	40880	40200	37510	33610	29610	28280	23090	21820	63910
28	43430	43500	41190	40850	40120	37180	33400	29440	28080	22990	22170	63900
29	43370	43480	41170	40830	40060	36950	33170	29280	27900	22850	51520	63890
30	43320	43460	41120	40830	---	36660	32960	30280	27730	22730	58920	63920
31	43390	---	41100	40860	---	36420	---	30780	---	22630	59800	---
MAX	44980	43570	43430	41300	41070	40010	36230	32780	30880	27530	59800	63920
MIN	43320	42770	41100	40830	40060	36420	32960	29280	27730	22630	21790	60130
(+)	1911.21	1911.24	1910.16	1910.08	1909.72	1907.98	1906.15	1904.63	1903.08	1899.61	1917.20	1918.92
(@)	-1480	+70	-2360	-240	-800	-3640	-3460	-2180	-3050	-5100	+37170	+4120

CAL YR 1995 MAX 68330 MIN 41100 (@) -23030
WTR YR 1996 MAX 63920 MIN 21790 (@) +19050

e Estimated
(+) Elevation, in feet, at end of month of Middle Concho and Spring Creek pool.
(@) Change in combined contents, in acre-feet.

08132000 LAKE NASWORTHY NEAR SAN ANGELO, TX

LOCATION.--Lat 31°23'19", long 100°28'41", Tom Green County, Hydrologic Unit 12090102, on left bank 250 ft upstream from Nasworthy Dam on South Concho River, 3.8 mi downstream from Twin Buttes Dam, 6.0 mi southwest of San Angelo, and 68.9 mi upstream from mouth.

DRAINAGE AREA.--3,975 mi², of which 3,868 mi² is above Twin Buttes Reservoir and 1,055 mi² probably is noncontributing.

PERIOD OF RECORD.--March 1930 to current year. Prior to October 1969, end of month contents only.
Water-quality records.--Chemical analyses: October 1969 to September 1984.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft sea level.

REMARKS.--The lake is formed by a 6,090-foot dam with a 5,590-foot earthen section that has an earthen spillway 300 ft long, a concrete spillway 475 ft long with a bank of fifteen 25.0- by 18.0-foot tainter gates, and a 25.0- by 3.0-foot collapsible floodgate. The dam was completed and storage began Mar. 28, 1930. Since July 1966, West Texas Utilities Co. has operated a steam generating powerplant on the lake. Since September 1962, the lake has been almost totally controlled by releases or pumpage from Twin Buttes Reservoir (station 08131200). Siltation surveys in December 1938 and May 1953 by the National Resource Conservation Service (formerly the Soil Conservation Service) show that 1,191 acre-ft of silt was deposited from March 1930 to December 1938 and an additional 1,023 acre-ft was deposited from December 1938 to May 1953, totaling 2,214 acre-ft. Water is used for part of San Angelo municipal supply and for irrigation east of San Angelo. The capacity curve is based on a survey by the Texas Water Development Board in August and September 1993 and has been used since October 1995. The City of San Angelo is in the process of planning and securing necessary permits to dredge Lake Nasworthy in the next year or two. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	43.5	-
Crest of spillway (300 ft)	39.1	-
Top of gates	33.2	-
Top of collapsible floodgate	32.2	10,110
Lowest outlet to canal (invert)	27.5	4,650
Crest of spillway (tainter gates sill)	15.3	27
Lowest gated outlet (invert)	-4.0	0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 26,900 acre-ft Sept. 15, 1936 (gage height, 38.36 ft); minimum, 209 acre-ft Aug. 22, 1964 (gage height, 13.21 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 9,770 acre-ft Aug. 30, 31 at 1300 hours (gage height, 32.04 ft); minimum, 8,310 acre-ft Sept. 30 (gage height, 30.88 ft).

Capacity table (gage height, in feet, and total contents, in acre-feet)

13.0	4	25.0	2,640	30.0	7,270
17.0	102	27.0	4,190	31.0	8,460
21.0	733	28.0	5,130	32.0	9,710
23.0	1,470	29.0	6,160		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8890	8930	8780	9050	8800	8790	8930	8730	9020	8840	8990	9740
2	9040	8910	8780	9060	8760	8790	8900	8830	9070	8840	8940	9730
3	9060	8910	8780	9070	8730	8790	8880	8860	9070	8880	8850	9670
4	9060	8940	8790	9050	8700	8830	8830	8930	9250	8910	8780	9610
5	9040	8980	8750	9020	8650	8790	9060	8960	9230	8940	8740	9490
6	9040	9020	8750	8990	8680	8740	8980	9060	9190	8960	8700	9430
7	9020	9000	8750	8950	8740	8730	8890	9090	9190	8940	8680	9380
8	9020	9010	8730	8930	8790	8750	8810	9060	9180	8930	8670	9320
9	9020	9050	8730	8860	8850	8780	8800	9020	9180	8910	8650	9270
10	9020	9000	8720	8880	8840	8800	8810	9070	9160	8910	8630	9190
11	9000	9010	8670	8860	8860	8790	8790	9060	9140	8910	8690	9100
12	8980	9020	8640	8890	8890	8780	8780	9070	9100	8930	8670	9040
13	8930	9010	8650	8900	8910	8800	8800	9090	9090	8950	8650	8960
14	8910	9010	8690	8910	8890	8800	8780	9070	9060	8990	8630	9070
15	8900	9000	8700	8930	8890	8780	8780	9010	9050	9010	8540	9090
16	8860	8980	8720	8940	8890	8780	8750	8980	9010	9040	8510	9020
17	8850	9110	8740	8960	8860	8790	8740	8950	9000	9020	8490	8990
18	8840	9070	8760	8940	8860	8790	8740	8940	8980	8980	8480	8960
19	8780	9020	8790	8980	8840	8800	8750	8900	8950	8940	8470	8930
20	8780	8990	8800	8950	8830	8810	8750	8900	8910	8950	8460	8860
21	8790	8960	8840	8950	8810	8840	8760	8880	8890	8950	8440	8790
22	8780	8940	8860	8990	8790	8830	8790	8860	8860	8980	8440	8720
23	8750	8900	8890	8980	8760	8810	8790	8850	8850	8990	8520	8640
24	8750	8880	8930	8960	8750	8730	8780	8840	8850	9000	8600	8580
25	8750	8840	8930	8980	8750	8620	8740	8860	8860	9000	8650	8540
26	8780	8840	8950	8940	8740	8700	8720	8930	8860	9010	8680	8510
27	8760	8760	8960	8950	8730	8850	8700	8940	8850	9050	8690	8460
28	8760	8790	8960	8950	8740	8950	8640	8890	8850	9060	8910	8410
29	8760	8760	9000	8940	8780	9000	8630	8900	8850	9070	9710	8370
30	8780	8780	9020	8880	---	8960	8650	8960	8850	9060	9770	8310
31	8900	---	9040	8840	---	8940	---	9010	---	9020	9760	---
MAX	9060	9110	9040	9070	8910	9000	9060	9090	9250	9070	9770	9740
MIN	8750	8760	8640	8840	8650	8620	8630	8730	8850	8840	8440	8310
(+)	31.36	31.26	31.47	31.31	31.26	31.39	31.16	31.45	31.32	31.46	32.03	30.88
(@)	+20	-120	+260	-200	-60	+160	-290	+360	-160	+170	+740	-1450

CAL YR 1995 MAX 9430 MIN 8640 (@) +210
WTR YR 1996 MAX 9770 MIN 8310 (@) -570

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

08133500 NORTH CONCHO RIVER AT STERLING CITY, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°49'48", long 100°59'36", Sterling County, Hydrologic Unit 12090104, on right bank 100 ft upstream from bridge on State Highway 163, 0.5 mi south of Sterling City, 4.0 mi upstream from Sterling Creek, 5.1 mi downstream from Lacy Creek, and at mile 57.2.

DRAINAGE AREA.--588 mi², of which 19.6 mi² probably is noncontributing.

PERIOD OF RECORD.--September 1939 to September 1985 (daily mean discharge). October 1985 to September 1995 (daily discharges greater than 100 ft³/s). October 1995 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1512: 1945, 1948. WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,242.36 ft above sea level. Prior to Dec. 6, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good. There are several small diversions above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft³/s July 6, 1948 (gage height, 23.70 ft); prior to Oct. 1, 1985, no flow at times each year. Maximum stage since at least 1891, that of July 6, 1948.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
July 14	2200	399	8.68	Aug. 24	1130	482	9.18
Aug. 11	1330	652	10.10				

08134000 NORTH CONCHO RIVER NEAR CARLSBAD, TX
(Hydrologic index station)

LOCATION.--Lat 31°35'33", long 100°38'12", Tom Green County, Hydrologic Unit 12090104, near left bank at downstream side of bridge on county road, 0.6 mi southeast of Carlsbad, 1.5 mi upstream from Mule Creek, 2.5 mi upstream from Grape Creek, 16.2 mi upstream from O.C. Fisher Dam, and 21.3 mi upstream from mouth.

DRAINAGE AREA.--1,266 mi², of which 75.1 mi² probably is noncontributing.

PERIOD OF RECORD.--March 1924 to current year.
Water-quality records: Chemical and biochemical analyses: October 1980 to September 1982.

REVISED RECORDS.--WSP 1512: 1924(M), 1925, 1926(M), 1928, 1930, 1932(M), 1935, 1937-38(M), 1941(M), 1945(M), 1947-49(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,968.02 ft above sea level. Prior to Feb. 4, 1925, and Sept. 27, 1936, to Feb. 7, 1937, nonrecording gage; Feb. 4, 1925, to Sept. 26, 1936, and Feb. 8, 1937, to Nov. 6, 1955, water-stage recorder, all at site 2.5 mi upstream at datum 32.76 ft higher.

REMARKS.--No estimated daily discharges. Records fair. There are several diversions (by pumping) upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since June 1853, that of Sept. 26, 1936.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Aug. 24	1900	1,730	10.17	Aug. 29	2000	7,160	a16.91

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.84	1.7	1.1	1.5	.00	.00	.00	57
2	.00	.00	.00	.00	.96	1.9	1.1	1.0	.00	.00	.00	44
3	.00	.00	.00	.00	1.0	2.0	1.1	.91	.00	.00	.00	36
4	.00	.00	.00	.00	1.0	2.0	1.1	.71	.00	.00	.00	30
5	.00	.00	.00	.00	1.1	2.0	3.1	.24	.00	.00	.00	27
6	.00	.00	.00	.00	1.3	1.7	4.9	.16	.00	.00	.00	27
7	.00	.00	.00	.00	1.5	1.2	4.8	.14	.00	.00	.00	22
8	.00	.00	.00	.14	1.6	1.2	3.6	.10	.00	.00	.00	20
9	.00	.00	.00	.23	1.4	1.1	3.4	.05	.00	.00	.00	19
10	.00	.00	.00	.37	1.3	1.2	2.9	.05	.00	.00	.00	18
11	.00	.00	.00	.40	1.2	1.4	2.8	.05	.00	.00	.00	16
12	.00	.00	.00	.54	1.2	1.6	2.6	.05	.00	.00	43	15
13	.00	.00	.00	.60	1.2	1.8	2.1	.04	.00	.00	18	15
14	.00	.00	.00	.60	1.3	1.8	2.2	.03	.00	.00	6.2	17
15	.00	.00	.00	.60	1.2	1.7	2.0	.02	.00	.00	1.7	390
16	.00	.00	.00	.57	1.2	1.6	2.0	.00	.00	.00	.18	96
17	.00	.00	.00	.69	1.2	1.6	2.0	.00	.00	.00	.01	39
18	.00	.00	.00	.84	1.3	1.3	2.0	.00	.00	.00	.00	24
19	.00	.00	.00	.93	1.5	1.2	2.2	.00	.00	.00	.00	16
20	.00	.00	.00	1.0	1.6	1.1	2.2	.00	.00	.00	.00	12
21	.00	.00	.00	1.0	1.6	.80	2.0	.00	.00	.00	.00	9.1
22	.00	.00	.00	1.2	1.6	.88	3.2	.00	.00	.00	.00	6.8
23	.00	.00	.00	1.0	1.6	.96	5.2	.00	.00	.00	.00	5.6
24	.00	.00	.00	.84	1.5	1.1	6.7	.00	.00	.00	436	4.5
25	.00	.00	.00	.84	1.5	1.1	5.5	.00	.00	.00	312	3.8
26	.00	.00	.00	.88	1.5	1.1	3.7	.00	.00	.00	92	3.7
27	.00	.00	.00	.95	1.5	1.4	3.1	.00	.00	.00	64	3.6
28	.00	.00	.00	.84	1.6	1.8	2.8	.00	.00	.00	47	3.8
29	.00	.00	.00	.84	1.6	2.0	2.3	.00	.00	.00	1740	3.7
30	.00	.00	.00	.84	---	1.4	1.6	.00	.00	.00	542	2.8
31	.00	---	.00	.84	---	1.4	---	.00	---	.00	96	---
TOTAL	0.00	0.00	0.00	17.58	38.90	45.04	85.3	5.05	0.00	0.00	3398.09	987.4
MEAN	.000	.000	.000	.57	1.34	1.45	2.84	.16	.000	.000	110	32.9
MAX	.00	.00	.00	1.2	1.6	2.0	6.7	1.5	.00	.00	1740	390
MIN	.00	.00	.00	.00	.84	.80	1.1	.00	.00	.00	.00	2.8
AC-FT	.00	.00	.00	35	77	89	169	10	.00	.00	6740	1960

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1996, BY WATER YEAR (WY)

MEAN	37.5	4.09	4.22	4.02	6.64	10.5	36.4	81.5	27.6	41.2	17.0	85.8
MAX	1463	65.2	20.1	16.0	85.0	307	631	1355	252	1195	255	4019
(WY)	1958	1935	1931	1937	1935	1926	1925	1925	1937	1948	1953	1936
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1934	1934	1953	1953	1953	1953	1963	1967	1934	1924	1929	1930

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1924 - 1996	
ANNUAL TOTAL	430.25		4577.36			
ANNUAL MEAN	1.18		12.5		29.9	
HIGHEST ANNUAL MEAN					336	1936
LOWEST ANNUAL MEAN					.000	1970
HIGHEST DAILY MEAN	17	Apr 5	1740	Aug 29	62900	Sep 17 1936
LOWEST DAILY MEAN	.00	Jun 13	.00	Oct 1	.00	Jun 20 1924
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 13	.00	Oct 1	.00	Jun 20 1924
INSTANTANEOUS PEAK FLOW			7160	Aug 29	94600	Sep 26 1936
INSTANTANEOUS PEAK STAGE			a16.91	Aug 29	29.10	Sep 26 1936
ANNUAL RUNOFF (AC-FT)	853		9080		21680	
10 PERCENT EXCEEDS	3.5		5.3		12	
50 PERCENT EXCEEDS	.00		.00		1.6	
90 PERCENT EXCEEDS	.00		.00		.00	

a From floodmark.

08134500 O.C. FISHER LAKE AT SAN ANGELO, TX

LOCATION.--Lat 31°29'04", long 100°28'53", Tom Green County, Hydrologic Unit 12090104, in intake structure of O.C. Fisher Dam on North Concho River, 3.1 mi northwest of San Angelo, and 6.6 mi upstream from mouth.

DRAINAGE AREA.--1,488 mi², of which 105 mi² probably is noncontributing.

PERIOD OF RECORD.--February 1952 to current year. Published as San Angelo Reservoir prior to October 1970, and as San Angelo Lake, October 1970 to September 1974.
Water-quality records.--Chemical analyses: October 1969 to September 1984.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 12, 1953, non-recording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 40,885 ft long, including spillway. Closure was completed Mar. 7, 1951, and the dam was completed May 3, 1951. Deliberate impoundment began Feb. 1, 1952. The lake is operated for flood control and recreation with part as municipal supply for the city of San Angelo. The spillway is an uncontrolled off-channel concrete gravity dam with ogee weir section 1,150 ft wide located to the right and upstream from the right end of dam. The spillway is designed to discharge 356,000 ft³/s at maximum design flood level. The control outlet works consist of six gate-controlled outlets, 7.5 by 14.5 ft, opening into two 18.0-foot-diameter concrete conduits, and two 2.5-foot gate-controlled outlets for water-supply outlets. Since February 1973, the capacity is based on a survey made in 1962. Prior to 1973, the capacity was based on a survey made in 1944. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,964.0	-
Design flood	1,958.0	690,000
Crest of spillway	1,938.5	392,700
Top of conservation pool	1,908.0	115,700
Lowest gated outlet (invert)	1,840.0	0

COOPERATION.--Records of elevations and 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, 174,100 acre-ft Oct. 14, 1957 (elevation, 1,916.47 ft); minimum since first appreciable storage, lake dry July 16, 1970, to Apr. 15, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 19,230 acre-ft Oct. 4 (elevation, 1,877.45 ft); minimum, 12,770 acre-ft Aug. 23 (elevation, 1,872.49 ft).

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

1,872.0	12,230	1,883.0	29,550	1,891.0	49,460
1,874.0	14,560	1,885.0	33,940	1,892.0	52,370
1,877.0	18,560	1,887.0	36,680	1,893.0	55,360
1,879.0	21,750	1,888.0	41,220	1,894.0	58,410
1,881.0	25,470	1,890.0	46,620		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19170	18460	18130	17770	17360	16990	16420	16170	15490	14870	13800	16560
2	19200	18460	18100	17740	17330	16990	16420	16150	15500	14840	13780	17300
3	19220	18410	18100	17740	17300	16970	16400	16130	15530	14820	13730	17730
4	19230	18390	18080	17720	17280	16940	16380	16100	15590	14780	13670	17690
5	19190	18390	18050	17670	17300	16970	16560	16100	15620	14740	13630	17720
6	19140	18390	18040	17650	17300	16910	16590	16070	15600	14700	13580	17720
7	19110	18370	18030	17620	17320	16840	16590	16050	15580	14670	13530	17690
8	19080	18370	18000	17650	17330	16830	16590	16020	15550	14620	13510	17660
9	19070	18360	17940	17630	17320	16820	16630	16000	15510	14580	13520	17620
10	19040	18360	17930	17650	17300	16800	16630	15980	15500	14530	13510	17580
11	19010	18310	17930	17630	17260	16800	16630	16020	15460	14510	13550	17540
12	18990	18280	17930	17600	17250	16800	16640	16020	15420	14470	13520	17510
13	18980	18260	17930	17620	17260	16800	16630	16000	15400	14450	13480	17510
14	18930	18230	17910	17620	17280	16780	16590	15980	15380	14430	13450	17560
15	18900	18200	17900	17590	17230	16760	16520	15940	15400	14410	13380	17970
16	18870	18180	17880	17600	17220	16750	16520	15900	15380	14380	13270	18240
17	18840	18240	17900	17650	17220	16740	16500	15860	15370	14340	13170	18310
18	18830	18280	17900	17560	17230	16680	16480	15820	15350	14290	13050	18340
19	18800	18300	17860	17550	17210	16640	16470	15790	15320	14240	12950	18360
20	18740	18280	17840	17520	17190	16630	16420	15760	15270	14200	12880	18360
21	18720	18270	17840	17490	17170	16630	16420	15720	15230	14150	12830	18330
22	18710	18280	17810	17490	17170	16630	16420	15680	15180	14120	12800	18310
23	18650	18260	17800	17510	17140	16630	16390	15640	15150	14080	12770	18280
24	18590	18240	17790	17480	17100	16600	16390	15600	15120	14040	12770	18260
25	18560	18240	17790	17480	17100	16510	16360	15560	15070	14010	12810	18260
26	18560	18240	17790	17440	17100	16480	16310	15540	15030	13980	12810	18240
27	18550	18210	17770	17400	17090	16480	16310	15500	14990	13950	13950	18170
28	18490	18170	17770	17430	17020	16480	16290	15460	14970	13950	13920	18140
29	18460	18150	17770	17400	16990	16480	16220	15440	14930	13910	14410	18100
30	18430	18140	17770	17400	---	16480	16210	15460	14890	13880	15100	18080
31	18430	---	17790	17380	---	16430	---	15490	---	13840	15820	---
MAX	19230	18460	18130	17770	17360	16990	16640	16170	15620	14870	15820	18360
MIN	18430	18140	17770	17380	16990	16430	16210	15440	14890	13840	12770	16560
(+)	1876.91	1876.71	1876.46	1876.17	1875.88	1875.46	1875.29	1874.74	1874.27	1873.41	1875.00	1876.67
(@)	-770	-290	-350	-410	-390	-560	-220	-720	-600	-1050	+1980	+2260

CAL YR 1995 MAX 23230 MIN 17770 @ -5460
WTR YR 1996 MAX 19230 MIN 12770 @ -1120

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

08136000 CONCHO RIVER AT SAN ANGELO, TX

LOCATION.--Lat 31°21'16", long 100°24'37", Tom Green County, Hydrologic Unit 12090105, on left bank 0.4 mi downstream from confluence of North and South Concho Rivers, 1.8 mi southeast of Tom Green County Courthouse, and 61.9 mi upstream from mouth.

DRAINAGE AREA.--5,542 mi², of which 1,131 mi² probably is noncontributing.

PERIOD OF RECORD.--September 1915 to current year. Prior to October 1969, published as "near San Angelo".

REVISED RECORDS.--WSP 568: 1915-16, 1919-22. WSP 1148: 1916-22(M), 1924(M), 1925-26, 1929(M), 1930-32, 1935-37. WSP 1512: 1917-18. WSP 1712: 1936. WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,776.79 ft above sea level. Prior to Aug. 11, 1917, nonrecording gage at same site and datum. Aug. 11, 1917, to May 15, 1963, water-stage recorder on right bank at same datum.

REMARKS.--No estimated daily discharges. Records good. There are many diversions upstream from station for irrigation, industrial, and municipal supply. Since December 1962, flow regulated by Twin Buttes Reservoir (station 08131200) on the South Concho River and since February 1952 by O. C. Fisher Lake (station 08134500) on the North Concho River. Several observations of water temperatures were made during the year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--47 years (water years 1916-62) prior to construction of Twin Buttes Dam, 158 ft³/s (114,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1916-62).--Maximum discharge, 230,000 ft³/s Sept. 17, 1936 (gage height, 46.6 ft, from floodmarks), from rating curve extended above 105,000 ft³/s on basis of slope-area measurements of 167,000 and 230,000 ft³/s; no flow at times in 1921, and 1952-53.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1853, 47.5 ft Aug. 6, 1906 (discharge, about 246,000 ft³/s), from information by local resident. Other large floods are known to have occurred in June 1853, August 1882, and April 1900.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	62	7.6	8.8	4.7	8.8	9.6	4.3	17	17	.02	18
2	57	15	8.9	8.6	13	8.3	12	3.4	92	12	.02	17
3	65	6.7	6.0	8.2	19	7.9	14	3.9	84	8.6	.02	17
4	27	4.8	5.9	11	11	5.6	7.7	4.1	193	12	.02	16
5	8.9	3.9	6.5	5.8	9.6	5.5	257	4.7	46	7.4	.02	16
6	6.6	5.3	5.6	4.0	5.8	9.9	91	4.6	22	2.8	.03	12
7	3.8	5.2	5.2	3.6	22	13	38	2.7	6.3	3.5	.02	14
8	2.6	4.6	5.0	3.6	13	10	21	3.2	4.8	4.0	.02	19
9	3.3	7.4	3.3	8.2	9.5	20	15	3.2	6.1	3.2	.02	4.4
10	2.9	7.8	3.7	8.5	9.4	20	5.8	18	5.5	3.9	.02	3.3
11	2.6	4.2	6.9	6.3	3.8	17	5.3	65	4.5	4.5	1.9	17
12	5.8	6.1	6.8	6.1	3.2	8.2	11	26	4.8	10	18	14
13	8.3	3.4	6.1	6.9	5.8	4.8	4.0	5.5	5.8	5.1	19	.23
14	5.2	2.0	4.6	6.8	10	7.0	4.4	3.6	5.1	12	17	5.4
15	6.9	2.7	4.7	5.2	8.1	4.1	1.8	2.9	10	23	5.6	191
16	6.4	6.8	3.9	6.1	3.9	14	8.6	2.5	9.5	16	3.2	21
17	4.1	84	6.4	6.4	4.2	21	14	3.4	5.2	3.2	18	19
18	2.7	68	14	5.6	17	4.2	20	4.3	5.1	3.4	59	12
19	3.4	27	9.4	5.6	19	2.1	8.2	4.2	4.1	2.1	24	.25
20	2.4	23	7.6	6.5	12	7.4	3.4	5.9	4.9	.05	6.9	.19
21	5.6	5.5	7.5	5.0	13	11	13	5.5	3.1	.03	1.7	.19
22	7.6	4.3	7.7	6.1	8.1	8.7	79	4.4	3.6	.02	3.7	.19
23	2.7	3.4	7.7	4.5	9.2	9.0	36	3.2	12	.02	14	.19
24	1.9	3.0	6.9	2.8	8.6	9.2	17	3.1	8.3	.02	18	.23
25	2.7	3.6	7.3	18	10	3.3	5.9	3.4	4.6	.02	58	.26
26	5.8	4.8	7.9	10	10	13	3.0	5.0	4.5	.02	67	.22
27	2.4	3.9	7.5	10	13	27	5.5	3.6	6.1	.02	27	.22
28	2.0	3.8	7.2	11	11	12	19	2.4	3.5	.02	17	.21
29	2.7	3.4	7.4	8.0	8.8	5.4	17	29	5.3	.02	164	.18
30	3.2	5.8	9.8	7.1	---	4.4	11	76	5.7	.02	38	.16
31	28	---	10	3.9	---	4.1	---	102	---	.02	19	---
TOTAL	302.5	391.4	215.0	218.2	295.7	305.9	758.2	413.0	592.4	153.98	600.21	418.82
MEAN	9.76	13.0	6.94	7.04	10.2	9.87	25.3	13.3	19.7	4.97	19.4	14.0
MAX	65	84	14	18	22	27	257	102	193	23	164	191
MIN	1.9	2.0	3.3	2.8	3.2	2.1	1.8	2.4	3.1	.02	.02	.16
AC-FT	600	776	426	433	587	607	1500	819	1180	305	1190	831

08136000 CONCHO RIVER AT SAN ANGELO, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1996#, BY WATER YEAR (WY)

MEAN	22.2	21.7	18.0	14.8	19.4	11.7	22.1	46.9	22.1	16.0	14.5	27.1
MAX	210	434	274	195	213	58.6	315	444	88.0	66.4	72.9	183
(WY)	1975	1975	1975	1975	1975	1975	1977	1975	1992	1977	1977	1980
MIN	.12	.11	.095	.055	.062	.050	.067	.083	.090	.069	.15	.86
(WY)	1965	1971	1974	1974	1971	1971	1972	1971	1971	1969	1985	1968

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1963 - 1996#	
ANNUAL TOTAL	8068./		4665.31			
ANNUAL MEAN	22.1		12.7		21.4	
HIGHEST ANNUAL MEAN					169	1975
LOWEST ANNUAL MEAN					2.10	1964
HIGHEST DAILY MEAN	640	May 28	257	Apr 5	3010	Oct 31 1974
LOWEST DAILY MEAN	1.9	Jul 30	.02	Jul 22	.00	Apr 30 1965
ANNUAL SEVEN-DAY MINIMUM	2.9	Oct 23	.02	Jul 22	.02	Apr 9 1971
INSTANTANEOUS PEAK FLOW			442	Jun 2	11500	Sep 9 1980
INSTANTANEOUS PEAK STAGE			3.31	Jun 2	14.37	Sep 9 1980
ANNUAL RUNOFF (AC-FT)	16000		9250		15480	
10 PERCENT EXCEEDS	39		21		38	
50 PERCENT EXCEEDS	9.3		6.1		5.2	
90 PERCENT EXCEEDS	3.9		1.8		.10	

Period of regulated streamflow.

08136500 CONCHO RIVER AT PAINT ROCK, TX

LOCATION.--Lat 31°30'57", long 99°55'09", Concho County, Hydrologic Unit 12090105, near left bank at downstream end of pier of bridge on U.S. Highway 83, 0.5 mi north of Concho County Courthouse in Paint Rock, 2.7 mi downstream from Kickapoo Creek, and 20.0 mi upstream from mouth.

DRAINAGE AREA.--6,574 mi², of which 1,131 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1915 to current year. Prior to October 1970, published as "near Paint Rock".

REVISED RECORDS.--WSP 458: 1915-16. WSP 568: 1919-20. WSP 1712: 1922(M). WSP 1732: 1918(M), 1923(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder with concrete control. Datum of gage is 1,574.36 ft above sea level. See WSP 1922 for history of changes prior to Jan. 15, 1940.

REMARKS.--No estimated daily discharges. Records good. There are many diversions above station for irrigation and municipal supply. Regulation is the same as that for Concho River at San Angelo (station 08136000). Flow affected at times by discharge from the flood-detention pools of two floodwater-retarding structures with a combined detention capacity of 2,690 acre-ft. These structures control runoff from 16.5 mi² in the Willow Creek drainage basin. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--47 years (water years 1916-62) prior to construction of Twin Buttes Dam, 210 ft³/s (152,100 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1916-62).--Maximum discharge, 301,000 ft³/s Sept. 17, 1936 (gage height, 43.4 ft, from floodmarks), from rating curve extended above 98,000 ft³/s on basis of slope-area measurements of 144,000 and 301,000 ft³/s; no flow at times. Maximum stage since at least 1853, that of Sept. 17, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1882 reached a stage of about 39.9 ft, and flood in August 1906 reached a stage of 39.5 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	38	40	31	40	28	13	11	59	.09	.00	53
2	38	59	41	37	47	27	11	18	59	.10	.00	32
3	47	80	39	38	45	20	7.8	18	96	.11	.00	26
4	97	55	37	36	43	18	3.8	15	391	.12	.00	24
5	80	49	37	34	50	15	50	8.3	371	.08	.00	33
6	56	46	38	34	49	12	281	5.1	107	.04	.00	56
7	45	44	38	36	44	9.2	215	3.0	57	.02	.00	33
8	38	42	37	36	41	8.3	85	.96	42	.01	.00	27
9	35	40	38	36	41	5.8	57	.66	29	.00	.00	21
10	35	42	37	33	47	6.3	40	1.5	22	.02	.00	23
11	36	41	38	29	39	11	32	109	18	.04	.00	22
12	35	42	39	27	34	12	25	111	13	.09	.00	16
13	31	45	38	29	33	12	18	71	16	.07	.28	16
14	28	42	36	30	33	9.5	15	39	16	.05	5.5	21
15	28	41	37	31	26	7.3	16	28	11	.05	2.8	59
16	33	41	36	31	20	3.7	16	19	9.6	.03	1.9	145
17	34	48	33	35	22	.71	15	14	7.3	.01	3.5	88
18	31	64	34	34	20	.09	12	11	8.3	.00	6.6	41
19	30	146	38	36	18	.07	10	9.7	11	.00	2.4	30
20	29	87	38	38	15	.06	8.3	9.2	6.7	.00	.82	27
21	27	65	40	38	17	.11	6.2	8.1	3.4	.00	.47	22
22	25	61	40	36	25	.46	11	7.3	1.3	.00	.29	17
23	27	52	40	33	21	.59	14	5.4	.39	.00	2.4	14
24	26	46	40	33	16	.15	58	5.0	.35	.00	3.6	13
25	33	41	41	36	17	.28	42	2.6	.23	.00	2.7	12
26	35	39	42	37	19	.28	29	2.2	.22	.00	31	15
27	31	38	43	35	20	.95	20	2.2	.21	.00	72	13
28	30	37	40	41	18	4.3	15	2.2	.20	.00	53	12
29	33	36	35	43	20	5.3	12	1.6	.15	.00	67	9.7
30	35	37	33	43	---	13	11	.96	.18	.00	109	11
31	36	---	28	40	---	15	---	2.6	---	.00	138	---
TOTAL	1162	1544	1171	1086	880	246.45	1149.1	542.58	1356.53	0.93	503.26	931.7
MEAN	37.5	51.5	37.8	35.0	30.3	7.95	38.3	17.5	45.2	.030	16.2	31.1
MAX	97	146	43	43	50	28	281	111	391	.12	138	145
MIN	25	36	28	27	15	.06	3.8	.66	.15	.00	.00	9.7
AC-FT	2300	3060	2320	2150	1750	489	2280	1080	2690	1.8	998	1850

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1996#, BY WATER YEAR (WY)

MEAN	58.9	59.4	56.3	52.7	68.9	44.8	54.0	124	80.6	35.6	44.7	107
MAX	242	615	367	274	740	318	494	823	741	175	287	1546
(WY)	1982	1975	1975	1975	1992	1992	1977	1975	1992	1992	1971	1980
MIN	.000	.000	.000	.000	.63	1.06	.77	.057	.000	.000	.10	.000
(WY)	1966	1966	1966	1966	1967	1967	1967	1984	1967	1966	1965	1965

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1963 - 1996#	
ANNUAL TOTAL	25117.2		10573.55			
ANNUAL MEAN	68.8		28.9		65.4	
HIGHEST ANNUAL MEAN					261	1992
LOWEST ANNUAL MEAN					14.0	1964
HIGHEST DAILY MEAN	3350	May 29	391	Jun 4	23800	Sep 9 1980
LOWEST DAILY MEAN	1.2	Jul 30	.00	Jul 9	.00	Nov 5 1963
ANNUAL SEVEN-DAY MINIMUM	3.4	Jul 26	.00	Jul 18	.00	Nov 5 1963
INSTANTANEOUS PEAK FLOW			847	Jun 4	46600	Sep 9 1980
INSTANTANEOUS PEAK STAGE			13.93	Jun 4	28.25	Sep 9 1980
ANNUAL RUNOFF (AC-FT)	49820		20970		47400	
10 PERCENT EXCEEDS	83		52		108	
50 PERCENT EXCEEDS	37		25		30	
90 PERCENT EXCEEDS	19		.06		.79	

Period of regulated streamflow.

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1946 to October 1949. Chemical and biochemical analyses: March 1964 to current year. Pesticide analyses: April 1968 to October 1981. Sediment analyses: February 1978 to September 1981.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1946 to October 1949, October 1967 to September 1990.
WATER TEMPERATURE: April 1946 to October 1949, October 1967 to September 1990.
SUSPENDED SEDIMENT DISCHARGE: February 1978 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,690 microsiemens June 28, Aug. 12, 1984; minimum daily, 268 microsiemens Sept. 9, 1980.
WATER TEMPERATURE: Maximum daily, 35.0°C on several days during summer months; minimum daily, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATION: Maximum daily mean, 4,190 mg/L Sept. 9, 1980; minimum daily mean, 3 mg/L Feb. 2, 1979.
SEDIMENT LOAD: Maximum daily, 269,000 tons Sept. 9, 1980; minimum daily, 0.0 tons on several days during September 1980.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
DEC 01...	0952	41	2350	8.0	11.0	10.8	105	1.0	760	570
JAN 31...	1120	38	2720	8.2	7.5	11.3	101	--	890	700
APR 11...	1015	31	2290	8.1	19.0	8.9	104	2.7	630	440
MAY 14...	1120	38	2170	8.1	26.0	7.5	100	2.5	670	500
JUN 20...	1200	7.2	1440	8.2	33.0	8.4	125	3.6	380	250
AUG 28...	1048	49	1860	7.9	27.5	6.7	91	3.8	660	570

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
DEC 01...	170	81	210	3	4.8	190	290	470	0.50	16
JAN 31...	200	95	230	3	4.4	190	360	540	0.50	16
APR 11...	130	75	240	4	5.5	190	250	490	0.60	9.5
MAY 14...	150	72	210	4	5.0	170	270	450	0.70	18
JUN 20...	78	45	135	3	5.7	140	150	290	0.50	20
AUG 28...	150	69	140	2	6.0	84	440	310	0.50	23

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
DEC 01...	1420	14.0	14.0	0.020	14.0	14.0	<0.015	--	0.40	0.010
JAN 31...	1650	21.0	21.0	0.040	21.0	21.0	<0.015	--	0.30	<0.010
APR 11...	1330	3.78	3.78	0.020	3.80	3.80	0.020	0.58	0.60	<0.010
MAY 14...	1300	6.03	6.03	0.070	6.10	6.10	<0.015	--	0.50	<0.010
JUN 20...	809	0.320	0.320	0.020	0.340	0.340	0.030	0.37	0.40	<0.010
AUG 28...	1190	0.190	0.190	0.020	0.210	0.210	0.050	0.45	0.50	<0.010

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
DEC										
01...	<0.010	--	--	--	--	--	--	--	--	--
JAN										
31...	<0.010	2	100	--	<1.0	<1.0	--	<1.0	<10	<1.0
APR										
11...	<0.010	--	--	--	--	--	--	--	--	--
MAY										
14...	<0.010	--	--	--	--	--	--	--	--	--
JUN										
20...	<0.010	11	120	<0.50	<1.0	<5.0	<3.0	<10	4.0	10
AUG										
28...	<0.010	--	--	--	--	--	--	--	--	--

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
DEC										
01...	--	--	--	--	--	--	--	--	--	--
JAN										
31...	--	10	0.1	--	--	6	<1.0	--	--	<10
APR										
11...	--	--	--	--	--	--	--	--	--	--
MAY										
14...	--	--	--	--	--	--	--	--	--	--
JUN										
20...	36	<1.0	<0.1	10	<10	1	<1.0	1800	13	<3.0
AUG										
28...	--	--	--	--	--	--	--	--	--	--

08136600 O.H. IVIE RESERVOIR NEAR VOSS, TX

LOCATION.--Lat 31°30'00", long 99°40'05", Coleman County, Hydrologic Unit 12090106, on left bank, in outlet structure of Freese-Nichols Dam on Colorado River, 8 mi northeast of Millersview, 10 mi southwest of Voss, and at mile 615.1.

DRAINAGE AREA.--24,038 mi², of which 11,391 mi² probably is noncontributing.

PERIOD OF RECORD.--September 1990 to current year.

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

REMARKS.--The lake is formed by a concrete dam and spillway with six 50- by 40-foot tainter gates, and a 6,000 ft overflow spillway with a 2,000 ft tapered fuse plug release feature. Total length of the dam is 12,000 ft. The dam was completed and storage began March 15, 1990. Recording equipment was installed May 30, 1990, but water did not reach the sensing point until September 21, 1990 (at an elevation of 1,502.05 ft). Water is utilized for municipal use for several West Texas communities, the city of San Angelo being the largest user. The capacity curve is based on a survey made in 1989 by Freese and Nichols, Fort Worth, Tex. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,584.0	-
Crest of overflow spillway	1,563.0	806,800
Top of conservation storage	1,551.5	554,300
Crest of spillway (tainter gates sill)	1,528.0	216,100
Lowest gated outlet (service outlet)	1,440.0	90

COOPERATION.--The capacity table was furnished by the Colorado River Municipal Water District, and based on a survey made in 1989 by Freese and Nichols, Consulting Engineers, Fort Worth, Texas.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 557,600 acre-ft Sept. 1, 1992 (elevation, 1,551.67 ft); minimum recorded, 57,780 acre-ft Sept. 21, 1990 (elevation, 1,502.05 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 544,000 acre-ft Oct. 2, 3 at 2200 hours (elevation, 1,550.96 ft); minimum, 377,900 acre-ft Aug. 25 (elevation, 1,541.11 ft).

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

1,502.0	57,610	1,525.0	187,600	1,540.0	361,600
1,515.0	114,900	1,530.0	236,800	1,545.0	438,600
1,520.0	147,300	1,535.0	294,500	1,552.0	563,900

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	543400	533300	530100	525500	521300	517200	509000	514800	495700	400400	386900	387000
2	544000	533300	530100	525300	520500	517200	508400	515400	493500	400000	386300	387000
3	543800	532400	530100	524600	520300	516900	508400	515900	491900	399200	385500	386700
4	543100	532000	529800	524400	519800	516100	509500	515900	491400	399200	384900	386700
5	543300	532000	529800	524400	519800	516500	511200	516300	489600	398700	384000	388200
6	542900	532200	529600	523800	519800	516700	511200	515900	484700	398100	383600	389000
7	542300	532400	528500	523600	520000	515400	511700	515900	477500	397500	382800	389600
8	541900	531800	528800	523500	520300	515000	512100	515000	469200	396900	382400	390400
9	541900	531500	528300	523500	520300	514700	512100	514500	460700	396000	382400	390400
10	541800	532000	527500	523500	520900	514300	512100	513900	452600	395800	382400	390400
11	541600	531100	527500	524200	520700	513700	512100	513600	444600	395200	382800	390400
12	541400	530500	527500	523500	520700	513700	512600	513200	437000	396100	382700	390400
13	540600	530500	527500	523500	520500	513700	512100	511700	429000	396100	382700	390700
14	540600	530100	527500	523500	520300	513900	511900	511500	421600	395700	381900	391000
15	540300	530000	527500	523500	520200	513900	511400	510600	415300	395400	381500	411600
16	539500	529800	527300	523500	520000	513700	511000	509700	409900	394900	380900	426900
17	538900	530900	527300	523300	520000	513200	510600	507900	406300	394600	380600	431800
18	538900	530900	527900	523100	519600	512800	510600	506300	405800	394100	380600	434900
19	538200	530900	527100	522400	519600	512100	510400	505700	405800	393500	379500	437000
20	537800	531100	526400	522400	519600	511900	509700	505200	405500	393000	379500	438600
21	537100	531100	526200	522400	519600	511500	509700	505000	405200	392600	379100	439200
22	536300	531300	526200	522400	519200	511000	511400	503900	404100	392100	378000	440100
23	536500	531300	525800	522700	519100	510600	511400	503200	404000	391400	378000	440700
24	535400	531300	525800	522500	518500	511000	512300	500500	403300	390600	378000	441400
25	535200	531300	525800	522400	518500	509900	513400	498900	402900	390100	378300	441400
26	535200	530900	525800	522400	518500	509700	513400	498000	402400	389800	379100	442900
27	535000	530700	525700	521600	518100	509700	513900	496600	402100	388500	379100	442600
28	534300	530300	525300	521400	518000	509700	514800	495000	401700	388500	382100	442600
29	533500	530300	524600	521800	517400	509700	514700	491900	401200	388500	384500	442600
30	533300	530100	525100	521800	---	509900	514700	491000	400900	387800	386000	442400
31	533100	---	525100	520900	---	509300	---	496900	---	386900	387000	---
MAX	544000	533300	530100	525500	521300	517200	514800	516300	495700	400400	387000	442900
MIN	533100	529800	524600	520900	517400	509300	508400	491000	400900	386900	378000	386700
(+)	1550.38	1550.22	1549.95	1549.72	1549.53	1549.09	1549.38	1548.40	1542.63	1541.71	1541.72	1545.23
(@)	-10300	-3000	-5000	-4200	-3500	-8100	+5400	-17800	-96000	-14000	+100	+55400

CAL YR 1995 MAX 552200 MIN 523600 (@) -200
WTR YR 1996 MAX 544000 MIN 378000 (@) -101000

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

08136700 COLORADO RIVER NEAR STACY, TX

LOCATION.--Lat 31°29'37", long 99°34'25", Coleman County, Hydrologic Unit 12090106, on left bank at downstream side of bridge on Farm Road 503, 1.2 mi upstream from Bois d'Arc Creek, 1.8 mi northeast of Stacy, 10.5 mi downstream from O.H. Ivie Reservoir, 24 mi downstream from Concho River, and at mile 604.8.

DRAINAGE AREA.--24,193 mi², approximately, of which 11,391 mi² probably is noncontributing.

PERIOD OF RECORD.--March 1968 to current year. Prior to October 1970, published as "at Stacy".
Water-quality records.--Chemical analyses: December 1961 to September 1994. Chemical and biochemical analyses: October 1974 to october 1977. Pesticide analyses: April 1975 to August 1977. Sediment analyses: October 1974 to October 1977.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,394.66 ft above sea level (State Department of Highways and Public Transportation bridge plans).

REMARKS.--No estimated daily discharges. Records good. There are many diversions above station for irrigation, municipal, and oil field operations. Wastewater effluent is returned to the river from numerous wastewater plants above station. Flow affected by upstream reservoirs (see stations 08126380 and 08136000), and since March 15, 1990, flow completely regulated by O.H. Ivie Reservoir (station 08136600), 10.5 mi upstream. At times flow may be slightly affected by discharge from the flood-detention pools of 42 floodwater-retarding structures with a combined detention capacity of 56,730 acre-ft. These structures control runoff from 277 mi² above this station. Radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1882, 356,000 ft³/s Sept. 18, 1936 (gage height, 64.59 ft), by slope-area measurement of peak flow. The flood of Sept. 18, 1936, was 4 ft higher than the 1906 flood and 7 to 8 ft higher than the 1882 flood, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

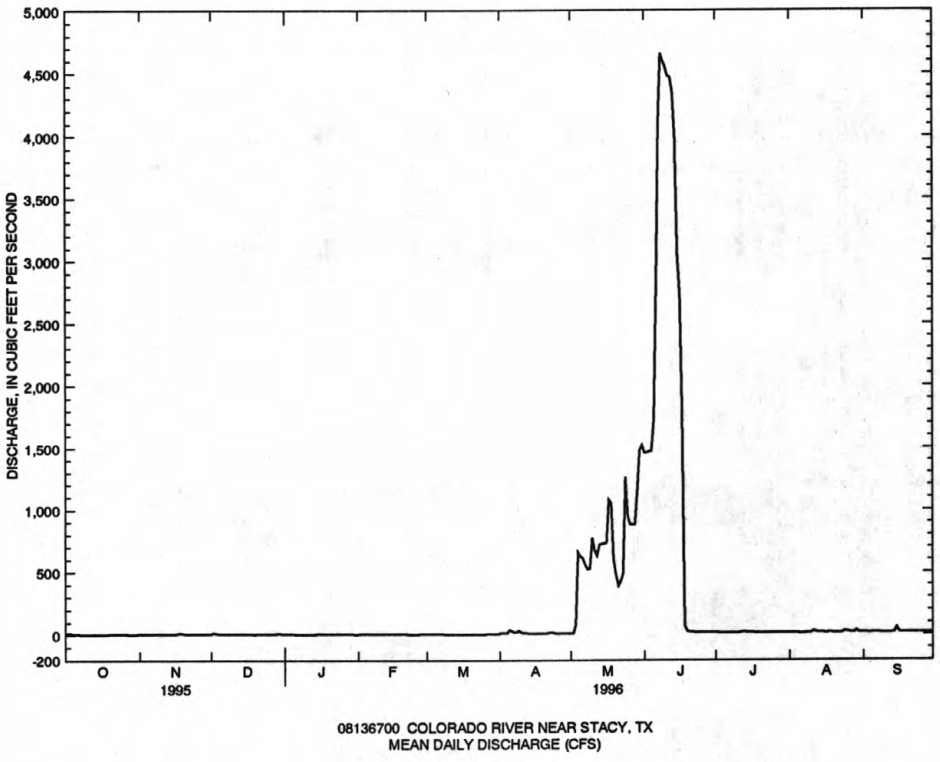
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	6.8	9.3	7.0	6.1	6.5	14	13	1460	19	16	19
2	14	6.8	17	6.8	6.5	6.5	14	13	1460	17	16	18
3	15	6.8	12	6.8	6.8	6.5	14	86	1470	16	16	17
4	7.5	6.8	8.6	6.5	6.8	6.5	16	659	1470	16	15	16
5	8.5	6.8	8.2	6.1	6.8	6.5	41	627	1730	16	13	19
6	8.1	6.8	8.0	6.1	6.8	6.5	31	610	2790	16	13	21
7	5.1	6.8	8.0	6.1	6.8	6.3	21	558	4090	16	13	18
8	4.9	6.8	8.0	6.1	6.8	6.1	23	525	4660	16	14	17
9	4.9	7.3	8.0	6.1	6.8	6.1	34	528	4600	16	17	15
10	4.9	7.6	8.0	6.1	6.8	6.1	18	776	4550	16	17	15
11	4.9	7.6	8.0	6.1	6.5	6.1	16	672	4480	17	30	15
12	5.1	7.6	8.0	6.1	6.5	6.1	15	631	4470	21	22	15
13	5.3	7.6	8.0	6.1	6.5	6.1	13	720	4360	23	19	17
14	5.1	7.6	8.0	6.1	6.5	6.1	13	726	4000	20	19	18
15	4.9	7.6	8.0	6.3	6.5	6.1	13	730	3060	19	18	55
16	5.1	7.6	8.0	6.5	6.5	6.1	13	735	2730	18	16	22
17	5.7	11	8.0	6.5	6.5	6.1	13	1080	1790	17	17	19
18	5.5	16	7.6	6.5	6.5	5.1	13	1050	73	17	18	19
19	6.0	12	5.8	6.5	6.5	5.0	13	595	28	17	17	19
20	6.4	8.3	6.1	6.5	6.5	5.5	13	472	24	17	16	19
21	8.0	8.0	6.5	6.5	6.3	5.5	13	392	22	17	16	19
22	8.3	7.6	6.5	6.5	6.1	5.2	20	426	21	17	16	19
23	7.2	7.2	6.7	6.5	6.1	4.9	20	494	21	17	16	19
24	7.7	7.2	6.8	6.5	6.1	5.2	14	1260	21	16	29	18
25	9.5	7.2	6.8	6.5	6.1	5.2	12	949	21	16	27	18
26	6.5	7.2	6.8	6.5	6.1	5.3	12	881	21	16	23	19
27	6.1	7.2	6.8	6.5	6.1	7.4	13	881	21	16	20	20
28	6.1	7.2	6.8	6.5	6.4	8.4	13	883	20	16	20	19
29	6.1	7.2	12	6.3	6.5	7.3	13	1160	19	16	32	19
30	6.1	7.2	11	6.1	---	6.2	13	1480	19	16	21	19
31	6.1	---	7.8	6.1	---	6.9	---	1520	---	16	19	---
TOTAL	217.6	235.4	255.1	197.4	187.8	189.4	504	22132	53501	529	581	582
MEAN	7.02	7.85	8.23	6.37	6.48	6.11	16.8	714	1783	17.1	18.7	19.4
MAX	15	16	17	7.0	6.8	8.4	41	1520	4660	23	32	55
MIN	4.9	6.8	5.8	6.1	6.1	4.9	12	13	19	16	13	15
AC-FT	432	467	506	392	373	376	1000	43900	106100	1050	1150	1150

08136700 COLORADO RIVER NEAR STACY, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1996, BY WATER YEAR (WY)

MEAN	243	132	113	114	117	152	149	365	395	118	188	299
MAX	1475	1344	562	470	666	732	873	1440	1783	623	1516	2953
(WY)	1987	1975	1975	1975	1975	1987	1977	1987	1996	1987	1978	1980
MIN	7.02	7.61	7.80	6.16	6.48	6.11	.41	.000	.000	.000	2.24	.000
(WY)	1996	1992	1995	1995	1996	1996	1986	1984	1984	1974	1983	1983

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1968 - 1996	
ANNUAL TOTAL	14431.7		79111.7			
ANNUAL MEAN	39.5		216		197	
HIGHEST ANNUAL MEAN					719	1987
LOWEST ANNUAL MEAN					24.6	1984
HIGHEST DAILY MEAN	1750	Jun 4	4660	Jun 8	31300	Sep 10 1980
LOWEST DAILY MEAN	4.0	Mar 23	4.9	Oct 8	.00	Jun 22 1974
ANNUAL SEVEN-DAY MINIMUM	4.5	Mar 19	5.0	Oct 7	.00	Jun 22 1974
INSTANTANEOUS PEAK FLOW			4790	Jun 7	45000	Sep 10 1980
INSTANTANEOUS PEAK STAGE			10.65	Jun 7	28.00	Sep 10 1980
ANNUAL RUNOFF (AC-FT)	28630		156900		143000	
10 PERCENT EXCEEDS	28		615		406	
50 PERCENT EXCEEDS	11		13		52	
90 PERCENT EXCEEDS	5.5		6.1		7.2	



08136700 COLORADO RIVER NEAR STACY, TX
MEAN DAILY DISCHARGE (CFS)

08141000 HORDS CREEK LAKE NEAR VALERA, TX

LOCATION.--Lat 31°49'58", long 99°33'38", Coleman County, Hydrologic Unit 12090108, at outlet-works structure near right end of dam on Hords Creek, 5.6 mi north of Valera, and 8.8 mi west of Coleman.

DRAINAGE AREA.--48 mi², approximately.

PERIOD OF RECORD.--April 1948 to current year. Prior to October 1970, published as Hords Creek Reservoir.

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

REMARKS.--The lake is formed by a rolled earthfill dam 6,800 ft long, including spillway. Deliberate impoundment of water began Apr. 7, 1948, and the dam was completed in June 1948. The spillway is an excavated channel through natural ground, 500 ft wide, located about 600 ft from the right end of dam. The spillway consists of three concrete conduits; two controlled by 5.0- by 6.0-foot slide gates, and a third uncontrolled ogee spillway 4.0 ft wide and 19.5 ft high. The lake is operated for flood control and municipal water supply for the city of Coleman. The capacity table of August 1974 is based on a sedimentation survey made in 1948. Flow is affected at times by discharge from the flood-detention pool of one floodwater-retarding structure with a detention capacity of 1,370 acre-ft. This structure controls runoff from 6.82 mi² in the Jim Ned Creek drainage basin. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,939.0	-
Design flood	1,933.6	-
Crest of spillway	1,920.0	24,730
Crest of spillway (top of conservation pool)	1,900.0	8,110
Lowest gated outlet (invert)	1,856.0	3

COOPERATION.--Records of elevations and contents furnished by U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 12,790 acre-ft May 1, 1956 (elevation 1906.86 ft); maximum elevation, Mar. 4, 1992 (elevation, 1907.31 ft); minimum since first appreciable storage in June 1951, 1,550 acre-ft Sept. 2, 1984 (elevation, 1878.01 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 7,010 acre-ft Sep. 15 (elevation, 1897.69 ft); minimum, 5,370 acre-ft May 28 (elevation, 1893.67 ft).

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

1878.0	1,550	1888.0	3,600	1900.0	8,110
1882.0	2,240	1892.0	4,780	1904.0	10,360
1885.0	2,850	1896.0	6,280	1908.0	13,050

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6870	6630	6480	6330	6170	6010	5790	5630	6400	6070	5840	5680
2	6890	6610	6480	6330	6170	6000	5780	5620	6390	6060	5830	5680
3	6880	6600	6470	6320	6170	5980	5770	5620	6400	6040	5810	5670
4	6880	6600	6470	6320	6170	5980	5800	5610	6400	6030	5780	5660
5	6860	6600	6460	6310	6160	5970	5870	5610	6390	6010	5760	5660
6	6850	6590	6450	6310	6160	5960	5850	5600	6380	6000	5750	5660
7	6840	6580	6450	6300	6160	5940	5860	5590	6380	5980	5730	5660
8	6830	6570	6440	6290	6160	5930	5860	5580	6370	5960	5730	5660
9	6820	6570	6430	6290	6150	5920	5840	5580	6350	5940	5730	5650
10	6810	6560	6420	6290	6140	5910	5830	5570	6340	5930	5720	5640
11	6810	6560	6420	6280	6140	5900	5820	5570	6330	5940	5730	5630
12	6800	6540	6410	6270	6140	5900	5830	5560	6330	5950	5710	5620
13	6790	6530	6410	6270	6130	5890	5830	5550	6320	5950	5710	5640
14	6780	6530	6400	6260	6130	5890	5860	5540	6310	6070	5700	6480
15	6770	6530	6400	6260	6120	5890	5790	5540	6290	6060	5680	7010
16	6760	6520	6400	6260	6110	5890	5760	5530	6280	6050	5680	7010
17	6750	6560	6400	6260	6110	5890	5760	5510	6270	6040	5670	7010
18	6740	6560	6390	6250	6100	5880	5760	5490	6260	6020	5660	7000
19	6730	6560	6380	6240	6100	5860	5770	5490	6240	6010	5650	7000
20	6720	6550	6380	6240	6090	5850	5730	5490	6230	5990	5640	6980
21	6700	6540	6380	6230	6090	5840	5730	5490	6210	5980	5630	6970
22	6700	6540	6370	6230	6080	5830	5730	5490	6190	5960	5620	6970
23	6680	6540	6370	6230	6080	5830	5720	5490	6180	5950	5620	6960
24	6670	6530	6370	6220	6070	5870	5710	5490	6170	5930	5630	6960
25	6660	6520	6360	6220	6070	5850	5700	5490	6150	5920	5640	6950
26	6660	6520	6350	6210	6060	5820	5680	5390	6150	5910	5640	6960
27	6650	6510	6350	6200	6040	5850	5680	5380	6130	5900	5640	6940
28	6630	6500	6340	6200	6020	5830	5700	5370	6110	5890	5650	6930
29	6630	6490	6340	6190	6020	5810	5650	5370	6100	5870	5680	6920
30	6620	6490	6340	6190	---	5860	5630	5530	6090	5870	5680	6910
31	6630	---	6330	6180	---	5810	---	6410	---	5850	5690	---
MAX	6890	6630	6480	6330	6170	6010	5870	6410	6400	6070	5840	7010
MIN	6620	6490	6330	6180	6020	5810	5630	5370	6090	5850	5620	5620
(+)	1896.83	1896.50	1896.12	1895.76	1895.37	1894.83	1894.37	1896.31	1895.54	1894.94	1894.52	1897.46
(@)	-250	-140	-160	-150	-160	-210	-180	+780	-320	-240	-160	+1220

CAL YR 1995 MAX 7190 MIN 6310 @ -260
WTR YR 1996 MAX 7010 MIN 5370 @ +30

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

08143600 PECAN BAYOU NEAR MULLIN, TX

LOCATION.--Lat 31°31'02", long 98°44'25", Mills County, Hydrologic Unit 12090107, on right bank 44 ft downstream from bridge on Farm Road 573, 0.6 mi downstream from Blanket Creek, 5.5 mi southwest of Mullin, and 13.6 mi upstream from mouth.

DRAINAGE AREA.--2,073 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,202.93 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Flow affected by Lake Brownwood (capacity, 143,400 acre-ft) 45 miles upstream. In addition, flow from 152 mi² (from an intervening drainage area of 641 mi²) above this station and below Lake Brownwood was partly controlled by 41 floodwater-retarding structures, with a combined detention capacity of 43,420 acre-ft below the flood-spillway crests. Radio telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	14	13	13	12	5.2	7.3	7.2	181	7.0	4.5	56
2	18	16	13	13	13	4.7	6.6	7.2	55	4.5	6.5	35
3	17	21	13	13	13	4.5	5.8	7.2	31	3.4	6.1	27
4	18	20	14	13	12	4.5	4.8	6.3	70	2.1	5.3	26
5	19	19	14	13	12	4.9	227	7.2	187	1.5	3.9	18
6	17	16	14	12	12	5.1	295	182	64	1.2	3.4	14
7	16	17	13	12	11	4.1	131	119	180	.87	1.1	16
8	15	18	13	12	11	3.9	59	37	165	1.0	.64	22
9	15	16	13	12	11	3.7	38	22	60	1.2	3.2	26
10	15	15	12	12	11	3.6	29	17	30	1.1	16	26
11	15	15	12	12	11	3.4	24	14	21	1.1	21	14
12	16	14	12	12	11	4.9	21	14	18	6.7	31	10
13	15	14	12	12	11	5.1	20	10	15	14	22	8.9
14	13	14	12	12	11	9.5	15	12	13	11	11	8.3
15	13	14	12	12	11	3.1	13	11	10	23	5.5	153
16	13	14	12	12	10	2.4	12	11	9.0	14	3.2	152
17	12	25	16	13	10	2.7	11	11	8.7	7.8	2.7	72
18	12	133	18	16	9.7	2.9	11	7.9	7.8	6.6	2.4	38
19	12	66	18	16	9.6	4.5	11	11	5.7	6.2	6.1	180
20	11	35	17	16	10	3.8	10	11	5.1	6.3	7.7	752
21	11	25	16	16	10	3.0	10	6.7	4.1	5.0	6.7	806
22	10	20	14	15	9.6	3.2	10	5.3	3.3	4.5	5.8	729
23	9.9	18	13	14	9.4	3.3	16	4.6	4.0	3.8	4.7	621
24	11	16	13	13	8.5	3.5	26	3.9	4.5	3.5	28	533
25	11	15	13	13	8.5	3.7	17	4.9	4.3	2.8	19	456
26	11	15	13	13	8.1	4.7	13	3.1	5.4	1.9	12	398
27	11	15	13	12	6.9	5.5	11	2.5	6.8	1.7	8.5	396
28	10	15	13	12	6.6	7.7	11	2.4	31	1.5	8.6	326
29	10	14	13	12	6.0	21	10	4.9	15	1.7	2590	291
30	10	13	12	12	---	16	7.9	17	11	2.5	440	268
31	11	---	12	12	---	11	---	25	---	2.7	133	---
TOTAL	416.9	682	418	402	295.9	169.1	1083.4	605.3	1225.7	152.17	3419.54	6478.2
MEAN	13.4	22.7	13.5	13.0	10.2	5.45	36.1	19.5	40.9	4.91	110	216
MAX	19	133	18	16	13	21	295	182	187	23	2590	806
MIN	9.9	13	12	12	6.0	2.4	4.8	2.4	3.3	.87	.64	8.3
AC-FT	827	1350	829	797	587	335	2150	1200	2430	302	6780	12850

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1996, BY WATER YEAR (WY)

MEAN	162	87.1	210	158	231	217	237	303	291	35.6	27.7	88.1
MAX	987	1227	4741	1965	4416	2361	3510	1975	1841	330	195	980
(WY)	1975	1975	1992	1968	1992	1992	1990	1994	1986	1982	1971	1991
MIN	.59	4.79	3.90	4.57	6.55	5.45	3.63	.12	.000	.000	.000	.79
(WY)	1989	1989	1984	1986	1983	1996	1984	1984	1984	1974	1980	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1968 - 1996	
ANNUAL TOTAL	55686.0		15348.21			
ANNUAL MEAN	153		41.9		170	
HIGHEST ANNUAL MEAN					1245	1992
LOWEST ANNUAL MEAN					9.01	1984
HIGHEST DAILY MEAN	5810	Apr 4	2590	Aug 29	37000	Apr 27 1990
LOWEST DAILY MEAN	4.6	Mar 12	.64	Aug 8	.00	Jun 29 1974
ANNUAL SEVEN-DAY MINIMUM	6.2	Sep 3	1.1	Jul 5	.00	Jun 29 1974
INSTANTANEOUS PEAK FLOW			7000	Aug 29	38300	Apr 27 1990
INSTANTANEOUS PEAK STAGE			19.20	Aug 29	42.15	Apr 27 1990
ANNUAL RUNOFF (AC-FT)	110500		30440		123200	
10 PERCENT EXCEEDS	335		38		253	
50 PERCENT EXCEEDS	40		12		14	
90 PERCENT EXCEEDS	10		3.5		2.7	

08143600 PECAN BAYOU NEAR MULLIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1991. Chemical and biochemical analyses: October 1991 to August 1996 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to September 1991.
WATER TEMPERATURES: October 1967 to September 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,230 microsiemens May 14, 1978; minimum daily, 158 microsiemens Apr. 26, 1990.
WATER TEMPERATURES: Maximum daily, 37.0°C July 18, 1979; minimum daily, 0.5°C Feb. 7, 1979.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)
NOV 29...	1240	14	954	8.2	10.5	10.1	95	2.0	300	110	74
JAN 31...	1410	12	1310	8.4	6.5	--	--	--	400	130	100
APR 10...	0947	31	574	7.8	16.5	6.1	66	3.5	220	70	45
MAY 14...	1605	12	1080	8.0	25.0	6.6	85	3.6	310	110	78
JUN 18...	1315	7.7	520	7.8	28.5	7.1	96	2.9	170	30	46
AUG 28...	1335	8.8	871	8.3	26.5	7.5	98	3.8	190	93	42

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV 29...	29	81	2	7.3	190	85	120	0.40	7.6	537
JAN 31...	36	110	2	7.0	270	140	180	0.50	1.0	761
APR 10...	25	37	1	5.9	150	50	59	0.20	5.7	319
MAY 14...	28	100	2	7.9	200	110	160	0.50	8.3	629
JUN 18...	13	35	1	6.2	140	42	52	0.30	11	290
AUG 28...	21	92	3	7.9	98	100	140	0.40	5.7	469

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)
NOV 29...	3.86	3.86	0.040	3.90	3.90	<0.015	--	0.40	0.430	0.420
JAN 31...	4.76	4.76	0.040	4.80	4.80	<0.015	--	0.60	0.400	0.350
APR 10...	0.780	0.780	0.050	0.830	0.830	0.260	0.54	0.80	0.250	0.230
MAY 14...	3.41	3.41	0.190	3.60	3.60	0.130	0.57	0.70	0.230	0.230
JUN 18...	--	--	<0.010	--	<0.050	0.210	0.39	0.60	0.090	0.110
AUG 28...	0.140	0.140	0.060	0.200	0.200	0.040	0.46	0.50	0.020	0.020

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
NOV 29...	1.3	--	--	--	--	--	--	--	--	--
JAN 31...	1.1	2	130	<0.50	<1.0	<5.0	<3.0	<10	<3.0	<10
APR 10...	0.71	--	--	--	--	--	--	--	--	--
MAY 14...	0.71	--	--	--	--	--	--	--	--	--
JUN 18...	0.34	5	85	<0.50	1.0	<5.0	<3.0	<10	3.0	<10
AUG 28...	0.06	--	--	--	--	--	--	--	--	--

08143600 PECAN BAYOU NEAR MULLIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV										
29...	--	--	--	--	--	--	--	--	--	--
JAN										
31...	23	2.0	<0.1	10	<10	1	<1.0	1300	<6	4.0
APR										
10...	--	--	--	--	--	--	--	--	--	--
MAY										
14...	--	--	--	--	--	--	--	--	--	--
JUN										
18...	9	<1.0	<0.1	<10	<10	<1	<1.0	490	<6	5.0
AUG										
28...	--	--	--	--	--	--	--	--	--	--

08147000 COLORADO RIVER NEAR SAN SABA, TX

LOCATION.--Lat 31°13'04", long 98°33'51", San Saba-Lampasas County line, Hydrologic Unit 12090201, near left bank at downstream side of pier of bridge on U.S. Highway 190, 5.2 mi downstream from San Saba River, 9.2 mi east of San Saba, and at mile 474.3.

DRAINAGE AREA.--31,217 mi², approximately, of which 11,398 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1915 to October 1922 (published as "near Chadwick"), October 1923 to August 1930 (published as "near Tow"), September 1930 to current year. Monthly discharge only for some periods, published in WSP 1312.
Water-quality records.--Chemical analyses: August 1941, September 1947 to September 1992. Chemical and biochemical analyses: January 1968 to September 1993. Pesticide analyses: January 1968 to April 1982. Sediment analyses: May 1951 to October 1962, October 1977 to September 1993. Specific conductance and water temperature: September 1947 to September 1992. Suspended sediment discharge: December 1950 to September 1962.

REVISED RECORDS.--WSP 458: 1916. WSP 858: 1900(M), 1936(M). WDR TX-81-3: Drainage area. WSP 1512: 1916-18(M), 1936. WSP 1732: 1925-26(M).

GAGE.--Water-stage recorder. Datum of gage is 1,096.22 ft above sea level. See WSP 1922 for brief history of changes prior to May 23, 1940.

REMARKS.--No estimated daily discharges. Records good. There are many diversions above station for irrigation, municipal use, and for oil field operations. Since March 15, 1990, 66 percent of the drainage area above this station has been controlled by O.H. Ivie Reservoir (station 08136600), 140.8 miles upstream, and by an additional twelve reservoirs (8 above and 4 below O.H. Ivie Reservoir), for a total combined capacity (13 reservoirs) of 1,897,000 acre-ft at conservation level. Flow is also affected at times by discharge from the flood-detention pools of 187 floodwater-retarding structures with a combined capacity of 205,700 acre-ft. These flood-detention structures control runoff from an 944 mi² area above this station. Radio telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--50 years (water years 1917-19, 1921-22, 1924-68) prior to completion of Robert Lee Dam, 1,340 ft³/s (970,100 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1917-19, 1921-22, 1924-68).--Maximum discharge, 224,000 ft³/s July 23, 1938 (gage height, 63.2 ft, present site), based on floodmarks at site then in use; no flow for several days in 1954, 1963, 1964, and 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage during period 1878 to July 22, 1938, 58.4 ft Sept. 25, 1900 (discharge, 184,000 ft³/s, present site), from floodmarks at former site.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102	71	114	111	89	49	54	59	6110	55	26	776
2	100	74	113	108	89	53	58	52	3630	53	24	537
3	98	73	106	109	88	60	63	48	2260	48	22	372
4	96	75	105	110	93	64	64	45	2120	47	19	301
5	90	75	103	109	101	66	73	43	2270	42	17	274
6	85	78	103	106	102	68	106	59	2030	34	18	209
7	88	84	103	103	104	61	361	1010	2900	29	20	187
8	87	83	104	104	103	58	224	698	3800	24	18	145
9	86	78	103	106	102	66	147	528	4700	20	18	236
10	82	79	102	110	99	71	116	502	4690	19	23	144
11	78	78	103	108	89	72	122	497	4570	104	52	111
12	78	77	105	103	84	74	115	856	4500	259	509	108
13	78	74	106	102	82	70	99	710	4480	134	226	107
14	75	78	106	101	78	67	88	610	4410	115	153	103
15	72	76	107	101	68	61	77	663	4340	1070	123	468
16	72	75	107	100	62	55	71	685	3470	2120	95	1160
17	71	79	112	104	61	53	62	688	3060	543	90	1090
18	70	99	120	103	65	51	58	685	2600	326	80	565
19	70	113	116	98	64	49	53	1040	1490	207	74	350
20	64	209	117	97	61	46	44	975	485	153	72	420
21	63	167	118	97	59	46	44	575	249	120	58	1010
22	61	142	116	99	59	48	62	485	165	97	48	1010
23	62	132	116	101	58	46	76	368	124	84	46	882
24	61	125	114	100	54	49	87	359	100	72	49	743
25	62	119	113	102	58	47	83	408	82	62	212	631
26	63	116	113	102	58	47	73	1050	69	56	216	554
27	64	116	112	97	59	57	70	917	68	50	126	511
28	62	113	113	97	52	63	66	850	57	46	94	479
29	60	113	112	96	49	69	60	841	50	40	4300	413
30	64	112	114	93	---	68	61	938	44	35	5000	377
31	67	---	114	90	---	57	---	1190	---	30	996	---
TOTAL	2331	2983	3410	3167	2190	1811	2737	18434	68923	6094	12824	14273
MEAN	75.2	99.4	110	102	75.5	58.4	91.2	595	2297	197	414	476
MAX	102	209	120	111	104	74	361	1190	6110	2120	5000	1160
MIN	60	71	102	90	49	46	44	43	44	19	17	103
AC-FT	4620	5920	6760	6280	4340	3590	5430	36560	136700	12090	25440	28310

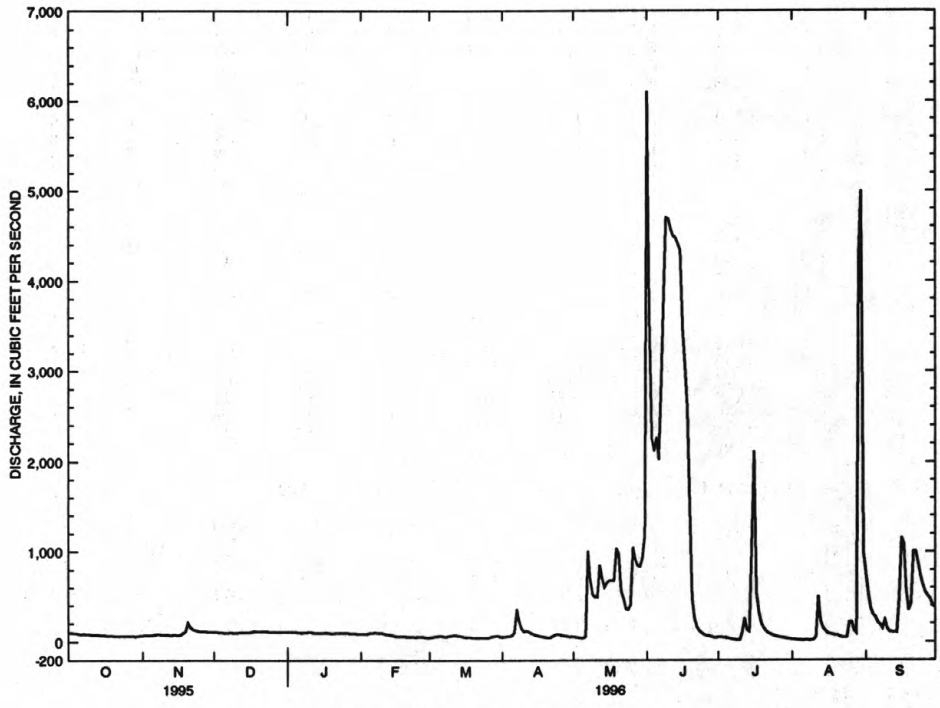
08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1996#, BY WATER YEAR (WY)

MEAN	860	424	648	478	736	672	689	1025	1228	410	478	880
MAX	3439	3444	9242	2756	10760	5002	4699	4504	4811	1981	3915	5214
(WY)	1972	1975	1992	1992	1992	1992	1990	1994	1986	1971	1971	1980
MIN	34.6	82.2	76.5	93.4	75.5	46.8	33.6	11.2	4.16	10.4	13.0	23.7
(WY)	1984	1980	1984	1986	1996	1986	1986	1984	1984	1984	1980	1983

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1969 - 1996#	
ANNUAL TOTAL	170425		139177			
ANNUAL MEAN	467		380		709	
HIGHEST ANNUAL MEAN					3078	1992
LOWEST ANNUAL MEAN					84.1	1984
HIGHEST DAILY MEAN	13500	Apr 5	6110	Jun 1	45500	Dec 21 1991
LOWEST DAILY MEAN	34	Jul 29	17	Aug 5	.00	Jul 21 1984
ANNUAL SEVEN-DAY MINIMUM	46	Jul 24	19	Aug 3	.01	Jul 20 1984
INSTANTANEOUS PEAK FLOW			12700	Aug 29	47400	Dec 21 1991
INSTANTANEOUS PEAK STAGE			13.32	Aug 29	31.60	Dec 21 1991
ANNUAL RUNOFF (AC-FT)	338000		276100		513900	
10 PERCENT EXCEEDS	972		864		1240	
50 PERCENT EXCEEDS	172		98		207	
90 PERCENT EXCEEDS	64		49		60	

Period of regulated streamflow.



08147000 COLORADO RIVER NEAR SAN SABA, TX
MEAN DAILY DISCHARGE (CFS)

08150800 BEAVER CREEK NEAR MASON, TX

LOCATION.--Lat 30°38'36", long 99°05'44", Mason County, Hydrologic Unit 12090204, on left bank at downstream side of downstream bridge on U.S. Highway 87, 1.8 mi upstream from Llano River, 6.4 mi downstream from Spring Creek, and 11.1 mi southeast of Mason.

DRAINAGE AREA.--215 mi².

PERIOD OF RECORD.--July 1963 to current year.

REVISED RECORDS.--WSP 2122: 1964-65. WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,253.24 ft above sea level. Prior to Aug. 3, 1978, at site 300 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. There is no known regulation or diversion above station. Several observations of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
No peak greater than base discharge.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.3	1.9	3.0	1.7	2.0	2.4	.70	2.8	.03	.05	.87
2	1.2	1.6	1.9	3.1	1.7	2.8	2.0	.70	2.6	.03	.04	.62
3	1.8	1.8	1.9	3.0	1.9	2.9	1.8	.69	7.7	.02	.04	.45
4	1.5	1.8	1.9	3.0	2.0	2.4	1.8	.61	4.0	.00	.02	5.1
5	1.3	1.7	2.1	3.0	1.4	2.3	2.2	.72	2.0	.00	.02	6.3
6	1.2	1.7	2.1	3.0	.99	2.2	4.5	1.3	1.1	.00	.01	2.9
7	1.1	1.7	2.1	3.0	.99	2.0	6.2	1.2	3.0	.00	.01	1.4
8	.99	1.7	2.1	3.0	.99	1.9	4.4	.93	8.8	.00	.00	3.9
9	.96	1.6	2.1	3.0	.99	1.7	3.2	.61	5.4	.00	.02	2.5
10	.88	1.5	2.1	3.0	.97	1.7	2.4	.54	2.4	.00	.02	11
11	.88	1.5	2.1	2.6	.88	1.7	2.2	.91	1.3	.40	.02	4.8
12	.88	1.5	2.2	2.6	1.2	1.7	1.9	2.9	.80	7.1	.02	2.0
13	.88	1.5	2.3	2.5	1.7	1.7	1.6	3.5	.54	4.9	.02	.99
14	.85	1.4	2.3	2.4	1.7	1.7	1.5	1.9	.41	2.2	.02	.58
15	.79	1.4	2.3	2.3	1.7	1.7	1.4	1.2	.35	4.9	.02	34
16	.79	1.4	2.3	2.3	1.7	1.7	1.2	.72	.33	33	.00	35
17	.79	1.6	2.3	2.3	1.7	1.7	1.2	.42	.25	10	.02	12
18	.79	3.2	3.8	2.3	1.7	2.0	1.2	.27	.20	3.4	.03	4.9
19	.79	5.4	4.0	2.1	1.7	2.3	1.2	.25	.18	1.4	.08	95
20	.79	3.8	3.8	2.0	1.7	1.8	1.2	.20	.10	.65	.10	28
21	.76	3.0	3.4	1.9	1.7	1.7	1.2	.20	.07	.32	.08	13
22	.70	2.5	3.3	1.9	1.7	1.7	1.7	.19	.06	.21	.09	8.1
23	.66	2.5	3.0	1.9	1.7	1.7	2.8	.14	.06	.17	.15	5.5
24	.62	2.3	3.0	1.9	1.6	1.7	2.7	.10	.06	.15	.16	3.6
25	.62	2.2	3.0	1.8	1.4	1.7	2.4	.10	.13	.14	11	2.6
26	.62	2.0	3.0	1.8	1.4	1.7	1.7	.10	.15	.13	17	4.0
27	.56	2.0	2.8	1.8	1.4	2.4	1.4	.10	.11	.11	6.1	5.9
28	.69	1.9	2.8	1.8	1.4	4.6	1.2	.09	.09	.09	2.0	5.7
29	.77	1.9	2.8	1.8	1.6	5.1	.88	.08	.07	.07	1.3	3.9
30	.79	1.9	2.8	1.7	---	3.7	.76	.33	.06	.06	1.4	2.8
31	.87	---	2.9	1.7	---	2.7	---	.68	---	.06	1.1	---
TOTAL	27.92	61.3	80.4	73.5	43.21	68.6	62.24	22.38	45.12	69.54	40.94	307.41
MEAN	.90	2.04	2.59	2.37	1.49	2.21	2.07	.72	1.50	2.24	1.32	10.2
MAX	1.8	5.4	4.0	3.1	2.0	5.1	6.2	3.5	8.8	33	17	95
MIN	.56	1.3	1.9	1.7	.88	1.7	.76	.08	.06	.00	.00	.45
AC-FT	55	122	159	146	86	136	123	44	89	138	81	610
CFSM	.00	.01	.01	.01	.01	.01	.01	.00	.01	.01	.01	.05
IN.	.00	.01	.01	.01	.01	.01	.01	.00	.01	.01	.01	.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1996, BY WATER YEAR (WY)

MEAN	23.2	7.66	14.4	13.4	19.1	16.9	18.3	29.9	24.8	3.41	21.5	11.6
MAX	292	32.2	220	183	285	105	132	197	327	23.0	443	167
(WY)	1970	1970	1992	1968	1992	1970	1977	1975	1987	1987	1978	1964
MIN	.37	.91	1.44	1.84	1.41	1.29	.49	.72	.21	.003	.000	.021
(WY)	1983	1980	1983	1971	1984	1967	1984	1996	1971	1964	1985	1977

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1963 - 1996	
ANNUAL TOTAL	5190.78		902.56			
ANNUAL MEAN	14.2		2.47		17.1	
HIGHEST ANNUAL MEAN					65.5	1992
LOWEST ANNUAL MEAN					1.97	1967
HIGHEST DAILY MEAN	1650	May 29	95	Sep 19	12800	Aug 3 1978
LOWEST DAILY MEAN	.05	Aug 21	.00	Jul 4	.00	Aug 3 1963
ANNUAL SEVEN-DAY MINIMUM	.07	Aug 18	.00	Jul 4	.00	Aug 3 1963
INSTANTANEOUS PEAK FLOW			395	Sep 19	66900	Aug 3 1978
INSTANTANEOUS PEAK STAGE			3.18	Sep 19	24.00	Aug 3 1978
ANNUAL RUNOFF (AC-FT)	10300		1790		12370	
ANNUAL RUNOFF (CFSM)	.066		.011		.079	
ANNUAL RUNOFF (INCHES)	.90		.16		1.08	
10 PERCENT EXCEEDS	12		3.9		21	
50 PERCENT EXCEEDS	3.0		1.7		3.0	
90 PERCENT EXCEEDS	.53		.07		.20	

08151500 LLANO RIVER AT LLANO, TX

LOCATION.--Lat 30°45'04", long 98°40'10", Llano County, Hydrologic Unit 12090204, on right bank in Llano, 0.4 mi downstream from bridge on State Highway 16, 7 mi upstream from Little Llano River, and 29.3 mi upstream from mouth.

DRAINAGE AREA.--4,197.14 mi², of which 5.14 mi² probably is noncontributing.

PERIOD OF RECORD.--September 1939 to current year.
Water-quality records.--Chemical analyses: April 1948 to October 1967. Chemical and Biochemical analyses: April 1979 to September 1986. Sediment analyses: September 1964, April 1979 to September 1986.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 970.01 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Part of low flow of the Llano River disappears into various formations, many of which are faulted, between this station and Llano River near Junction (station 08150000) operated by Lower Colorado River Authority. Rain gage at station. Radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1879, 41.5 ft June 14, 1935 (discharge, 380,000 ft³/s), from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Aug. 30	1445	9,530	8.14				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	263	138	127	146	110	111	139	62	394	41	47	1120
2	245	144	133	208	112	118	124	62	582	35	44	768
3	264	150	140	140	110	128	118	59	358	35	39	593
4	261	150	140	e155	110	132	116	60	300	33	34	495
5	258	150	136	e150	121	131	134	62	763	32	34	447
6	247	150	131	e145	123	118	150	59	477	30	29	388
7	233	151	128	e137	126	111	151	43	359	26	28	393
8	221	136	129	156	121	106	161	e13	312	28	31	410
9	207	132	124	112	121	104	156	e21	419	25	86	389
10	194	136	117	125	117	98	141	28	237	26	55	329
11	180	130	120	132	108	99	130	45	171	151	89	296
12	169	122	120	124	105	103	122	66	134	332	76	326
13	158	114	124	122	107	104	105	67	112	581	54	248
14	147	114	195	121	106	111	104	74	103	416	50	214
15	139	114	107	119	103	102	86	69	95	518	57	333
16	136	114	118	118	103	109	82	67	87	426	65	750
17	136	164	130	123	103	108	76	61	83	426	67	800
18	136	183	164	123	101	101	74	55	78	302	56	653
19	136	190	142	120	104	98	74	50	74	231	50	533
20	136	209	158	120	103	97	72	47	71	162	45	1910
21	136	191	153	113	103	96	70	43	67	119	45	774
22	123	175	147	116	101	97	148	40	70	95	59	503
23	115	158	141	118	100	99	117	38	71	104	70	459
24	107	147	140	114	98	106	112	36	61	85	71	370
25	107	144	142	119	98	100	120	34	62	74	82	304
26	110	138	145	117	98	101	110	36	64	70	95	284
27	111	134	143	113	98	138	101	46	59	64	172	317
28	106	127	140	110	98	135	72	45	52	59	378	288
29	108	122	135	110	107	156	66	42	46	55	584	249
30	115	127	134	110	---	157	63	68	44	51	4230	266
31	117	---	120	110	---	145	---	62	---	50	3610	---
TOTAL	5121	4354	4223	3946	3115	3519	3294	1560	5805	4682	10432	15209
MEAN	165	145	136	127	107	114	110	50.3	193	151	337	507
MAX	264	209	195	208	126	157	161	74	763	581	4230	1910
MIN	106	114	107	110	98	96	63	13	44	25	28	214
AC-FT	10160	8640	8380	7830	6180	6980	6530	3090	11510	9290	20690	30170

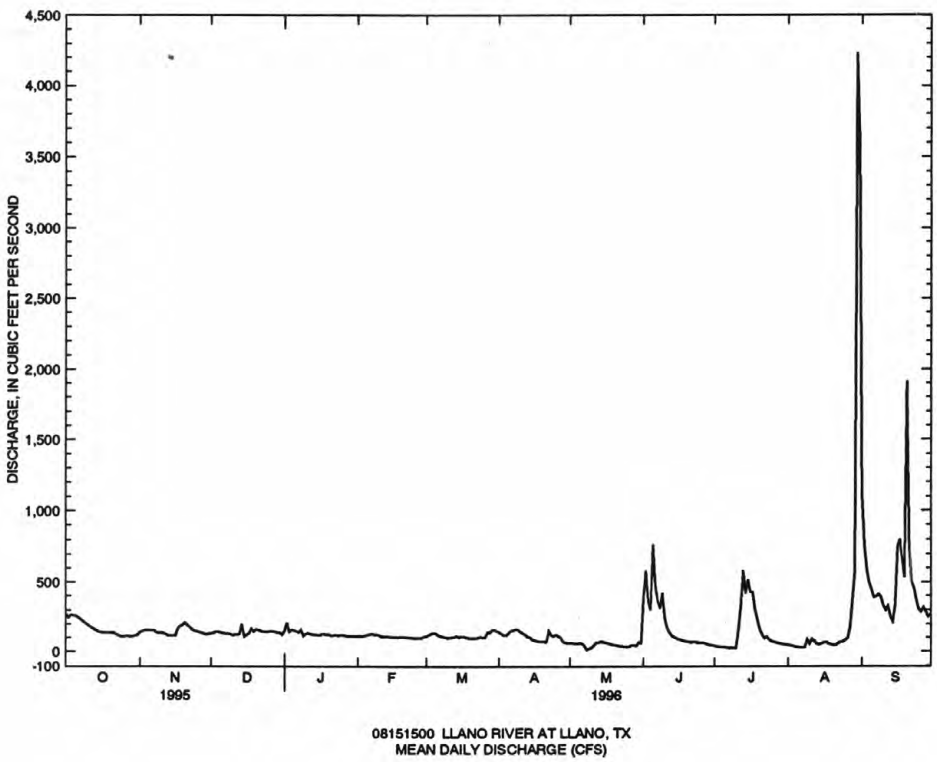
08151500 LLANO RIVER AT LLANO, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1996, BY WATER YEAR (WY)

MEAN	499	226	294	288	357	277	376	534	517	228	313	460
MAX	3700	1005	3179	2483	3754	1539	3115	3350	3231	1796	3605	3891
(WY)	1974	1975	1992	1968	1992	1970	1977	1957	1961	1988	1974	1952
MIN	18.0	20.7	27.5	31.7	37.7	23.7	20.9	41.0	7.93	.000	.087	.56
(WY)	1952	1957	1955	1957	1954	1954	1955	1984	1953	1956	1952	1954

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1940 - 1996	
ANNUAL TOTAL	84322.5		65260			
ANNUAL MEAN	231		178		364	
HIGHEST ANNUAL MEAN					1097	1992
LOWEST ANNUAL MEAN					50.0	1954
HIGHEST DAILY MEAN	7130	May 30	4230	Aug 30	71200	Sep 8 1980
LOWEST DAILY MEAN	2.5	May 20	13	May 8	.00	Aug 5 1952
ANNUAL SEVEN-DAY MINIMUM	27	Aug 17	29	Jul 4	.00	Aug 27 1952
INSTANTANEOUS PEAK FLOW			9530	Aug 30	232000	Sep 10 1952
INSTANTANEOUS PEAK STAGE			8.14	Aug 30	32.60	Sep 10 1952
ANNUAL RUNOFF (AC-FT)	167300		129400		263500	
10 PERCENT EXCEEDS	344		330		529	
50 PERCENT EXCEEDS	151		118		153	
90 PERCENT EXCEEDS	64		47		40	

e Estimated



08151500 LLANO RIVER AT LLANO, TX
MEAN DAILY DISCHARGE (CFS)

08153500 PEDERNALES RIVER NEAR JOHNSON CITY, TX

LOCATION.--Lat 30°17'30", long 98°23'57", Blanco County, Hydrologic Unit 12090206, near left downstream end of bridge on U.S. Highway 281, 0.2 mi downstream from Towhead Creek, 1.1 mi northeast of Johnson City, 3.4 mi downstream from Buffalo Creek, and 48.0 mi upstream from mouth.

DRAINAGE AREA.--901 mi².

PERIOD OF RECORD.--May 1939 to current year.
Water-quality records.--Chemical analyses: April 1948 to September 1950, October 1971 to September 1985.

REVISED RECORDS.--WSP 1632: 1953(M), 1957, 1958(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,096.70 ft above sea level. May 4 to Sept. 13, 1939, nonrecording gage, and Sept. 14, 1939, to Sept. 10, 1952, water-stage recorder at upstream side of bridge at same datum. Sept. 11, 1952, to June 29, 1953, nonrecording gage, and June 30, 1953, to Oct. 7, 1954, water-stage recorder at site 360 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. There are diversions above station for irrigation. During the year, the city of Fredericksburg discharged varying amounts of wastewater effluent into the river upstream from station. The city of Johnson City diverts varying amounts of water from the pool at gage and discharges wastewater effluent into river below the gage. Flow is affected at times by discharge from the flood-detention pools of four floodwater-retarding structures with a combined detention capacity of 4,580 acre-ft. These structures control runoff of 15.6 mi² in the Williamson Creek drainage basin. Radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1869, reached a stage of 33 ft from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,100 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	994	57	71	57	158	13	35	31	1.2	.00	36
2	46	300	57	58	58	143	11	37	34	.94	.00	26
3	44	121	57	85	67	130	9.8	30	25	.43	.00	87
4	39	100	59	88	48	71	7.6	26	16	.34	.00	88
5	35	89	64	80	46	48	8.4	21	14	.41	.00	45
6	33	74	64	48	44	43	4.8	19	12	.47	.00	24
7	31	47	64	78	48	17	4.0	18	9.9	.91	.00	17
8	33	45	64	84	47	38	3.2	51	6.4	.69	.00	14
9	36	45	52	88	40	35	2.7	44	4.6	.38	.00	11
10	35	45	52	86	37	32	2.4	33	5.3	.25	.00	7.8
11	35	31	57	67	32	31	2.0	27	13	.49	.00	4.6
12	35	37	64	78	45	27	1.9	31	14	.31	.00	3.2
13	35	40	66	77	41	25	1.3	31	13	.22	.00	2.7
14	33	42	68	60	39	21	.61	30	7.1	.15	.00	2.2
15	31	45	72	51	35	17	2.9	25	4.8	.08	.00	1.8
16	31	42	83	48	39	15	31	23	3.1	.06	.00	73
17	35	49	100	45	41	15	35	21	2.6	.01	.00	123
18	34	64	82	28	44	5.7	29	17	1.5	.00	.00	69
19	30	71	114	77	35	7.7	29	15	1.2	.00	.00	66
20	24	80	145	62	42	7.3	26	14	1.0	.00	.00	314
21	28	72	131	57	42	8.1	24	13	1.3	.00	.00	100
22	33	72	112	58	43	7.6	22	10	4.1	.00	.00	50
23	31	68	106	57	35	6.6	22	8.6	4.2	.00	.00	37
24	27	64	106	53	31	6.2	27	7.2	2.3	.00	.00	27
25	29	64	96	51	44	4.8	27	5.5	1.6	.00	.00	96
26	31	64	88	44	42	5.3	25	4.4	1.9	.00	.00	119
27	31	64	88	50	54	4.6	26	5.2	2.8	.00	.00	60
28	31	55	88	52	84	5.1	23	7.4	2.9	.00	.00	40
29	27	56	88	45	144	13	10	11	2.8	.00	.00	38
30	27	57	88	46	---	13	22	14	1.5	.00	.00	33
31	30	---	88	47	---	10	---	19	---	.00	19	---
TOTAL	1045	2997	2520	1919	1404	971.0	453.61	653.3	244.9	7.34	19.00	1615.3
MEAN	33.7	99.9	81.3	61.9	48.4	31.3	15.1	21.1	8.16	.24	.61	53.8
MAX	65	994	145	88	144	158	35	51	34	1.2	19	314
MIN	24	31	52	28	31	4.6	.61	4.4	1.0	.00	.00	1.8
AC-FT	2070	5940	5000	3810	2780	1930	900	1300	486	15	38	3200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1996, BY WATER YEAR (WY)

MEAN	226	88.0	178	128	205	161	226	336	301	97.9	113	205
MAX	2041	600	3161	1177	2794	1289	2368	1673	2905	872	1953	6332
(WY)	1960	1975	1992	1968	1992	1992	1977	1975	1987	1987	1978	1952
MIN	.44	2.51	2.44	1.68	4.83	2.07	.060	2.05	.52	.001	.000	.000
(WY)	1952	1952	1955	1957	1957	1956	1956	1956	1971	1971	1954	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1939 - 1996	
ANNUAL TOTAL	82002.8		13849.45			
ANNUAL MEAN	225		37.8		189	
HIGHEST ANNUAL MEAN					840	1992
LOWEST ANNUAL MEAN					4.12	1956
HIGHEST DAILY MEAN	26300	May 30	994	Nov 1	129000	Sep 11 1952
LOWEST DAILY MEAN	1.8	Sep 10	.00	Jul 18	.00	Aug 8 1951
ANNUAL SEVEN-DAY MINIMUM	4.5	Sep 5	.00	Jul 18	.00	Aug 8 1951
INSTANTANEOUS PEAK FLOW			2850	Nov 1	441000	Sep 11 1952
INSTANTANEOUS PEAK STAGE			11.73	Nov 1	42.50	Sep 11 1952
ANNUAL RUNOFF (AC-FT)	162700		27470		137200	
10 PERCENT EXCEEDS	224		83		271	
50 PERCENT EXCEEDS	106		30		50	
90 PERCENT EXCEEDS	30		.00		4.6	

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX

LOCATION.--Lat 30°22'19", long 97°47'04", Travis County, Hydrologic Unit 12090205, on right bank at downstream side of bridge at Loop 360, 1.0 mi upstream from West Fork Bull Creek and Farm Road 2222, and 7.1 mi northwest of the State Capitol Building in Austin.

DRAINAGE AREA.--22.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1976 to July 1978 (operated as a flood-hydrograph partial-record station only), July 1978 to current year.

GAGE.--Water-stage recorder, concrete control, and crest-stage gage. Datum of gage is 534.08 ft above sea level, (levels from city of Austin benchmark).

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions above this station. Rain gage at station. Radio telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 30	0615	313	4.29	Aug. 24	1230	3,420	7.29
June 4	0600	547	4.76	Aug. 25	1400	342	4.36
June 7	0900	700	5.00	Aug. 30	1230	388	4.46

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	20	2.8	2.0	1.9	2.8	1.8	.40	2.3	2.4	.03	46
2	2.3	6.6	3.0	2.2	2.2	2.4	1.8	.38	1.8	1.6	.02	26
3	1.9	3.4	3.4	2.1	2.3	2.0	1.8	.38	1.3	1.4	.02	18
4	1.6	3.9	2.6	2.1	2.3	1.9	1.9	.36	51	1.5	.02	14
5	1.6	4.0	2.3	3.6	2.5	2.1	2.2	.31	4.9	1.5	.02	12
6	1.2	3.5	2.3	1.8	2.6	2.2	6.4	.31	2.4	1.1	.01	10
7	1.2	3.1	2.3	1.6	2.5	2.0	3.9	.31	88	.92	.00	11
8	1.1	2.9	3.4	1.7	1.9	1.8	3.3	.25	15	1.1	.05	8.9
9	1.0	2.5	3.1	2.6	1.9	1.9	2.8	.23	6.9	.42	.04	8.2
10	.84	2.3	2.6	1.8	1.9	2.0	2.5	.21	4.8	.39	.08	7.0
11	.90	2.6	2.6	1.8	2.1	1.9	1.9	.18	3.4	.36	10	5.9
12	.88	2.3	2.5	1.5	1.8	1.9	1.8	.18	3.0	.24	4.1	5.0
13	.81	2.2	2.5	1.4	1.5	1.8	1.8	.18	2.5	.18	1.3	4.7
14	.73	2.3	2.6	1.4	1.6	1.7	1.7	.18	2.1	.25	1.0	4.7
15	.72	2.1	2.6	1.3	1.7	1.8	1.5	.18	1.8	.36	.82	3.9
16	.75	2.2	2.5	1.3	1.8	2.1	1.3	.18	1.3	.16	.47	3.9
17	.81	13	3.1	1.3	1.6	2.6	1.2	.18	1.1	.15	.37	3.7
18	.81	17	2.9	1.4	1.8	2.3	1.2	.16	1.0	.15	.28	35
19	.79	7.0	2.2	1.2	1.8	2.3	1.1	.12	.91	.15	.61	31
20	.72	5.1	2.1	1.2	1.9	1.8	.96	.12	.72	.15	.35	35
21	.72	5.1	2.1	1.4	1.9	1.8	.75	.12	.57	.14	.25	27
22	.61	4.5	2.1	1.4	1.9	1.7	.91	.12	.51	.09	.38	16
23	.45	4.3	2.1	1.4	1.9	1.6	1.4	.08	.55	.07	3.1	13
24	.45	4.0	2.1	1.4	1.6	1.6	1.0	.06	.83	.11	505	23
25	.58	4.0	2.1	1.4	1.6	1.6	.68	.05	4.4	.10	67	17
26	.64	3.7	2.1	1.5	1.6	1.5	.61	.04	41	.06	28	13
27	.72	3.3	2.1	1.7	1.6	2.4	.53	7.7	11	.05	16	12
28	.62	2.9	2.1	1.6	1.3	3.0	.53	1.5	4.8	.04	11	11
29	.53	2.8	2.1	1.9	2.7	2.6	.49	.72	3.5	.04	15	9.5
30	.53	2.8	2.1	2.5	---	2.5	.45	43	3.0	.03	63	8.4
31	.75	---	2.1	2.0	---	2.3	---	4.3	---	.03	30	---
TOTAL	29.76	145.4	76.5	53.5	55.7	63.9	50.21	62.49	266.39	15.24	758.32	443.8
MEAN	.96	4.85	2.47	1.73	1.92	2.06	1.67	2.02	8.88	.49	24.5	14.8
MAX	2.5	20	3.4	3.6	2.7	3.0	6.4	43	88	2.4	505	46
MIN	.45	2.1	2.1	1.2	1.3	1.5	.45	.04	.51	.03	.00	3.7
AC-FT	59	288	152	106	110	127	100	124	528	30	1500	880
CFSM	.04	.22	.11	.08	.09	.09	.08	.09	.40	.02	1.10	.66
IN.	.05	.24	.13	.09	.09	.11	.08	.10	.44	.03	1.26	.74
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1996, BY WATER YEAR (WY)												
MEAN	12.8	9.20	16.3	12.0	17.9	15.0	9.06	27.3	27.2	3.62	4.15	3.98
MAX	70.3	43.2	130	55.9	114	64.7	21.6	58.9	141	16.7	26.3	15.3
(WY)	1995	1988	1992	1992	1992	1992	1993	1992	1987	1987	1991	1987
MIN	.27	.60	.64	1.08	1.92	2.06	1.28	.33	.64	.043	.16	.053
(WY)	1979	1989	1990	1990	1996	1996	1984	1984	1984	1994	1984	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1978 - 1996	
ANNUAL TOTAL	4532.64		2021.21			
ANNUAL MEAN	12.4		5.52		13.2	
HIGHEST ANNUAL MEAN					40.6	1992
LOWEST ANNUAL MEAN					1.86	1984
HIGHEST DAILY MEAN	473	May 30	505	Aug 24	1170	May 13 1982
LOWEST DAILY MEAN	.12	Aug 31	.00	Aug 7	.00	Jul 4 1984
ANNUAL SEVEN-DAY MINIMUM	.12	Aug 31	.02	Aug 1	.00	Jul 4 1984
INSTANTANEOUS PEAK FLOW			3420	Aug 24	13700	May 13 1982
INSTANTANEOUS PEAK STAGE			7.29	Aug 24	12.31	Oct 7 1994
ANNUAL RUNOFF (AC-FT)	8990		4010		9580	
ANNUAL RUNOFF (CFSM)	.56		.25		.59	
ANNUAL RUNOFF (INCHES)	7.56		3.37		8.05	
10 PERCENT EXCEEDS	22		9.6		23	
50 PERCENT EXCEEDS	5.6		1.8		3.9	
90 PERCENT EXCEEDS	.72		.18		.33	

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: April 1978 to current year. Pesticide analyses: June 1978 to September 1986, January 1993 to June 1995. Radiochemical analyses: January to April 1980. Samples collected during storm events are collected by automatic sampler.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
MAR												
04...	0933	2.0	627	7.5	13.5	3	0.20	9.1	89	13	0.2	20
MAY												
30...	0529	135	324	7.5	--	50	350	--	--	160	19	110000
30...	0559	158	357	7.4	--	30	840	--	--	210	15	48000
30...	0629	276	237	7.5	--	90	590	--	--	140	12	51000
30...	1020	52	329	7.4	--	60	51	--	--	26	5.6	30000
30...	1456	23	360	7.5	--	55	26	--	--	20	2.8	K7000
JUL												
15...	1352	0.81	620	7.6	28.5	5	0.40	7.2	95	<10	0.5	960
AUG												
24...	0857	135	214	7.5	--	25	32	--	--	27	6.7	30000
24...	0927	666	205	7.6	--	30	320	--	--	180	6.5	54000
24...	0957	999	229	7.5	--	--	240	--	--	110	5.1	44000
24...	1442	1070	265	7.6	25.0	55	50	--	--	48	2.6	K18000
24...	1810	161	384	7.8	25.0	50	34	--	--	28	1.8	K13000

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
MAR												
04...	190	190	<1	8	--	--	--	0.010	--	<0.050	<0.015	--
MAY												
30...	80000	92	968	252	716	0.460	0.460	0.020	0.480	0.480	0.020	6.0
30...	58000	100	2440	780	1660	0.440	0.440	0.020	0.460	0.460	0.070	1.1
30...	88000	72	1530	480	1050	0.490	0.490	0.030	0.520	0.520	0.070	2.2
30...	44000	97	129	42	87	0.430	0.430	0.020	0.450	0.450	<0.015	1.3
30...	K10000	100	36	30	6	0.580	--	<0.010	0.580	0.580	<0.015	1.2
JUL												
15...	400	180	2	9	0	0.080	--	<0.010	0.080	0.080	0.050	--
AUG												
24...	54000	67	98	29	69	0.210	0.210	0.010	0.220	0.220	<0.015	1.1
24...	100000	79	1120	248	872	0.930	0.930	0.020	0.950	0.950	0.060	5.3
24...	200000	72	764	188	576	1.08	1.08	0.020	1.10	1.10	0.060	2.2
24...	78000	79	83	26	57	1.08	1.08	0.020	1.10	1.10	0.040	3.4
24...	50000	120	70	19	51	1.28	1.28	0.020	1.30	1.30	<0.015	2.1

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)
MAR											
04...	--	<0.20	<0.010	0.010	0.010	0.03	1.9	<0.100	<0.100	<1	<1
MAY											
30...	5.5	5.5	0.820	0.040	<0.010	--	70	--	--	<1	18
30...	0.53	0.60	0.030	0.020	<0.010	--	96	--	--	<1	11
30...	1.6	1.7	0.010	0.040	<0.010	--	54	--	--	<1	18
30...	0.90	0.90	0.100	0.030	<0.010	--	10	--	--	<1	5
30...	0.60	0.60	0.040	0.030	<0.010	--	8.2	--	--	<1	4
JUL											
15...	--	<0.20	0.020	0.310	0.330	1.0	3.3	0.500	<0.100	<1	<1
AUG											
24...	0.90	0.90	0.150	0.040	0.050	0.15	11	--	--	<1	5
24...	4.2	4.3	0.770	0.040	0.060	0.18	17	--	--	<1	26
24...	1.0	1.1	0.210	0.080	0.110	0.34	48	--	--	<1	14
24...	2.3	2.3	0.360	0.050	<0.010	--	22	--	--	<1	5
24...	0.80	0.80	0.090	0.020	0.010	0.03	12	--	--	<1	4

08154900 LAKE AUSTIN AT AUSTIN, TX

LOCATION.--Lat 30°18'53", long 97°47'10", Travis County, Hydrologic Unit 12090205, at city of Austin Waterplant No. 2
and 1.5 mi upstream from Tom Miller Dam on the Colorado River at Austin.

DRAINAGE AREA.--38,846 mi², of which 11,403 mi² probably is noncontributing.

WATER QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemic al, and pesticide analyses: October 1978 to August 1990.
Chemical and biochemical analyses: October 1990 to current year.

301739097471601 - LAKE AUSTIN SITE AR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
24...	1525	1.00	525	7.6	26.5	6.1	76
24...	1527	10.0	524	7.6	26.0	5.6	70
24...	1529	24.0	540	7.2	25.5	2.2	27
25...	0715	1.00	528	7.5	26.0	4.8	60
25...	0717	10.0	541	7.2	25.5	2.1	26
25...	0719	24.0	544	7.2	25.0	1.6	20

301739097471201 - LAKE AUSTIN SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)
AUG										
24...	1540	1.00	520	7.7	26.5	2.32	0.40	6.1	76	<10
24...	1542	10.0	523	7.6	26.5	--	--	6.0	75	--
24...	1544	20.0	538	7.3	25.5	--	--	2.6	32	--
24...	1546	30.0	540	7.2	25.5	--	--	2.0	25	--
24...	1548	40.0	540	7.2	25.0	--	--	1.3	16	--
24...	1550	48.0	552	7.2	22.5	--	1.3	0	0	--
25...	0722	1.00	527	7.6	26.0	2.07	0.40	5.2	65	<10
25...	0724	10.0	542	7.3	25.5	--	--	2.1	26	--
25...	0726	20.0	544	7.3	25.0	--	--	1.8	22	--
25...	0728	30.0	542	7.2	25.0	--	--	1.5	18	--
25...	0730	40.0	545	7.2	24.5	--	--	0.6	7	--
25...	0732	48.0	557	7.3	22.5	--	1.8	0	0	--

DATE	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
AUG										
24...	1.0	140	200	140	289	<1	<0.010	<0.050	0.020	0.20
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	0.6	--	--	180	304	2	<0.010	<0.050	0.390	0.50
25...	0.8	290	200	140	289	2	<0.010	<0.050	0.020	0.20
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	0.9	--	--	160	312	7	<0.010	<0.050	0.360	0.60

08154900 LAKE AUSTIN AT AUSTIN, TX--Continued

301739097471201 - LAKE AUSTIN SITE AC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	COPPER, DISSOLVED (UG/L AS CU)	LEAD, DISSOLVED (UG/L AS PB)
AUG									
24...	0.18	0.20	0.020	<0.010	<0.010	--	4.7	1	<1
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	0.11	0.50	0.050	0.020	0.030	0.09	3.5	<1	<1
25...	0.18	0.20	<0.010	<0.010	<0.010	--	3.2	1	<1
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	0.24	0.60	0.050	0.020	0.020	0.06	3.0	<1	<1

301739097470901 - LAKE AUSTIN SITE AL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
24...	1600	1.00	520	7.7	26.5	6.2	78
24...	1602	10.0	520	7.6	26.5	5.8	73
24...	1604	21.0	540	7.3	25.5	2.4	30
25...	0745	1.00	521	7.6	26.0	5.7	71
25...	0747	10.0	542	7.3	25.5	1.9	23
25...	0749	24.0	545	7.3	25.0	1.8	22

302043097472401 - LAKE AUSTIN SITE BC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)
AUG											
24...	1625	1.00	506	7.6	26.5	0.85	3.5	5.6	70	<10	0.8
24...	1627	10.0	418	7.5	25.0	--	--	5.1	62	--	--
24...	1629	20.0	338	7.6	24.5	--	--	5.9	71	--	--
24...	1631	28.0	326	7.6	24.5	--	120	6.0	73	--	2.1
25...	0808	1.00	526	7.6	25.5	1.43	0.30	5.3	65	<10	0.3
25...	0810	10.0	525	7.6	25.5	--	--	5.2	64	--	--
25...	0812	20.0	433	7.4	25.0	--	--	4.5	55	--	--
25...	0814	28.0	328	7.5	24.5	--	43	5.6	68	--	1.7

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)
AUG											
24...	640	2000	140	278	6	0.060	--	<0.010	0.060	0.060	0.020
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	93	191	202	0.470	0.470	0.010	0.480	0.480	0.060
25...	480	900	140	289	<1	--	--	<0.010	--	<0.050	0.020
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	92	195	61	0.750	0.750	0.020	0.770	0.770	0.060

08154900 LAKE AUSTIN AT AUSTIN, TX--Continued

302043097472401 - LAKE AUSTIN SITE BC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	COPPER, DIS-SOLVED (UG/L AS CU)	LEAD, DIS-SOLVED (UG/L AS PB)
AUG										
24...	0.26	0.18	0.20	0.010	<0.010	0.010	0.03	4.1	1	<1
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	1.6	1.0	1.1	0.160	<0.010	0.020	0.06	9.0	1	<1
25...	0.20	0.18	0.20	<0.010	<0.010	<0.010	--	3.7	2	<1
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	1.4	0.54	0.60	0.050	0.050	0.040	0.12	8.4	2	<1

302044097472301 - LAKE AUSTIN SITE BL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
AUG							
24...	1615	1.00	519	7.6	26.5	5.6	70
24...	1617	10.0	505	7.3	25.5	2.7	33
24...	1619	17.0	375	7.5	25.0	5.4	66
25...	0800	1.00	517	7.6	25.5	5.3	65
25...	0802	10.0	516	7.6	25.5	5.2	64
25...	0804	18.0	435	7.4	25.0	4.3	52

301926097502201 - LAKE AUSTIN SITE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)
AUG											
24...	1650	1.00	532	7.5	26.0	1.37	0.70	4.8	60	<10	0.1
24...	1652	10.0	534	7.4	25.5	--	--	3.5	43	--	--
24...	1654	23.0	538	7.4	25.5	--	1.6	3.1	38	--	0.2
25...	0830	1.00	540	7.4	25.0	1.68	0.40	3.3	40	<10	0.1
25...	0832	10.0	540	7.4	25.0	--	--	2.9	35	--	--
25...	0834	22.0	542	7.3	25.0	--	0.50	2.4	29	--	0

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
AUG										
24...	100	470	140	300	3	--	<0.010	--	<0.050	0.030
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	150	288	6	0.050	<0.010	0.050	0.050	0.050
25...	120	230	M150	297	<1	0.050	<0.010	0.050	0.050	0.050
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	150	296	3	0.050	<0.010	0.050	0.050	0.050

08154900 LAKE AUSTIN AT AUSTIN, TX--Continued

301926097502201 - LAKE AUSTIN SITE CC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	COPPER, DIS-SOLVED (UG/L AS CU)	LEAD, DIS-SOLVED (UG/L AS PB)
AUG										
24...	0.20	0.17	0.20	<0.010	<0.010	<0.010	--	4.3	2	<1
24...	--	--	--	--	--	--	--	--	--	--
24...	0.25	0.15	0.20	<0.010	<0.010	<0.010	--	3.3	2	<1
25...	0.35	0.25	0.30	0.010	<0.010	0.010	0.03	2.4	2	<1
25...	--	--	--	--	--	--	--	--	--	--
25...	0.25	0.15	0.20	<0.010	<0.010	<0.010	--	4.1	2	<1

302021097540001 - LAKE AUSTIN SITE DC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)
AUG										
24...	1715	1.00	526	7.4	25.5	1.43	0.70	3.5	43	<10
24...	1717	10.0	525	7.4	25.0	--	--	2.7	33	--
24...	1719	18.0	526	7.3	25.0	--	1.1	2.6	32	--
25...	0855	1.00	539	7.3	24.5	1.74	0.50	2.4	29	<10
25...	0857	10.0	538	7.3	24.5	--	--	2.4	29	--
25...	0859	17.0	538	7.3	24.5	--	1.0	2.4	29	--

DATE	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
AUG										
24...	0.3	71	480	120	292	<1	--	<0.010	--	<0.050
24...	--	--	--	--	--	--	--	--	--	--
24...	0.1	--	--	140	292	<1	--	<0.010	--	<0.050
25...	0.2	48	64	140	290	2	--	<0.010	--	<0.050
25...	--	--	--	--	--	--	--	--	--	--
25...	0	--	--	150	295	3	0.050	<0.010	0.050	0.050

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	COPPER, DIS-SOLVED (UG/L AS CU)	LEAD, DIS-SOLVED (UG/L AS PB)
AUG										
24...	0.060	0.20	0.14	0.20	<0.010	<0.010	<0.010	3.8	2	<1
24...	--	--	--	--	--	--	--	--	--	--
24...	0.070	0.30	0.23	0.30	0.010	<0.010	<0.010	3.1	2	<1
25...	0.090	0.30	0.21	0.30	0.010	<0.010	<0.010	4.2	1	<1
25...	--	--	--	--	--	--	--	--	--	--
25...	0.080	0.35	0.22	0.30	<0.010	<0.010	<0.010	5.5	2	<1

08155200 BARTON CREEK AT STATE HIGHWAY 71 NEAR OAK HILL, TX

LOCATION.--Lat 30°17'46", long 97°55'31", Travis County, Hydrologic Unit 12090205, at upstream side of bridge on State Highway 71, 0.1 mi downstream from Little Barton Creek, and 5.8 mi northwest of Oak Hill.

DRAINAGE AREA.--89.7 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1975 to February 1978 (operated as a flood-hydrograph partial-record station), February 1978 to September 1982, January 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 737.04 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair above 15 ft³/s and poor below. No known regulation or diversions above station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.93	.41	.51	.18	.00	.06	.00	.00	.00	.00	.00
2	.13	.34	.41	.47	.19	.00	.08	.00	.00	.00	.00	.03
3	.13	.25	.42	.44	.18	.00	.09	.00	.00	.00	.00	.01
4	.11	.26	.43	.48	.17	.00	.10	.00	.00	.00	.00	.00
5	.10	.27	.43	.47	.17	.00	.09	.00	.00	.00	.00	.00
6	.09	.26	.41	.45	.17	.01	.15	.00	.00	.00	.00	.00
7	.09	.26	.41	.41	.20	.00	.12	.00	.00	.00	.00	.00
8	.10	.24	.46	.44	.21	.00	.11	.00	.00	.00	.00	.00
9	.11	.24	.44	.49	.21	.00	.11	.00	.00	.00	.00	.00
10	.13	.24	.44	.48	.19	.00	.11	.00	.00	.00	.00	.00
11	.13	.23	.47	.48	.15	.00	.10	.00	.00	.00	.00	.00
12	.12	.23	.51	.47	.09	.00	.10	.00	.00	.00	.00	.00
13	.12	.24	.52	.46	.07	.01	.09	.00	.00	.00	.00	.00
14	.12	.23	.52	.47	.07	.02	.06	.00	.00	.00	.00	.00
15	.10	.22	.52	.43	.06	.03	.05	.00	.00	.00	.00	.00
16	.10	.22	.50	.40	.04	.02	.04	.00	.00	.00	.00	.00
17	.08	.31	.48	.46	.02	.03	.04	.00	.00	.00	.00	.00
18	.08	.37	.51	.45	.02	.04	.03	.00	.00	.00	.00	.00
19	.08	.37	.51	.37	.03	.04	.02	.00	.00	.00	.00	.00
20	.07	.38	.46	.37	.02	.00	.03	.00	.00	.00	.00	.03
21	.06	.38	.45	.37	.01	.02	.04	.00	.00	.00	.00	16
22	.07	.39	.46	.37	.01	.04	.03	.00	.00	.00	.00	.55
23	.06	.40	.46	.38	.00	.04	.04	.00	.00	.00	.00	.48
24	.06	.40	.47	.35	.00	.01	.01	.00	.00	.00	.00	.37
25	.05	.40	.48	.33	.00	.02	.00	.00	.00	.00	.00	.26
26	.04	.41	.50	.33	.00	.02	.01	.00	.00	.00	.00	.20
27	.04	.42	.49	.30	.00	.07	.00	.00	.00	.00	.00	.17
28	.03	.39	.50	.27	.00	.06	.00	.00	.00	.00	.00	.14
29	.02	.41	.52	.25	.00	.04	.00	.00	.00	.00	.00	.12
30	.02	.41	.52	.24	---	.05	.00	.04	.00	.00	.00	.10
31	.06	---	.51	.21	---	.06	---	.00	---	.00	.00	---
TOTAL	2.63	10.10	14.62	12.40	2.46	0.63	1.71	0.04	0.00	0.00	0.00	18.46
MEAN	.085	.34	.47	.40	.085	.020	.057	.001	.000	.000	.000	.62
MAX	.13	.93	.52	.51	.21	.07	.15	.04	.00	.00	.00	16
MIN	.02	.22	.41	.21	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	5.2	20	29	25	4.9	1.2	3.4	.08	.00	.00	.00	37
CFSM	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.01
IN.	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1996, BY WATER YEAR (WY)

MEAN	14.0	9.02	60.3	47.4	68.2	61.1	41.7	74.0	87.6	9.45	3.38	2.77
MAX	57.6	43.0	520	293	465	338	196	226	613	46.8	15.2	24.2
(WY)	1982	1995	1992	1992	1992	1992	1979	1992	1981	1981	1991	1991
MIN	.000	.059	.039	.046	.072	.020	.057	.001	.000	.000	.000	.004
(WY)	1991	1990	1990	1990	1990	1996	1996	1996	1996	1978	1996	1990

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1978 - 1996	
ANNUAL TOTAL	11708.48		63.05			
ANNUAL MEAN	32.1		.17		43.4	
HIGHEST ANNUAL MEAN					182	1992
LOWEST ANNUAL MEAN					.17	1996
HIGHEST DAILY MEAN	1450	Jun 1	16	Sep 21	4960	Dec 21 1991
LOWEST DAILY MEAN	.02	Oct 29	.00	Feb 23	.00	Feb 7 1978
ANNUAL SEVEN-DAY MINIMUM	.04	Oct 24	.00	Feb 23	.00	Feb 7 1978
INSTANTANEOUS PEAK FLOW			109	Sep 21	14900	Dec 20 1991
INSTANTANEOUS PEAK STAGE			3.33	Sep 21	18.10	Dec 20 1991
ANNUAL RUNOFF (AC-FT)	23220		125		31460	
ANNUAL RUNOFF (CFSM)	.36		.002		.48	
ANNUAL RUNOFF (INCHES)	4.86		.03		6.58	
10 PERCENT EXCEEDS	57		.45		82	
50 PERCENT EXCEEDS	16		.03		3.8	
90 PERCENT EXCEEDS	.13		.00		.02	

08155200 BARTON CREEK AT STATE HIGHWAY 71 NEAR OAK HILL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: April 1978 to September 1982, February 1989 to current year. Pesticide analyses: April 1978 to September 1982, January 1993 to current year. Radiochemical analyses: October 1979 to September 1980.

REMARKS.--Samples collected during storm events are collected by automatic sampler.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)
MAR 05...	1002	0.01	497	7.5	16.5	4	0.10	8.4	88	<10

DATE	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
MAR 05...	0.3	400	1200	180	2	8	0	0.010	<0.050	0.020

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)
MAR 05...	<0.20	<0.010	<0.010	<0.010	3.8	0.200	<0.100	<1	<1

08155240 BARTON CREEK AT LOST CREEK BOULEVARD, AUSTIN, TX

LOCATION.--Lat 30°16'26", long 97°50'40", Travis County, Hydrologic Unit 12090205, 1.4 mi southwest of intersection of Lost Creek Boulevard and Loop 360, and 6.2 mi west of State Capitol Building in Austin.

DRAINAGE AREA.--107 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1979 to September 1980 (periodic gage heights and discharge measurements only). December 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 600 ft above sea level, from topographic map.

REMARKS.--Records poor. No known regulation or diversions. No flow at times. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of May 28, 1929 was probably the highest since that date (discharge 39,400 ft³/s), based on slope-area measurement of peak flow at a site about 2.1 mi downstream.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.62	3.2	1.2	1.1	.86	1.7	.77	.61	.68	.42	e.06	34
2	.62	1.2	1.3	1.1	.90	1.2	.84	.55	.49	.39	e.06	7.8
3	.62	.63	1.3	1.0	.91	.92	.83	.52	.43	.34	e.05	5.2
4	.62	.66	1.2	1.1	.95	.91	.87	.45	.49	.32	e.05	4.9
5	.61	.65	1.2	1.0	.96	1.1	1.1	.42	.42	.29	e.04	4.9
6	.58	.77	1.2	.99	1.0	1.0	1.8	.37	.42	.28	e.04	4.2
7	.58	.92	1.1	.98	1.0	.92	1.3	.35	12	.26	e.04	3.8
8	.59	.90	1.3	.94	1.2	.76	1.1	.34	4.9	.24	e.20	3.6
9	.58	.92	1.3	.97	1.0	.80	1.0	.32	2.2	.21	e.18	3.3
10	.53	.96	1.3	1.2	1.0	.74	1.0	.35	1.6	e.20	e.18	3.2
11	.49	.82	1.2	.99	.98	.74	.97	.32	1.3	e.19	e.17	3.1
12	.47	.79	1.2	1.0	.94	.71	.94	.30	1.2	e.18	e.17	3.1
13	.47	.83	1.2	.98	.97	.77	.90	.28	1.2	e.17	e.17	3.2
14	.45	.85	1.2	1.0	1.1	.89	.85	.25	1.2	e.16	.16	3.1
15	.44	.83	1.2	1.0	1.1	.75	.74	.24	1.1	e.15	.16	2.8
16	.43	.82	1.1	.93	.83	.73	.72	.23	.92	e.14	.16	2.5
17	.41	2.3	1.2	1.0	.72	.76	.64	.23	.78	e.13	.16	1.9
18	.40	3.4	1.2	.88	.77	.85	.68	.23	.68	e.12	.17	1.6
19	.38	1.7	1.1	.79	.85	.70	.69	.21	.59	e.10	.18	1.5
20	.35	1.7	1.2	.89	.88	.58	.64	.21	.52	e.10	.17	2.6
21	.35	1.5	1.1	.91	.96	.55	.65	.21	.48	e.09	.18	14
22	.36	1.3	1.3	.98	.97	.59	.74	.21	.43	e.09	.28	5.8
23	.35	1.2	1.2	1.0	.87	.60	.73	.21	.40	e.09	.52	3.9
24	.34	1.2	1.1	.90	.89	.63	.71	.19	.35	e.09	.27	2.9
25	.37	1.3	1.2	.88	.92	.56	.72	.19	.43	e.09	.20	3.2
26	.37	1.2	1.1	.91	.94	.56	.70	.19	2.9	e.08	.29	3.1
27	.37	1.2	1.2	.88	.98	.82	.67	.35	2.4	e.08	.32	3.0
28	.36	1.0	1.1	.91	.94	.98	.67	.18	.76	e.08	.33	2.9
29	.35	1.1	1.1	.97	1.5	.85	.60	.20	.54	e.08	.65	2.3
30	.37	1.1	1.2	.99	---	.82	.55	3.3	.47	e.07	1.6	2.0
31	.49	---	1.2	.90	---	.76	---	1.1	---	e.07	11	---
TOTAL	14.32	36.95	37.0	30.07	27.89	25.25	25.12	13.11	42.28	5.30	18.21	143.4
MEAN	.46	1.23	1.19	.97	.96	.81	.84	.42	1.41	.17	.59	4.78
MAX	.62	3.4	1.3	1.2	1.5	1.7	1.8	3.3	12	.42	11	34
MIN	.34	.63	1.1	.79	.72	.55	.55	.18	.35	.07	.04	1.5
AC-FT	28	73	73	60	55	50	50	26	84	11	36	284
CFSM	.00	.01	.01	.01	.01	.01	.01	.00	.01	.00	.01	.04
IN.	.00	.01	.01	.01	.01	.01	.01	.00	.01	.00	.01	.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1996, BY WATER YEAR (WY)

MEAN	9.49	8.07	104	72.3	112	72.6	45.4	102	73.2	8.07	4.29	4.24
MAX	54.3	33.8	627	307	581	381	108	264	249	23.0	23.2	25.6
(WY)	1995	1995	1992	1992	1992	1992	1991	1992	1992	1992	1991	1991
MIN	.10	.23	.22	.40	.96	.81	.84	.42	1.41	.17	.24	.069
(WY)	1994	1990	1990	1990	1996	1996	1996	1996	1996	1996	1993	1993

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1989 - 1996	
ANNUAL TOTAL	17338.32		418.90			
ANNUAL MEAN	47.5		1.14		53.4	
HIGHEST ANNUAL MEAN					212	1992
LOWEST ANNUAL MEAN					1.14	1996
HIGHEST DAILY MEAN	1910	Jun 1	34	Sep 1	7000	Dec 21 1991
LOWEST DAILY MEAN	.34	Oct 24	.04	Aug 5	.00	Aug 24 1993
ANNUAL SEVEN-DAY MINIMUM	.36	Oct 20	.05	Aug 1	.00	Aug 24 1993
INSTANTANEOUS PEAK FLOW			161	Aug 31	16400	Dec 21 1991
INSTANTANEOUS PEAK STAGE			3.39	Aug 31	12.90	Dec 21 1991
ANNUAL RUNOFF (AC-FT)	34390		831		38710	
ANNUAL RUNOFF (CFSM)	.44		.011		.50	
ANNUAL RUNOFF (INCHES)	6.03		.15		6.79	
10 PERCENT EXCEEDS	86		2.1		114	
50 PERCENT EXCEEDS	20		.82		4.4	
90 PERCENT EXCEEDS	.53		.18		.23	

e Estimated

08155240 BARTON CREEK AT LOST CREEK BOULEVARD, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: December 1988 to current year. Pesticide analyses: January 1993 to current year.

REMARKS.--Samples collected during storm events are collected by automatic sampler.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)
MAR											
05...	1043	1.1	790	7.5	17.0	4	0.60	8.2	87	13	0.6

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
MAR											
05...	25	48	210	2	9	0	0.050	0.050	0.010	0.060	0.060

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)
MAR										
05...	0.020	<0.20	0.010	<0.010	<0.010	2.4	0.100	<0.100	<1	<1

08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX

LOCATION.--Lat 30°14'40", long 97°48'07", Travis County, Hydrologic Unit 12090205, on Loop 360, 0.9 mi west of the intersection of Ben White and Lamar Boulevards, and 4.3 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--116 mi².

PERIOD OF RECORD.--June 1975 to January 1977 (operated as a flood-hydrograph partial-record station only), February 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 510.32 ft above sea level (Texas Department of Transportation bench mark).

REMARKS.--No estimated daily discharges. Records poor. There are no known regulations or diversions. Gage height and rain gage telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of May 28, 1929, was probably the highest since that date (discharge 39,400 ft³/s), based on a slope-area measurement of peak flow at a site about 2 mi upstream.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	38	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	1.5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	16	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.06	.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	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.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	1.9
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50
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	.12
24	.00	.00	.00	.00	.00	.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	2.7	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	3.3	.00	.00	.00	.00
31	23	---	.00	.00	---	.00	---	.00	---	.00	.91	---
TOTAL	23.00	39.50	0.00	0.00	0.00	0.00	0.00	3.30	18.76	0.00	0.91	2.66
MEAN	.74	1.32	.000	.000	.000	.000	.000	.11	.63	.000	.029	.089
MAX	23	38	.00	.00	.00	.00	.00	3.3	16	.00	.91	1.9
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	46	78	.00	.00	.00	.00	.00	6.5	37	.00	1.8	5.3
CFSM	.01	.01	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
IN.	.01	.01	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1996, BY WATER YEAR (WY)

MEAN	18.3	9.05	81.0	41.1	65.9	51.9	44.5	81.9	147	7.54	.86	.59
MAX	134	77.3	865	281	609	342	319	321	1142	73.1	13.9	7.57
(WY)	1985	1986	1992	1992	1992	1992	1977	1992	1987	1981	1991	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1978	1978	1978	1978	1978	1978	1978	1978	1978	1977	1977	1977

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1977 - 1996	
ANNUAL TOTAL	15089.30		88.13			
ANNUAL MEAN	41.3		.24		45.1	
HIGHEST ANNUAL MEAN					229	1992
LOWEST ANNUAL MEAN					.000	1978
HIGHEST DAILY MEAN	2980	Jun 1	38	Nov 1	10800	Dec 21 1991
LOWEST DAILY MEAN	.00	Feb 20	.00	Oct 1	.00	Apr 11 1977
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 13	.00	Oct 1	.00	Jun 10 1977
INSTANTANEOUS PEAK FLOW			838	Nov 1	18100	May 25 1981
INSTANTANEOUS PEAK STAGE			5.58	Nov 1	15.03	May 25 1981
ANNUAL RUNOFF (AC-FT)	29930		175		32700	
ANNUAL RUNOFF (CFSM)	.36		.002		.39	
ANNUAL RUNOFF (INCHES)	4.84		.03		5.29	
10 PERCENT EXCEEDS	55		.00		92	
50 PERCENT EXCEEDS	7.0		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

08155500 BARTON SPRINGS AT AUSTIN, TX

LOCATION.--Lat 30°15'48", long 97°46'16", Travis County, Hydrologic Unit 12090205, at ground-water well (YD 58-42-903), on right bank 0.4 mi upstream from Barton Springs Road bridge over Barton Creek, 0.7 mi upstream from mouth, and 1.8 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--Not applicable. Only springflow is published for this station.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1894 to April 1917, and October 1918 to February 1978 (discharge measurements only), May 1917 to September 1918 (published as "Barton Creek at Austin, Texas"), March 1978 to 1994 (mean daily discharge), and discharge at 1200 hours October 1994 to September 1995.

GAGE.--Water-stage recorder. Datum of gage, at ground-water well (YD 58-42-903), is 462.34 ft above sea level. May 1917 to September 1918, nonrecording gage at site 1,000 ft downstream at different datum.

REMARKS.--Records poor. Only springflow from the Edwards and associated limestones in the Balcones Fault Zone is published for this station. Operation of Barton Springs pool significantly affects level recorded in well. Pool is drained at closing and allowed to fill after cleaning operations. Under normal conditions gage height is in direct relation with discharge. Due to the interaction of Barton Springs Pool, gage height is inversely related to discharge and this creates extensive problems when computing daily discharges. Determination of flow from spring is considered best when pool/well level has stabilized at 1200 hrs. Beginning 1995, daily flow has been determined using the recorded level at 1200 hrs.

EXTREMES FOR PERIOD OF RECORD (DISCHARGE MEASUREMENTS ONLY).--Maximum measured discharge, 166 ft^3/s May 10, 1941; minimum measured, 9.6 ft^3/s Mar. 29, 1956.

EXTREMES FOR PERIOD (1917-18).--Maximum daily spring discharge, 24 ft^3/s Apr. 20, 21, 1918; minimum daily, 12 ft^3/s Feb. 25, 1918.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	55	42	34	30	e22	26	24	26	26	e20	26
2	57	56	43	34	30	21	26	24	26	e25	e20	26
3	55	56	43	34	30	23	25	21	26	e24	e19	26
4	53	55	43	34	30	e23	25	21	26	e23	e19	26
5	52	55	43	34	30	e22	26	21	25	22	19	26
6	50	55	42	34	29	e22	28	19	25	22	e18	25
7	50	53	42	34	29	e21	29	19	33	e23	e18	25
8	50	53	41	33	e29	e21	26	19	34	24	18	25
9	49	52	42	33	28	21	26	20	31	e22	e18	28
10	51	50	42	33	29	22	25	20	31	e21	18	35
11	50	49	42	e33	29	23	25	21	28	21	18	35
12	50	49	42	33	29	22	25	20	26	e20	19	35
13	48	49	42	33	29	23	26	20	26	20	e18	33
14	49	49	41	33	29	24	26	19	25	21	e18	33
15	50	49	39	33	e29	24	25	19	25	21	18	34
16	49	48	39	33	27	25	25	19	24	e20	e18	34
17	50	49	40	32	28	26	24	20	24	e19	e18	34
18	47	49	39	e32	28	26	25	19	23	20	18	34
19	50	49	40	32	e28	25	24	19	24	e19	18	34
20	51	49	39	33	e27	25	25	19	24	e19	17	35
21	51	48	39	32	e26	25	25	19	24	e19	17	41
22	52	48	37	31	e24	25	25	19	24	19	29	41
23	52	48	34	31	e22	26	24	19	24	e19	30	39
24	51	48	34	31	21	26	24	19	24	19	34	36
25	52	47	34	e31	23	25	24	19	24	20	35	36
26	52	47	34	30	e24	24	23	19	25	e21	27	36
27	48	47	34	30	e24	25	23	26	29	21	27	35
28	48	46	34	30	e23	26	24	26	27	21	26	35
29	48	46	34	30	e22	25	26	24	26	21	25	35
30	48	46	34	30	---	25	25	24	26	e20	24	34
31	50	---	34	30	---	26	---	25	---	19	25	---
TOTAL	1571	1500	1208	1000	786	739	755	642	785	651	666	977
MEAN	50.7	50.0	39.0	32.3	27.1	23.8	25.2	20.7	26.2	21.0	21.5	32.6
MAX	58	56	43	34	30	26	29	26	34	26	35	41
MIN	47	46	34	30	21	21	23	19	23	19	17	25
AC-FT	3120	2980	2400	1980	1560	1470	1500	1270	1560	1290	1320	1940

e Estimated

08155500 BARTON SPRINGS AT AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1903, June 1941 to February 1959. Chemical and biochemical analyses: December 1978 to current year. Radiochemical analyses: January to September 1980. Organics analyses: December 1978 to November 1994.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
MAR 05...	1145	8.3	713	6.9	21.0	<1	0.20	5.4	62	<10	0	K5
AUG 20...	0920	17	796	6.8	21.5	5	0.30	4.2	48	17	0.1	K11

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
MAR 05...	K10	320	49	84	25	27	0.7	1.6	270	34	44	0.40
AUG 20...	60	300	45	80	24	38	1	1.8	260	51	64	0.30

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
MAR 05...	11	396	<1	<1	1.50	<0.010	1.50	1.50	<0.015	<0.20	<0.010	<0.010
AUG 20...	11	434	4	<1	1.50	<0.010	1.50	1.50	0.060	<0.20	<0.010	<0.010

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)
MAR 05...	<0.010	3.8	<1	62	<0.50	<1	<1.0	<5.0	<3.0	<10	<3.0	<1
AUG 20...	<0.010	0.20	<1	64	0.80	<1	<1.0	<5.0	<3.0	<10	3.0	<1

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
MAR 05...	40	22	<1.0	<0.1	<10	<10	<1	<1.0	2300	<6	<10	<3.0
AUG 20...	<10	31	<1.0	<0.1	<10	<10	<1	<1.0	3200	<6	<10	14

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX

LOCATION.--Lat 30°16'35", long 97°45'00", Travis County, Hydrologic Unit 12090205, on left bank at downstream side of bridge at 12th Street, and 0.6 mi west of the State Capitol Building in Austin.

DRAINAGE AREA.--12.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1974 to March 1975, periodic discharge measurement, periodic QW sample collection and associated peak discharges along with annual maximum. April 1975 to September 1984, operated as a flood-hydrograph partial-record site. October 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 455.33 ft above sea level.

REMARKS.--Records fair. There is no known regulation or diversion. The station is equipped with an automatic water-quality sampler.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 4	0615	1,800	9.60	Aug. 25	unknown	3,570	12.91
June 7	0845	1,760	9.51	Sept. 18	2300	1,250	7.68
Aug. 19	1400	1,360	7.95	Sept. 24	1715	1,060	7.05
Aug. 24	1145	3,730	13.20				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	74	.00	.00	.00	.11	.00	.00	.37	.00	.00	34
2	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.2
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.51
4	.00	10	.00	.00	.00	.00	.00	.00	86	.00	.00	.29
5	.00	.06	.00	.00	.00	.00	4.2	.00	2.1	.00	.00	.11
6	.00	.00	.00	.00	.00	.00	10	.00	.00	.00	.00	.07
7	.00	.00	.00	.00	.00	.00	.00	.00	125	.00	.00	.05
8	.00	.00	.04	.00	.00	.00	.00	.00	7.6	.00	.00	.04
9	.00	.00	.06	.00	.00	.00	.00	.00	3.1	.00	.06	7.3
10	.00	.00	.00	.00	.00	.00	.00	.00	1.9	.00	.00	.38
11	.00	.00	.00	.00	.00	.00	.00	.00	1.6	.00	23	.06
12	.00	.00	.00	.00	.00	.00	.00	.00	1.6	.00	1.3	.06
13	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.05
14	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.04
15	.00	.00	.00	.00	.00	.00	.00	.00	.83	.00	.00	.04
16	.00	.00	.00	.00	.00	.00	.00	.00	.46	.00	.00	.04
17	.00	35	1.9	.00	.00	.00	.00	.00	.08	.00	.00	.04
18	.00	2.4	.02	.00	.00	.00	.00	.00	.00	.00	.00	43
19	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	64	36
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.47	24
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	14
22	.00	.00	.00	.00	.00	.00	.02	.00	.83	.00	4.0	1.7
23	.00	.00	.00	.00	.00	.00	.14	.00	6.4	.00	55	.95
24	.00	.00	.00	.00	.00	.00	.00	.00	3.6	.00	467	54
25	.00	.00	.00	.00	.00	.00	.00	.00	3.9	.00	e400	6.9
26	.00	.00	.00	.00	.00	.00	.00	.00	68	.00	e30	1.1
27	.00	.00	.00	.00	.00	.00	.00	29	5.4	.00	5.4	.34
28	.00	.00	.00	.00	.00	.14	.01	.33	.53	.00	5.2	.10
29	.00	.00	.00	.00	2.0	.04	.09	.00	.05	.00	34	.05
30	.00	.00	.00	.00	---	.00	.00	53	.01	.00	75	.03
31	7.2	---	.00	.00	---	.07	---	1.8	---	.00	43	---
TOTAL	7.20	121.53	2.02	0.00	2.00	0.36	14.46	84.13	322.06	0.00	1207.43	227.45
MEAN	.23	4.05	.065	.000	.069	.012	.48	2.71	10.7	.000	38.9	7.58
MAX	7.2	74	1.9	.00	2.0	.14	10	53	125	.00	467	54
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03
AC-FT	14	241	4.0	.00	4.0	.7	29	167	639	.00	2390	451
CFSM	.02	.33	.01	.00	.01	.00	.04	.22	.87	.00	3.17	.62
IN.	.02	.37	.01	.00	.01	.00	.04	.25	.97	.00	3.65	.69

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1996, BY WATER YEAR (WY)

MEAN	11.5	5.83	11.5	5.58	5.97	5.42	5.19	17.8	11.6	2.14	7.40	5.83
MAX	42.6	14.9	70.8	22.6	29.2	15.5	16.0	38.7	46.1	11.9	38.9	12.5
(WY)	1985	1986	1992	1991	1992	1995	1991	1995	1987	1987	1996	1986
MIN	.23	.000	.065	.000	.069	.012	.48	2.71	2.57	.000	.000	.033
(WY)	1996	1989	1996	1996	1996	1996	1996	1996	1994	1989	1993	1993

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1985 - 1996	
ANNUAL TOTAL	3496.74		1988.64			
ANNUAL MEAN	9.58		5.43		8.01	
HIGHEST ANNUAL MEAN					15.7	1992
LOWEST ANNUAL MEAN					3.26	1988
HIGHEST DAILY MEAN	435	May 30	467	Aug 24	948	Dec 20 1991
LOWEST DAILY MEAN	.00	Jan 5	.00	Oct 1	.00	Oct 1 1984
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 17	.00	Oct 1	.00	May 6 1985
INSTANTANEOUS PEAK FLOW			3730	Aug 24	16000	May 24 1981
INSTANTANEOUS PEAK STAGE			13.20	Aug 24	23.11	May 24 1981
ANNUAL RUNOFF (AC-FT)	6940		3940		5800	
ANNUAL RUNOFF (CFSM)	.78		.44		.65	
ANNUAL RUNOFF (INCHES)	10.58		6.01		8.85	
10 PERCENT EXCEEDS	13		3.2		13	
50 PERCENT EXCEEDS	.00		.00		.03	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Chemical and biochemical analyses: February 1943, January 1975 to current year. Pesticide analyses: January 1975 to September 1985, January 1993 to current year. Radiochemical analyses: April 1980. Samples collected during storm events are collected by automatic sampler.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
MAY												
27...	1051	148	347	7.3	--	80	1000	540	>24	120000	150000	--
27...	1106	447	301	7.4	--	85	1400	400	>25	100000	260000	--
27...	1121	325	299	7.4	--	90	760	270	>25	120000	370000	--
27...	1136	238	252	7.4	--	--	--	--	>25	120000	240000	--
27...	1157	171	224	7.4	--	80	490	190	>23	66000	150000	70
27...	1235	109	206	7.4	23.0	100	170	140	>20	52000	120000	--
28...	0613	1.6	396	7.5	--	40	1.0	28	2.7	50000	32000	--
31...	0615	2.6	391	7.4	25.5	25	0.80	13	1.3	9600	K4000	160

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAY												
27...	--	--	--	--	--	--	64	--	--	--	--	--
27...	--	--	--	--	--	--	62	--	--	--	--	--
27...	--	--	--	--	--	--	48	--	--	--	--	--
27...	--	--	--	--	--	--	51	--	--	--	--	--
27...	31	25	1.9	4.9	0.3	4.2	39	35	8.6	0.20	1.7	109
27...	--	--	--	--	--	--	41	--	--	--	--	--
28...	--	--	--	--	--	--	82	--	--	--	--	--
31...	70	59	4.0	9.6	0.3	3.8	94	64	15	0.20	6.3	219

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
MAY												
27...	3590	740	2850	0.870	0.870	0.060	0.930	0.930	0.260	9.5	8.3	8.6
27...	2940	396	2540	0.920	0.920	0.050	0.970	0.970	0.290	10	8.9	9.2
27...	2200	500	1700	0.840	0.840	0.060	0.900	0.900	0.030	4.7	3.8	3.8
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	1040	252	788	0.800	0.800	0.040	0.840	0.840	0.290	4.6	3.5	3.8
27...	690	250	440	0.710	0.710	0.030	0.740	0.740	0.030	2.3	1.6	1.6
28...	9	10	0	0.390	0.390	0.030	0.420	0.420	0.040	1.0	0.56	0.60
31...	4	10	0	--	--	<0.010	--	<0.050	0.020	0.40	0.38	0.40

DATE	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)
MAY											
27...	2.00	0.150	0.050	0.15	--	--	--	--	--	--	--
27...	3.00	0.090	0.020	0.06	--	--	--	--	--	--	--
27...	0.880	0.080	0.010	0.03	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.980	0.160	0.090	0.28	--	--	2	19	<0.50	<1.0	<5.0
27...	0.310	0.140	0.040	0.12	0.200	<0.100	--	--	--	--	--
28...	0.110	0.060	0.050	0.15	0.300	0.100	--	--	--	--	--
31...	0.050	0.040	0.030	0.09	--	--	2	36	<0.50	<1.0	<5.0

DATE	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)
MAY											
27...	--	--	--	180	--	--	--	--	--	--	--
27...	--	--	--	130	--	--	--	--	--	--	--
27...	--	--	--	75	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	<3.0	<10	61	40	<10	6	2.0	<0.1	<10	<10	<1
27...	--	--	--	27	--	--	--	--	--	--	--
28...	--	--	--	1	--	--	--	--	--	--	--
31...	<3.0	<10	23	<1	<10	12	15	<0.1	<10	<10	<1

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	PCNS UNFILT RECOVER (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L)	P,P'-DDD UNFILT RECOVER (UG/L)	DDE, TOTAL (UG/L)	P,P'-DDT UNFILT RECOVER (UG/L)
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	0.200	0.100	0.010	0.100	0.010	0.010	0.020
27...	<1.0	110	<6	5.0	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
31...	<1.0	230	<6	<3.0	--	--	--	--	--	--	--

DATE	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DISUL-FOTON UNFILT RECOVER (UG/L)	ENDO-SULFAN, I TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.110	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.020	0.010
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL PARA-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.010	0.010	0.010	0.100	0.010	0.010	1.00	0.010	0.260	0.060	0.010
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--

0815/900 TOWN LAKE AT AUSTIN, TX

LOCATION.--Lat 30°14'56", long 97°43'03", Travis County, Hydrologic Unit 12090205, at Longhorn Dam on the Colorado River at Austin, 1.5 mi downstream from Interstate Highway 35, and 2.3 mi southeast of the State Capitol Building in Austin.

DRAINAGE AREA.--39,003 mi², approximately, of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1975 to August 1990. Chemical and biochemical analyses: October 1990 to current year. Trace metal and Pesticide analyses of bed sediments at selected sites February 1991 to current year.

301559097424801 - TOWN LAKE AR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
27...	1416	1.00	522	7.9	21.5	8.0	93
27...	1418	10.0	525	7.8	21.0	7.6	87
27...	1420	23.0	525	7.7	21.0	7.4	85
28...	0834	1.00	511	7.7	21.0	7.0	80
28...	0836	10.0	510	7.6	20.5	6.7	76
28...	0838	24.0	509	7.6	20.5	6.5	74
29...	0811	1.00	521	7.8	21.0	7.1	81
29...	0813	10.0	521	7.8	20.5	6.8	77
29...	0815	24.0	521	7.7	20.5	6.6	75

301500097424801 - TOWN LAKE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
MAY												
27...	1427	1.00	522	8.0	21.5	1.80	2.8	8.0	93	18	0.9	K200
27...	1429	10.0	523	7.9	20.5	--	--	7.8	89	--	--	--
27...	1431	20.0	522	7.9	20.5	--	--	7.7	87	--	--	--
27...	1433	27.0	518	7.8	20.5	--	7.9	7.6	86	--	1.0	--
28...	0845	1.00	511	7.8	21.0	0.91	0.50	6.9	79	<10	1.0	10000
28...	0847	10.0	510	7.7	20.5	--	--	6.7	76	--	--	--
28...	0849	20.0	504	7.6	20.5	--	--	6.3	72	--	--	--
28...	0851	25.0	506	7.6	20.5	--	--	6.3	72	--	0.8	--
29...	0820	1.00	522	7.9	21.0	2.40	0.80	7.1	81	14	0.7	840
29...	0822	10.0	522	7.9	20.5	--	--	7.1	80	--	--	--
29...	0824	20.0	521	7.8	20.5	--	--	6.9	78	--	--	--
29...	0826	25.0	521	7.8	20.5	--	1.9	6.7	76	--	0.6	--
AUG												
06...	0815	--	--	--	--	--	--	--	--	--	--	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	CARBON, INORGANIC, TOT IN BOT MAT (G/KG AS C)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (GM/KG AS C)
MAY											
27...	K60	170	303	6	0.200	--	<0.010	0.200	0.200	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	140	294	14	0.200	--	<0.010	0.200	0.200	--	--
28...	1700	140	298	2	0.140	--	<0.010	0.140	0.140	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	140	296	11	0.160	--	<0.010	0.160	0.160	--	--
29...	K100	150	307	1	0.180	--	<0.010	0.180	0.180	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	150	306	2	0.170	0.170	0.010	0.180	0.180	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	45	73

08157900 TOWN LAKE AT AUSTIN, TX--Continued

301500097424801 - TOWN LAKE AC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS)
MAY											
27...	0.020	0.50	0.28	0.30	<0.010	<0.010	<0.010	110	0.500	<0.100	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.040	0.60	0.36	0.40	0.020	<0.010	<0.010	4.0	--	--	--
28...	0.020	0.34	0.18	0.20	<0.010	<0.010	<0.010	3.0	<0.100	<0.100	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	0.030	0.46	0.27	0.30	<0.010	0.010	<0.010	29	--	--	--
29...	0.030	0.58	0.37	0.40	<0.010	<0.010	<0.010	3.2	0.200	<0.100	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	0.050	0.48	0.25	0.30	0.020	0.010	<0.010	3.8	--	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	--	5

DATE	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	COPPER, DISSOLVED (UG/L AS CU)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN)	ALUMINUM, RECOV. FM BOTTOM MATERIAL (UG/G)
MAY											
27...	--	--	2.0	--	--	<1.0	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	2.0	--	--	<1.0	--	--	--	--	--
28...	--	--	1.0	--	--	<1.0	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	1.0	--	--	<1.0	--	--	--	--	--
29...	--	--	1.0	--	--	<1.0	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	1.0	--	--	<1.0	--	--	--	--	--
AUG											
06...	3	2	--	48	2100	--	120	720	0.06	230	930

DATE	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	P,P'-DDD, RECOVER IN BOTTOM MATERIAL (UG/KG)	P,P'-DDE, RECOVER IN BOTTOM MATERIAL (UG/KG)	P,P'-DDT, RECOVER IN BOTTOM MATERIAL (UG/KG)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN I TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	15.0	<1.00	<0.200	21.0	8.30	19.0	0.300	1.30	<0.100	<0.600	<0.100

08157900 TOWN LAKE AT AUSTIN, TX--Continued

301500097424801 - TOWN LAKE AC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PER-THANE IN BOT-TOM MA-TERIAL (UG/KG)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	<0.100	<0.100	<0.800	<0.100	<1.00	<10.0	94	99	100	100	100

301503097424701 - TOWN LAKE AL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
MAY							
27...	1447	1.00	516	7.9	21.0	7.7	88
27...	1449	10.0	517	7.9	20.5	7.6	86
27...	1451	17.0	519	7.9	20.5	7.6	86
28...	0900	1.00	514	7.8	21.0	7.0	80
28...	0902	10.0	515	7.8	20.5	7.0	79
28...	0904	17.0	516	7.8	20.5	7.0	79
29...	0838	1.00	524	8.0	21.0	7.4	85
29...	0840	10.0	524	7.9	20.5	7.4	84
29...	0842	16.0	523	7.9	20.5	7.4	84

301500097440801 - TOWN LAKE BR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
MAY							
27...	1503	1.00	489	7.8	20.5	7.3	83
27...	1505	10.0	492	7.8	20.5	7.3	83
27...	1507	20.0	498	7.8	20.5	7.3	83
27...	1509	27.0	498	7.8	20.5	7.3	83
28...	0912	1.00	521	7.8	20.0	6.9	77
28...	0914	10.0	521	7.8	20.0	6.9	77
28...	0916	20.0	520	7.7	20.0	6.9	77
28...	0918	26.0	521	7.8	20.0	7.0	79
29...	0902	1.00	523	7.9	20.0	7.1	80
29...	0904	10.0	523	7.9	19.5	7.1	79
29...	0906	20.0	522	7.9	19.5	7.1	79
29...	0908	26.0	522	7.9	20.0	7.1	80

08157900 TOWN LAKE AT AUSTIN, TX--Continued

301504097440901 - TOWN LAKE BC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	CARBON, INORGANIC, TOT IN BOT MAT (G/KG AS C)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (GM/KG AS C)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD)
MAY											
27...	1513	1.00	474	7.8	21.5	7.2	84	--	--	--	--
27...	1515	10.0	496	7.8	20.5	7.2	82	--	--	--	--
27...	1517	20.0	495	7.8	20.5	7.2	82	--	--	--	--
27...	1519	29.0	491	7.8	20.5	7.2	82	--	--	--	--
28...	0920	1.00	522	7.8	20.0	6.9	77	--	--	--	--
28...	0922	10.0	522	7.8	20.0	6.9	77	--	--	--	--
28...	0924	20.0	522	7.8	20.0	6.9	77	--	--	--	--
28...	0926	28.0	523	7.7	20.0	6.9	77	--	--	--	--
29...	0912	1.00	523	7.9	20.0	7.1	80	--	--	--	--
29...	0914	10.0	523	7.9	20.0	7.1	80	--	--	--	--
29...	0916	20.0	523	7.9	20.0	7.0	79	--	--	--	--
29...	0918	29.0	523	7.9	19.5	7.0	78	--	--	--	--
AUG											
06...	0840	--	--	--	--	--	--	42	77	6	2

DATE	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN)	ALUMINUM, RECOV. FM BOTTOM MATERIAL (UG/G)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG)
MAY										
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	3	39	2100	90	440	0.09	190	860	12.0	<1.00

DATE	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	P,P'-DDD, RECOVER IN BOTTOM MATERIAL (UG/KG)	P,P'-DDE, RECOVER IN BOTTOM MATERIAL (UG/KG)	P,P'-DDT, RECOVER IN BOTTOM MATERIAL (UG/KG)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN I TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)
MAY										
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	<0.200	16.0	7.80	14.0	1.00	0.800	<0.100	<0.200	<0.100	<0.100

08157900 TOWN LAKE AT AUSTIN, TX--Continued

301504097440901 - TOWN LAKE BC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)	PERTHANE IN BOTTOM MATERIAL (UG/KG)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM
MAY										
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	<0.100	<0.800	<0.100	<1.00	<10.0	89	93	95	96	96

301544097445201 - TOWN LAKE CR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
27...	1530	1.00	515	7.8	20.5	7.5	85
27...	1532	10.0	515	7.8	20.5	7.5	85
27...	1534	18.0	521	7.9	20.5	7.7	88
28...	0932	1.00	523	7.8	20.0	6.9	77
28...	0934	10.0	522	7.8	20.0	6.9	77
28...	0936	18.0	523	7.8	20.5	7.1	81
29...	0930	1.00	523	7.9	20.0	7.1	80
29...	0932	10.0	523	7.9	20.0	7.1	80
29...	0934	18.0	523	7.9	20.0	7.1	80

301546097445101 - TOWN LAKE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
MAY												
27...	1542	1.00	457	7.9	21.0	0.15	0.50	7.6	87	11	0.4	72000
27...	1544	10.0	517	7.9	20.5	--	--	7.7	88	--	--	--
27...	1546	16.0	514	7.9	20.5	--	1.0	7.6	86	--	0.6	--
28...	0938	1.00	521	7.8	20.0	2.56	36	7.0	79	13	4.0	760
28...	0940	10.0	521	7.8	20.0	--	--	7.0	79	--	--	--
28...	0942	16.0	521	7.8	20.0	--	--	7.1	80	--	1.0	--
29...	0942	1.00	522	7.9	19.5	2.30	--	7.1	79	--	0.6	K170
29...	0944	10.0	522	7.9	19.5	--	--	7.1	79	--	--	--
29...	0946	16.0	522	7.9	19.5	--	1.2	7.0	78	--	1.0	--
AUG												
06...	0852	--	--	--	--	--	--	--	--	--	--	--

08157900 TOWN LAKE AT AUSTIN, TX--Continued

301546097445101 - TOWN LAKE CC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	CARBON, INORGANIC, TOT IN BOT MAT (G/KG AS C)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (GM/KG AS C)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)
MAY												
27...	K38000	130	313	2	0.250	--	<0.010	0.250	0.250	--	--	0.090
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	140	304	10	0.160	--	<0.010	0.160	0.160	--	--	0.020
28...	K220	150	283	62	0.270	0.270	0.010	0.280	0.280	--	--	0.090
28...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	150	292	14	0.200	--	<0.010	0.200	0.200	--	--	0.030
29...	K90	150	303	--	0.200	--	<0.010	0.200	0.200	--	--	0.030
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	150	292	4	0.170	--	<0.010	0.170	0.170	--	--	0.030
AUG												
06...	--	--	--	--	--	--	--	--	--	43	89	--

DATE	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS)
MAY											
27...	0.45	0.11	0.20	<0.010	0.010	<0.010	--	4.7	0.200	<0.100	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.46	0.28	0.30	<0.010	<0.010	<0.010	--	3.3	--	--	--
28...	1.1	0.71	0.80	0.140	0.040	0.020	0.06	5.2	0.100	<0.100	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	0.50	0.27	0.30	0.010	<0.010	<0.010	--	5.0	--	--	--
29...	0.50	0.27	0.30	<0.010	<0.010	<0.010	--	4.5	0.200	<0.100	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	0.47	0.27	0.30	<0.010	<0.010	<0.010	--	3.6	--	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	--	8

DATE	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	COPPER, DISSOLVED (UG/L AS CU)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN)	ALUMINUM, RECOV. FM BOTTOM MATERIAL (UG/G)
MAY											
27...	--	--	1.0	--	--	<1.0	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	1.0	--	--	<1.0	--	--	--	--	--
28...	--	--	2.0	--	--	<1.0	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	1.0	--	--	<1.0	--	--	--	--	--
29...	--	--	2.0	--	--	<1.0	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	2.0	--	--	<1.0	--	--	--	--	--
AUG											
06...	1	5	--	25	5800	--	70	270	0.04	140	1400

DATE	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	P,P'-DDD, RECOVER IN BOTTOM MATERIAL (UG/KG)	P,P'-DDE, RECOVER IN BOTTOM MATERIAL (UG/KG)	P,P'-DDT, RECOVER IN BOTTOM MATERIAL (UG/KG)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN I TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	9.00	<1.00	<0.400	34.0	6.80	12.0	1.40	3.40	<0.100	<0.300	<0.100

08157900 TOWN LAKE AT AUSTIN, TX--Continued

301546097445101 - TOWN LAKE CC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)	PERTHANE IN BOTTOM MATERIAL (UG/KG)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	0.400	<0.300	<0.800	<0.100	<1.00	<10.0	64	77	86	88	89

301556097452301 - TOWN LAKE DR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
27...	1603	1.00	529	7.8	20.5	7.8	89
27...	1605	13.0	527	7.8	20.5	7.5	85
28...	0955	1.00	525	7.8	20.0	6.8	76
28...	0957	13.0	526	7.7	20.0	6.8	76
29...	1000	1.00	526	7.9	20.0	6.9	77
29...	1002	13.0	526	7.9	20.0	6.9	77

301558097452201 - TOWN LAKE DC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)
MAY											
27...	1610	1.00	518	7.9	20.5	1.50	0.50	7.8	89	<10	0.6
27...	1612	10.0	518	7.9	20.5	--	--	7.8	89	--	--
27...	1614	20.0	519	7.9	20.5	--	0.80	7.8	89	--	0.8
28...	1002	1.00	519	7.8	20.0	2.59	0.50	7.0	79	10	0.7
28...	1004	10.0	519	7.8	20.0	--	--	7.0	79	--	--
28...	1006	20.0	520	7.8	20.0	--	--	7.0	79	--	0.6
29...	1008	1.00	520	8.0	19.5	2.40	1.0	7.1	79	10	0.4
29...	1010	10.0	519	8.0	19.5	--	--	7.1	79	--	--
29...	1012	20.0	520	8.0	19.5	--	2.1	7.1	79	--	0.4
AUG											
06...	0920	--	--	--	--	--	--	--	--	--	--

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	CARBON, INORGANIC, TOT IN BOT MAT (G/KG AS C)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (GM/KG AS C)
MAY											
27...	K900	K400	140	302	3	0.160	<0.010	0.160	0.160	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	150	311	7	0.150	<0.010	0.150	0.150	--	--
28...	360	170	140	296	6	0.160	<0.010	0.160	0.160	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	150	315	2	0.160	<0.010	0.160	0.160	--	--
29...	130	6	150	304	4	0.160	<0.010	0.160	0.160	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	150	304	5	0.160	<0.010	0.160	0.160	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	36	57

08157900 TOWN LAKE AT AUSTIN, TX--Continued

301558097452201 - TOWN LAKE DC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS)
MAY											
27...	0.020	0.36	0.18	0.20	<0.010	<0.010	<0.010	3.5	0.200	<0.100	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.020	0.45	0.28	0.30	<0.010	<0.010	<0.010	3.4	--	--	--
28...	0.030	0.46	0.27	0.30	<0.010	0.020	<0.010	3.7	0.200	<0.100	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	0.030	0.46	0.27	0.30	<0.010	0.010	<0.010	36	--	--	--
29...	0.030	0.56	0.37	0.40	<0.010	<0.010	<0.010	3.9	<0.100	<0.100	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	0.030	0.36	0.17	0.20	<0.010	<0.010	<0.010	3.1	--	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	--	7

DATE	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	COPPER, DIS-SOLVED (UG/L AS CU)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN)	ALUM-INUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)
MAY											
27...	--	--	1.0	--	--	<1.0	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	1.0	--	--	<1.0	--	--	--	--	--
28...	--	--	1.0	--	--	<1.0	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	1.0	--	--	<1.0	--	--	--	--	--
29...	--	--	1.0	--	--	<1.0	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	1.0	--	--	<1.0	--	--	--	--	--
AUG											
06...	<1	2	--	19	2600	--	70	370	0.05	50	870

DATE	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PCN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	P,P'-DDD, RECOVER IN BOT-TOM MA-TERIAL (UG/KG)	P,P'-DDE, RECOVER IN BOT-TOM MA-TERIAL (UG/KG)	P,P'-DDT, RECOVER IN BOT-TOM MA-TERIAL (UG/KG)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN I TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	25.0	<1.00	<0.100	3.00	3.80	7.50	0.100	<0.200	<0.100	<0.100	<0.100

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PER-THANE IN BOT-TOM MA-TERIAL (UG/KG)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	<0.200	<0.100	<0.800	<0.100	<1.00	<10.0	83	89	92	94	96

08157900 TOWN LAKE AT AUSTIN, TX--Continued

301712097470701 - TOWN LAKE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)
MAY											
27...	1648	1.00	523	7.9	20.0	1.50	0.70	8.0	90	10	0.3
27...	1650	10.0	522	7.9	20.0	--	--	8.1	91	--	--
27...	1652	17.0	522	7.9	20.0	--	0.80	8.1	91	--	0.3
28...	1026	1.00	519	7.8	19.0	2.29	0.80	7.3	80	13	0.4
28...	1028	10.0	517	7.8	19.0	--	--	7.3	80	--	--
28...	1030	17.0	518	7.8	19.0	--	--	7.3	80	--	0.5
29...	1030	1.00	520	8.0	19.5	1.50	0.70	7.4	82	14	0.4
29...	1032	10.0	518	8.0	19.5	--	--	7.4	82	--	--
29...	1034	18.0	518	8.0	19.5	--	1.3	7.4	82	--	0.3

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
MAY											
27...	K24	K20	150	305	3	0.150	<0.010	0.150	0.150	0.020	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	150	29/	2	0.160	<0.010	0.160	0.160	0.020	0.36
28...	100	K17	150	305	4	0.160	<0.010	0.160	0.160	0.020	0.36
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	140	29/	5	0.160	<0.010	0.160	0.160	0.020	0.46
29...	40	K7	150	301	3	0.160	<0.010	0.160	0.160	0.020	0.36
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	150	300	3	0.160	<0.010	0.160	0.160	0.020	0.46

DATE	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)	COPPER, DISSOLVED (UG/L AS CU)	LEAD, DISSOLVED (UG/L AS PB)
MAY										
27...	--	<0.20	<0.010	<0.010	<0.010	3.0	0.100	<0.100	1.0	<1.0
27...	--	--	--	--	--	--	--	--	--	--
27...	0.18	0.20	<0.010	<0.010	<0.010	2.9	--	--	1.0	<1.0
28...	0.18	0.20	<0.010	0.010	<0.010	3.1	0.300	<0.100	1.0	<1.0
28...	--	--	--	--	--	--	--	--	--	--
28...	0.28	0.30	<0.010	<0.010	<0.010	5.6	--	--	2.0	<1.0
29...	0.18	0.20	<0.010	<0.010	<0.010	3.2	0.500	<0.100	1.0	<1.0
29...	--	--	--	--	--	--	--	--	--	--
29...	0.28	0.30	<0.010	<0.010	<0.010	3.7	--	--	1.0	<1.0

301601097454001 - TOWN LAKE FC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
27...	1628	2.00	519	7.9	20.5	8.0	91
28...	1015	2.00	527	7.8	20.5	7.4	84
29...	1020	2.00	510	8.0	20.0	7.4	83

08158000 COLORADO RIVER AT AUSTIN, TX

LOCATION.--Lat 30°14'40", long 97°41'39", Travis County, Hydrologic Unit 12090205, on right bank 1,000 ft upstream from upstream bridge on U.S. Highway 183 in Austin, 1.4 mi downstream from Longhorn Dam, and at mile 290.3.

DRAINAGE AREA.-39,009 mi², approximately, of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--February 1898 to current year. Records of daily discharge for Dec. 13-26, 1914, and Feb. 9-17, 1915, published in WSP 408, have been found unreliable and should not be used.
Water-quality records.--Chemical analyses: October 1947 to September 1993. Specific conductance: October 1947 to September 1991. Water Temperature: October 1947 to September 1991.

REVISED RECORDS.--WSP 508: 1915(m). WSP 528: 1900(M), 1918(m). WSP 548: 1901-16. WSP 1342: Drainage area. WSP 1562: 1908, 1929(M), 1936.

GAGE.--Water-stage recorder. Datum of gage is 402.27 ft above sea level. Prior to June 19, 1939, all records collected at or near Congress Avenue bridge 3.9 mi upstream at datum 19.6 ft higher; prior to June 18, 1915, nonrecording gages, recording gages thereafter; June 20, 1939, to Oct. 16, 1963, at site 1,000 ft downstream from present site at datum 5.0 ft higher.

REMARKS.--Records fair. Since 1937, at least 10 percent of drainage area has been regulated by upstream reservoirs. Flow largely regulated by Lake Travis (station 08154500). The city of Austin diverts water for municipal use upstream from station and returns wastewater effluent downstream. There are many other diversions above Lake Buchanan for irrigation, municipal supplies, and oil field operations. Radio telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--38 years (water years 1899-1936) prior to regulation by Lake Travis, 2,711 ft³/s (1,964,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1899-1936).--Maximum discharge, 481,000 ft³/s June 15, 1935 (gage height, 50 ft, present site and datum, from floodmark).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1833, 51 ft July 7, 1869, present site and datum (adjusted to present site on basis of record for flood of June 15, 1935), determined from information concerning stage at former site furnished by Dean T.U. Taylor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2160	904	247	209	425	299	910	893	3280	2170	931	984
2	1150	e175	252	236	382	314	975	1040	3130	2120	1150	341
3	1520	e180	253	284	967	264	781	1040	3150	2130	758	784
4	1030	e160	251	265	394	276	913	1100	3390	2370	785	949
5	1240	e175	289	252	446	251	929	1120	3210	2370	848	894
6	729	e210	297	244	414	301	1080	1120	3260	2400	1690	1070
7	1090	e200	201	250	435	344	860	1110	3900	2400	1850	1110
8	916	e180	232	245	424	332	893	1740	3130	2400	1920	1100
9	688	e175	203	294	457	310	679	1640	3290	2420	2010	1390
10	680	e200	632	242	436	301	790	1580	3090	2080	2150	1110
11	641	e220	208	277	434	289	767	1640	3010	1990	2300	1160
12	537	e240	201	259	839	296	781	1640	2900	1940	2160	1200
13	953	e220	193	245	841	316	826	1660	3050	1980	2170	1030
14	718	e275	201	248	393	316	883	1640	3170	2010	2160	1010
15	629	e350	213	268	270	553	1130	1640	2810	2010	2190	707
16	630	e290	184	269	274	553	1200	1670	3110	1900	2170	1020
17	390	e600	199	241	260	539	1070	1740	3100	1610	2160	980
18	221	e650	225	236	236	566	1140	1750	3100	1420	2180	1190
19	223	e500	203	241	284	679	1150	1780	3090	1300	2500	1290
20	209	e400	179	237	239	498	1070	1810	3130	1050	2110	945
21	233	e350	222	538	366	473	1610	1970	2540	1180	2090	958
22	254	281	196	457	233	863	1600	2840	2540	1200	1800	892
23	316	259	193	326	227	812	1150	3480	2570	1040	1230	901
24	285	249	190	264	220	813	1220	3550	2500	898	3430	889
25	326	262	199	256	226	824	1250	2960	2330	823	2010	776
26	353	260	208	233	227	904	1080	2970	2110	871	1010	775
27	295	262	225	285	225	869	1400	3120	1840	697	970	774
28	282	241	210	277	224	918	1340	3090	1920	707	758	795
29	290	446	211	247	255	771	1600	2830	1840	681	955	649
30	230	305	212	263	---	892	888	3540	2220	731	807	695
31	582	---	217	443	---	904	---	2750	---	716	466	---
TOTAL	19800	9219	7146	8631	11053	16640	31965	62453	85710	49614	51718	28368
MEAN	639	307	231	278	381	537	1065	2015	2857	1600	1668	946
MAX	2160	904	632	538	967	918	1610	3550	3900	2420	3430	1390
MIN	209	160	179	209	220	251	679	893	1840	681	466	341
AC-FT	39270	18290	14170	17120	21920	33010	63400	123900	170000	98410	102600	56270

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1996#, BY WATER YEAR (WY)

MEAN	1532	1213	1274	1387	1597	1613	1988	3064	3510	2888	1939	1486
MAX	14810	8801	11660	15080	25890	13640	10420	27270	19600	36110	5862	4606
(WY)	1937	1975	1992	1992	1992	1992	1941	1957	1987	1938	1938	1974
MIN	132	38.7	43.9	46.2	49.7	55.0	389	969	1131	1102	505	285
(WY)	1965	1990	1964	1967	1964	1964	1962	1937	1993	1937	1937	1937

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1937 - 1996#	
ANNUAL TOTAL	441873		382317			
ANNUAL MEAN	1211		1045		1959	
HIGHEST ANNUAL MEAN					7464	1992
LOWEST ANNUAL MEAN					729	1964
HIGHEST DAILY MEAN	21800	Jun 1	3900	Jun 7	254000	Jul 25 1938
LOWEST DAILY MEAN	27	Mar 30	160	Nov 4	2.4	Feb 28 1984
ANNUAL SEVEN-DAY MINIMUM	149	Jan 19	183	Nov 2	18	Oct 25 1990
INSTANTANEOUS PEAK FLOW			7380	Aug 24	276000	Jul 25 1938
INSTANTANEOUS PEAK STAGE			9.25	Aug 24	32.10	Jul 25 1938
ANNUAL RUNOFF (AC-FT)	876500		758300		1419000	
10 PERCENT EXCEEDS	1690		2440		3570	
50 PERCENT EXCEEDS	635		787		1440	
90 PERCENT EXCEEDS	191		223		139	

e Estimated
Period of regulated streamflow.

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX

LOCATION.--Lat 30°15'4/", long 97°40'20", Travis County, Hydrologic Unit 12090205, on U.S. Highway 183, 1.6 mi south of the intersection of Webberville Road and U.S. Highway 183, and 4.1 mi east of the State Capitol Building in Austin.

DRAINAGE AREA.--13.1 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to July 1975 (periodic discharge measurements only), August 1975 to June 1977 (operated as a flood-hydrograph partial-record station only), June 1977 to September 1986, (daily mean discharge), October 1986 to May 1994 (annual maximum discharge). May 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is 411.29 ft sea level (levels from city of Austin benchmark).

REMARKS.--Records poor. No known regulation. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge 4,370 ft³/s May 17, 1989, gage height, 14.79 ft, from floodmark.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 31	1915	809	6.21	Aug. 24	1300	1,410	7.44
Nov. 1	0330	1,210	7.02	Aug. 29	unknown	e1,700	8.0
June 7	0903	1,950	8.50	Aug. 30	unknown	3,080	10.85
Aug. 23	1815	1,500	7.61	Sept. 1	unknown	e1,710	8.0

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	149	.16	.02	e.00	2.0	.05	.10	7.8	.00	.00	e300
2	.00	1.0	.17	.05	e.00	1.0	.07	.07	2.7	.00	.00	e5.0
3	.00	.30	.13	.04	e.00	.40	.07	.07	.70	.00	.00	1.7
4	.00	23	.03	.01	e.00	.20	.07	.05	56	.00	.00	1.1
5	.00	1.2	.10	e.00	e.00	.00	11	.04	1.6	.00	.00	.87
6	.00	.63	.00	e.00	e.00	.00	15	.04	.55	.00	.00	.53
7	.00	.56	.00	e.00	e.00	.00	.30	.12	142	.00	.00	.37
8	.00	.48	.13	e.00	e.00	.00	.13	.04	3.2	.00	.00	.03
9	.00	.22	.67	e.00	e.00	.00	.09	.03	.79	.00	.00	15
10	.00	.17	.13	e.00	e.00	.00	.09	.00	.20	.00	.00	5.0
11	.00	.11	.09	e.00	e.00	.00	.08	.00	.00	.55	28	.76
12	.00	.13	.07	e.00	e.00	.00	.09	.00	.00	.21	6.0	.36
13	.00	.19	.07	e.00	e.00	.00	.10	.00	.00	.00	.97	.01
14	.00	.17	.04	e.00	e.00	.00	.09	.00	.00	.00	.03	.00
15	.00	.18	.03	e.00	e.00	.00	.06	.00	.00	.00	.00	.00
16	.00	.16	.18	e.00	e.00	.00	.08	.00	.00	.00	.00	.00
17	.00	46	7.0	e.00	e.00	.00	.11	.00	.00	.00	.00	.00
18	.00	4.9	1.4	e.35	e.00	.00	.12	.00	.00	.00	.00	19
19	.00	.75	.85	e.28	e.00	.00	.14	.00	.00	.00	28	8.8
20	.00	.44	.34	e.25	e.00	.00	.10	.00	.00	.00	5.0	e47
21	.00	.19	.09	e.22	.00	.00	.13	.00	.00	.00	.76	e41
22	.00	.08	.01	e.20	.00	.00	3.0	.00	24	.00	3.9	2.2
23	.00	.07	.14	e.25	.00	.00	.66	.00	2.8	.00	e213	1.5
24	.00	.04	.39	e.03	.00	.00	.13	.00	1.5	.00	173	e28
25	.00	.06	.40	e.01	.00	.00	.06	.00	20	.00	14	7.5
26	.00	.11	.31	e.00	.00	.05	.08	.00	26	.00	23	1.4
27	.00	.18	.03	e.00	.00	8.9	.09	51	3.4	.00	6.1	e18
28	.00	.04	.00	e.00	.00	1.3	.10	.97	.83	.00	e3.5	e4.2
29	.00	.08	.01	e.00	8.0	.17	20	.31	.47	.00	e250	.94
30	.00	.15	.04	e.00	---	.10	.24	43	.00	.00	e750	.40
31	67	---	.00	e.00	---	.05	---	5.5	---	.00	e75	---
TOTAL	67.00	230.59	13.01	1.71	8.00	14.17	52.33	101.34	294.54	0.76	1580.26	510.67
MEAN	2.16	7.69	.42	.055	.28	.46	1.74	3.27	9.82	.025	51.0	17.0
MAX	67	149	7.0	.35	8.0	8.9	20	51	142	.55	750	300
MIN	.00	.04	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00
AC-FT	133	457	26	3.4	16	28	104	201	584	1.5	3130	1010
CFSM	.16	.59	.03	.00	.02	.03	.13	.25	.75	.00	3.89	1.30
IN.	.19	.65	.04	.00	.02	.04	.15	.29	.84	.00	4.49	1.45

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1996, BY WATER YEAR (WY)

MEAN	8.36	5.58	3.34	1.98	135	5.84	3.72	16.6	10.4	5.51	7.00	6.54
MAX	31.5	16.8	9.51	4.54	1580	18.5	12.7	48.7	55.2	54.5	51.0	17.0
(WY)	1985	1986	1985	1979	1977	1983	1979	1979	1981	1979	1996	1996
MIN	.44	.10	.027	.055	.28	.31	.063	.39	.025	.025	.002	.16
(WY)	1979	1980	1978	1996	1996	1986	1984	1984	1994	1986	1984	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1977 - 1996	
ANNUAL TOTAL	2528.17		2874.38			
ANNUAL MEAN	6.93		7.85		6.71	
HIGHEST ANNUAL MEAN					15.1	1979
LOWEST ANNUAL MEAN					1.29	1984
HIGHEST DAILY MEAN	317	May 29	750	Aug 30	1660	Feb 11 1977
LOWEST DAILY MEAN	.00	Jul 18	.00	Oct 1	.00	Jul 13 1978
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 18	.00	Oct 1	.00	Jul 13 1978
INSTANTANEOUS PEAK FLOW			3080	Aug 30	6100	May 23 1975
INSTANTANEOUS PEAK STAGE			10.85	Aug 30	17.03	May 23 1975
ANNUAL RUNOFF (AC-FT)	5010		5700		4860	
ANNUAL RUNOFF (CFSM)	.53		.60		.51	
ANNUAL RUNOFF (INCHES)	7.18		8.16		6.96	
10 PERCENT EXCEEDS	7.9		6.4		7.9	
50 PERCENT EXCEEDS	.50		.01		.23	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1975 to September 1986, April 1994 to current year. Pesticide analyses: January 1975 to December 1984. Radiochemical analyses: January 1980.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
JUN												
07...	0828	781	100	7.4	23.5	100	170	12	110000	160000	--	--
07...	0900	1880	104	7.4	23.5	250	160	9.2	72000	96000	39	6
07...	0930	1050	85	7.1	23.5	220	140	7.6	70000	120000	--	--
07...	1015	654	87	7.6	23.5	150	80	7.0	72000	140000	--	--
07...	1115	332	104	7.5	24.0	160	74	6.8	72000	210000	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)
JUN												
07...	--	--	--	--	--	30	--	--	--	--	--	1390
07...	14	0.94	3.0	0.2	2.6	33	6.8	4.1	0.20	2.5	56	2310
07...	--	--	--	--	--	28	--	--	--	--	--	2320
07...	--	--	--	--	--	31	--	--	--	--	--	1230
07...	--	--	--	--	--	38	--	--	--	--	--	708

DATE	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
JUN												
07...	128	1260	0.260	0.260	0.010	0.270	0.270	0.210	4.1	3.6	3.8	1.40
07...	240	2070	0.340	0.340	0.020	0.360	0.360	0.240	3.4	2.8	3.0	1.10
07...	210	2110	0.330	0.330	0.020	0.350	0.350	0.200	2.5	1.9	2.1	0.910
07...	104	1130	0.340	0.340	0.020	0.360	0.360	0.120	2.4	1.9	2.0	0.880
07...	76	632	0.360	0.360	0.020	0.380	0.380	0.100	1.9	1.4	1.5	0.650

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JUN											
07...	0.120	0.100	0.31	--	--	--	--	--	--	--	--
07...	0.080	0.070	0.21	2	20	<0.50	<1.0	<5.0	<3.0	<10	22
07...	0.070	0.070	0.21	--	--	--	--	--	--	--	--
07...	0.090	0.070	0.21	--	--	--	--	--	--	--	--
07...	0.100	0.080	0.25	--	--	--	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
07...	<10	<4	2.0	<0.1	<10	<10	<1	<1.0	73	<6	<3.0
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX

LOCATION.--Lat 30°16'59", long 97°39'17", Travis County, Hydrologic Unit 12090205, on left bank 190 ft downstream from bridge on Farm Road 969, 0.8 mi downstream from Little Walnut Creek, 2.8 mi upstream from Colorado River, 5.2 mi east of the State Capitol Building in Austin, and 2.8 mi upstream from mouth.

DRAINAGE AREA.--51.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 425.96 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. No known regulation. An automatic water-quality sampler installed Feb. 22, 1989. Rain gage at station. Radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1935, reached a stage of 24 ft, backwater from Colorado River. A flood in 1919 reached a stage of 22 ft, from information by local residents. Maximum stage since at least 1891, that of May 25, 1981.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 7	0915	1,640	11.99	Sept. 18	2315	1,550	11.70
Aug. 24	1330	7,030	22.72				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	137	3.2	4.6	4.6	13	4.1	2.9	5.2	2.5	.15	109
2	4.1	12	3.2	4.2	4.6	5.6	3.7	2.8	3.2	2.4	.15	33
3	7.6	5.0	3.2	4.1	4.6	4.3	3.6	2.8	2.8	2.0	.12	25
4	4.2	24	3.2	4.1	4.6	4.2	3.6	2.8	172	1.5	.00	16
5	4.0	9.3	3.8	4.1	4.6	5.5	14	2.1	13	.90	.00	14
6	3.5	5.3	3.6	4.1	4.7	5.0	37	2.0	5.6	.70	.00	9.9
7	3.2	4.4	3.6	4.1	5.0	3.7	8.3	2.3	270	.69	.00	8.9
8	3.2	3.8	13	4.1	5.0	3.6	5.8	2.4	21	.56	.16	7.0
9	3.2	3.5	9.1	4.0	5.0	3.6	5.0	2.4	9.7	.33	6.6	9.2
10	3.2	3.2	4.3	3.6	5.0	3.3	5.0	2.1	6.3	.95	.67	6.2
11	3.2	3.1	4.1	3.6	5.0	3.2	4.5	2.0	7.8	1.8	132	5.0
12	3.4	2.8	4.2	3.6	4.7	3.2	4.1	1.8	5.5	.53	23	5.0
13	3.2	3.1	3.6	3.6	4.6	3.2	4.1	1.8	3.9	.33	4.8	5.0
14	3.1	3.1	3.6	3.6	4.6	3.2	4.1	1.8	3.1	.28	2.3	7.3
15	3.2	2.8	4.1	3.6	4.6	3.2	3.7	1.5	2.8	.15	2.0	13
16	3.2	2.8	4.6	3.6	4.6	11	3.0	1.1	2.4	.15	2.5	6.9
17	3.7	90	24	3.6	4.6	12	2.9	1.1	2.0	.15	2.9	5.8
18	3.3	28	16	4.4	4.6	4.1	3.2	1.1	2.0	.15	2.2	124
19	3.2	9.9	8.8	3.7	4.6	3.3	3.2	2.2	1.8	.11	77	102
20	3.2	6.2	5.8	3.6	4.6	3.2	3.7	1.3	1.2	.00	9.7	148
21	3.2	5.3	5.6	3.6	4.3	3.2	4.8	1.1	1.1	.00	4.6	40
22	4.1	4.5	5.5	3.6	4.1	3.2	12	1.1	37	.00	17	21
23	5.6	4.1	5.0	4.0	3.7	3.2	11	1.1	16	.00	99	18
24	5.6	3.7	5.0	4.1	3.6	3.2	4.7	.88	4.0	.25	1520	52
25	5.3	3.2	4.8	4.1	4.0	3.2	3.6	.69	14	.89	109	20
26	3.2	3.2	4.3	4.1	4.4	3.3	3.1	.81	72	.72	59	12
27	3.0	3.2	4.2	4.3	4.1	20	2.8	66	18	.48	28	11
28	3.1	3.2	4.2	4.6	3.3	14	2.8	8.6	6.0	.48	30	9.2
29	2.8	3.2	4.1	4.6	22	6.1	12	2.6	4.0	.38	77	7.4
30	2.8	3.2	4.7	4.6	---	5.1	3.6	163	3.4	.30	142	7.1
31	26	---	4.7	4.6	---	4.5	---	11	---	.21	54	---
TOTAL	137.7	396.1	181.1	124.1	147.7	170.4	187.0	297.18	716.8	19.89	2405.85	857.9
MEAN	4.44	13.2	5.84	4.00	5.09	5.50	6.23	9.59	23.9	.64	77.6	28.6
MAX	26	137	24	4.6	22	20	37	163	270	2.5	1520	148
MIN	2.8	2.8	3.2	3.6	3.3	3.2	2.8	.69	1.1	.00	.00	5.0
AC-FT	273	786	359	246	293	338	371	589	1420	39	4770	1700
CFSM	.09	.26	.11	.08	.10	.11	.12	.19	.47	.01	1.51	.56
IN.	.10	.29	.13	.09	.11	.12	.14	.22	.52	.01	1.74	.62

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1996, BY WATER YEAR (WY)

MEAN	28.8	20.3	33.9	30.0	31.6	26.2	23.8	59.3	42.9	11.1	11.8	13.6
MAX	175	161	367	237	203	121	90.0	170	435	55.7	77.6	51.7
(WY)	1985	1975	1992	1968	1992	1992	1977	1981	1981	1987	1996	1973
MIN	1.37	1.03	1.22	1.07	1.88	1.06	1.79	.58	.23	.052	.32	1.42
(WY)	1979	1967	1967	1967	1967	1967	1971	1971	1967	1971	1977	1972

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1966 - 1996	
ANNUAL TOTAL	10175.6		5641.72			
ANNUAL MEAN	27.9		15.4		27.9	
HIGHEST ANNUAL MEAN					94.6	1992
LOWEST ANNUAL MEAN					1.91	1967
HIGHEST DAILY MEAN	1290	May 29	1520	Aug 24	4330	Dec 21 1991
LOWEST DAILY MEAN	1./	Sep 6	.00	Jul 20	.00	Jun 17 1967
ANNUAL SEVEN-DAY MINIMUM	2.4	Jul 23	.06	Jul 17	.00	Jun 17 1967
INSTANTANEOUS PEAK FLOW			7030	Aug 24	14300	May 25 1981
INSTANTANEOUS PEAK STAGE			22.72	Aug 24	27.24	May 25 1981
ANNUAL RUNOFF (AC-FT)	20180		11190		20230	
ANNUAL RUNOFF (CFSM)	.54		.30		.54	
ANNUAL RUNOFF (INCHES)	7.38		4.09		7.40	
10 PERCENT EXCEEDS	35		20		42	
50 PERCENT EXCEEDS	13		4.1		7.1	
90 PERCENT EXCEEDS	3.2		.90		1.0	

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: April 1976 to current year. Pesticide analyses: November 1976 to September 1986. Sediment analyses: December 1977 to July 1982. Radiochemical analyses: January 1980.

REMARKS.--Samples collected during storm events are collected by automatic sampler.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
NOV												
01...	0222	194	268	7.8	84	490	96	18	K210000	K170000	--	--
01...	0252	717	244	7.7	60	520	130	17	K180000	160000	96	21
01...	0322	596	241	7.7	74	510	140	15	K140000	170000	--	--
01...	0352	514	231	7.7	76	520	110	14	100000	130000	--	--
01...	0820	220	266	7.7	40	540	60	4.9	50000	150000	--	--
MAY												
27...	1041	199	389	7.4	25	560	390	>25	320000	62000	--	--
27...	1111	416	248	7.5	50	1500	290	>25	380000	150000	--	--
27...	1141	334	245	7.5	40	960	340	>25	320000	140000	--	--
27...	1211	207	204	7.6	55	770	240	>25	390000	360000	--	--
27...	1625	106	233	7.5	50	460	97	20	66000	64000	87	26

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)
NOV												
01...	--	--	--	--	--	72	--	--	--	--	--	724
01...	34	2.7	9.7	0.4	3.3	75	23	14	0.20	3.3	136	964
01...	--	--	--	--	--	71	--	--	--	--	--	1180
01...	--	--	--	--	--	69	--	--	--	--	--	960
01...	--	--	--	--	--	72	--	--	--	--	--	768
MAY												
27...	--	--	--	--	--	77	--	--	--	--	--	1800
27...	--	--	--	--	--	71	--	--	--	--	--	4430
27...	--	--	--	--	--	77	--	--	--	--	--	3750
27...	--	--	--	--	--	66	--	--	--	--	--	2050
27...	31	2.2	8.8	0.4	4.3	61	23	14	0.20	4.1	127	850

DATE	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
NOV												
01...	68	656	0.130	0.130	0.010	0.140	0.140	<0.015	2.2	2.1	2.1	1.00
01...	84	880	0.180	0.180	0.010	0.190	0.190	<0.015	3.1	2.9	2.9	1.40
01...	120	1060	0.260	0.260	0.010	0.270	0.270	<0.015	3.7	3.4	3.4	1.20
01...	84	876	0.230	0.230	0.020	0.250	0.250	<0.015	3.3	3.0	3.0	1.20
01...	52	716	0.280	0.280	0.010	0.290	0.290	<0.015	1.8	1.5	1.5	0.980
MAY												
27...	510	1290	0.270	0.270	0.020	0.290	0.290	0.080	6.5	6.1	6.2	3.10
27...	750	3680	0.460	0.460	0.040	0.500	0.500	0.220	2.4	1.7	1.9	0.440
27...	810	2940	0.400	0.400	0.080	0.480	0.480	0.330	1.5	0.67	1.0	0.030
27...	460	1590	0.600	0.600	0.040	0.640	0.640	0.180	6.7	5.9	6.1	1.90
27...	400	450	0.530	0.530	0.030	0.560	0.560	0.190	3.3	2.5	2.7	0.860

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV												
01...	0.030	0.010	0.03	25	--	--	--	--	--	--	--	--
01...	<0.010	0.020	0.06	33	2	32	<0.50	<1.0	<5.0	<3.0	<10	15
01...	0.010	0.010	0.03	34	--	--	--	--	--	--	--	--
01...	<0.010	0.010	0.03	32	--	--	--	--	--	--	--	--
01...	0.070	0.060	0.18	20	--	--	--	--	--	--	--	--
MAY												
27...	0.010	<0.010	--	94	--	--	--	--	--	--	--	--
27...	0.020	<0.010	--	77	--	--	--	--	--	--	--	--
27...	--	0.010	0.03	90	--	--	--	--	--	--	--	--
27...	0.020	<0.010	--	89	--	--	--	--	--	--	--	--
27...	0.070	0.040	0.12	28	1	29	<0.50	<1.0	<5.0	<3.0	<10	16

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV											
01...	--	--	--	--	--	--	--	--	--	--	--
01...	<10	6	11	<0.1	<10	<10	<1	<1.0	270	<6	<3.0
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	<10	4	<1.0	<0.1	<10	<10	<1	<1.0	190	<6	<3.0

08158700 ONION CREEK NEAR DRIFTWOOD, TX

LOCATION (REVISED).--Lat 30°04'58", long 98°00'27", Hays County, Hydrologic Unit 12090205, on left bank, 160 ft left of the upstream side of bridge at low-water crossing on Farm Road 150, 3.2 mi southeast of Driftwood, and 10 mi west of Buda.

DRAINAGE AREA.--124 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1958, November 1961 to June 1979 (periodic discharge measurements only), July 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 878.13 ft above sea level.

REMARKS.--Records fair. No known regulation. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	24	5.8	4.5	3.6	3.9	2.6	.23	e.15	.02	.05	6.0
2	3.2	6.5	5.6	3.9	3.5	3.6	2.4	e.37	e.13	.02	.01	1.8
3	3.2	3.6	6.2	3.9	2.6	3.3	2.3	e.36	.12	.02	.01	.88
4	3.3	3.7	5.7	4.0	2.7	3.2	2.5	e.35	.13	.01	.01	.66
5	3.1	4.8	5.9	4.2	3.0	3.6	2.6	e.34	.10	.01	.02	.62
6	2.3	4.6	5.8	3.9	3.4	3.6	2.6	e.33	.09	.01	.02	.57
7	2.3	4.1	5.3	3.9	3.9	3.1	1.6	.33	.12	.01	.00	.56
8	2.3	3.3	5.5	3.9	3.9	2.7	1.4	.28	.09	.01	.00	.57
9	2.0	3.1	5.2	3.9	3.9	2.6	1.2	.28	.05	.03	.00	.64
10	2.5	3.6	4.9	3.9	3.9	2.4	.99	.28	.03	.03	.00	.64
11	2.1	2.7	5.0	3.8	3.9	2.3	1.1	.28	.06	.03	.00	.70
12	1.6	2.5	5.6	3.4	3.7	2.4	1.1	.28	.05	.08	.00	.71
13	2.0	2.6	5.6	3.2	3.6	2.8	1.0	.28	.07	.05	.00	.72
14	1.9	2.6	5.6	3.2	3.6	2.9	.97	.27	.06	.07	.01	.72
15	1.6	2.6	5.6	3.3	3.6	3.1	1.0	.27	.06	.07	.00	.97
16	2.0	3.6	5.3	3.0	3.5	3.2	e.90	.27	.08	.07	.00	.95
17	1.9	4.2	5.4	3.3	3.5	3.3	e.90	.26	.08	.09	.00	.84
18	2.2	4.6	5.5	3.2	3.6	2.9	e.80	.25	.09	.11	.00	.91
19	2.2	3.9	4.6	2.6	3.6	2.3	e.80	.24	.09	.11	.00	1.1
20	1.6	3.9	4.6	2.6	3.6	2.4	e.70	.25	.08	.11	.00	2.8
21	1.1	3.9	4.6	3.1	3.5	2.4	e.60	.26	.10	.13	.00	2.7
22	1.5	4.1	4.7	3.4	3.5	2.5	.59	.26	.12	.18	.00	2.2
23	1.5	3.9	4.6	3.4	3.5	2.7	.63	.26	.12	.26	.00	1.7
24	1.5	3.9	4.6	3.7	3.1	2.7	.56	.24	.11	.32	.02	1.6
25	1.7	3.9	4.7	3.3	3.5	2.6	.56	.24	.13	.31	.00	1.6
26	1.9	4.0	4.6	3.7	3.6	2.4	.49	.23	.13	.37	.00	1.5
27	2.1	4.4	4.6	3.6	3.6	2.2	.49	e.20	.09	.35	.00	1.7
28	1.6	4.0	4.6	3.2	3.3	2.1	.47	e.20	.07	.22	.00	1.4
29	2.1	4.1	4.6	3.5	3.5	2.3	.53	e.20	.05	.42	.01	1.3
30	2.5	4.5	4.6	3.9	---	2.5	.46	e.18	.03	.25	.03	1.2
31	6.4	---	4.6	3.7	---	2.6	---	e.18	---	.16	1.5	---
TOTAL	70.5	135.2	159.5	110.1	101.7	86.6	34.84	8.25	2.68	3.93	1.69	40.26
MEAN	2.27	4.51	5.15	3.55	3.51	2.79	1.16	.27	.089	.13	.055	1.34
MAX	6.4	24	6.2	4.5	3.9	3.9	2.6	.37	.15	.42	1.5	6.0
MIN	1.1	2.5	4.6	2.6	2.6	2.1	.46	.18	.03	.01	.00	.56
AC-FT	140	268	316	218	202	172	69	16	5.3	7.8	3.4	80
CFSM	.02	.04	.04	.03	.03	.02	.01	.00	.00	.00	.00	.01
IN.	.02	.04	.05	.03	.03	.03	.01	.00	.00	.00	.00	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1996, BY WATER YEAR (WY)

MEAN	20.5	18.4	75.8	56.9	70.8	67.9	42.7	74.2	133	23.1	5.57	5.82
MAX	109	85.9	548	316	506	356	170	202	792	97.5	22.0	34.6
(WY)	1987	1986	1992	1992	1992	1992	1991	1992	1987	1987	1987	1991
MIN	.22	.10	.10	.43	.87	2.29	1.16	.27	.089	.13	.055	.006
(WY)	1990	1989	1989	1990	1990	1989	1996	1996	1996	1996	1996	1994

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1979 - 1996	
ANNUAL TOTAL	21533.5		755.25			
ANNUAL MEAN	59.0		2.06		49.4	
HIGHEST ANNUAL MEAN					196	1992
LOWEST ANNUAL MEAN					2.06	1996
HIGHEST DAILY MEAN	3400	May 30	24	Nov 1	5060	Dec 21 1991
LOWEST DAILY MEAN	1.1	Oct 21	.00	Aug 7	.00	Aug 21 1984
ANNUAL SEVEN-DAY MINIMUM	1.5	Oct 20	.00	Aug 7	.00	Sep 14 1984
INSTANTANEOUS PEAK FLOW			28	Nov 1	8990	Jun 6 1985
INSTANTANEOUS PEAK STAGE			1.01	Nov 1	16.38	Jun 6 1985
ANNUAL RUNOFF (AC-FT)	42710		1500		35790	
ANNUAL RUNOFF (CFSM)	.48		.017		.40	
ANNUAL RUNOFF (INCHES)	6.46		.23		5.41	
10 PERCENT EXCEEDS	94		4.6		114	
50 PERCENT EXCEEDS	24		1.9		9.0	
90 PERCENT EXCEEDS	2.7		.03		.37	

e Estimated

08158700 ONION CREEK NEAR DRIFTWOOD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1974 to current year. Pesticide analyses: January 1978 to September 1986. Radiochemical analyses: January 1980.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
MAR												
04...	1140	3.2	533	7.8	13.5	4	0.20	9.3	92	0.6	K68	96
JUL												
15...	1118	0.07	535	7.3	26.5	5	0.20	3.9	50	0.4	K0	150

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
MAR												
04...	260	60	71	20	10	0.3	1.1	200	50	17	0.30	7.6
JUL												
15...	270	49	72	21	9.3	0.2	1.6	220	35	18	0.30	14

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
MAR												
04...	297	<1	2	--	0.010	--	<0.050	0.020	--	--	<0.20	<0.010
JUL												
15...	303	<1	10	0.080	<0.010	0.080	0.080	0.030	0.38	0.27	0.30	<0.010

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
MAR												
04...	<0.010	<0.010	--	3.8	<1	28	<0.50	<1.0	<5.0	<3.0	<10	<3.0
JUL												
15...	<0.010	0.010	0.03	2.4	1	32	<0.50	<1.0	<5.0	<3.0	<10	6.0

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
MAR											
04...	30	<4	1.0	<0.1	<10	<10	<1	<1.0	420	<6	<3.0
JUL											
15...	<10	<4	33	<0.1	<10	<10	<1	<1.0	410	<6	<3.0

08158810 BEAR CREEK BELOW FARM ROAD 1826 NEAR DRIFTWOOD, TX

LOCATION.--Lat 30°09'19", long 97°56'23", Hays County, Hydrologic Unit 12090205, 0.8 mi southeast of Farm Road 1826 and 5.9 mi northeast of Driftwood.

DRAINAGE AREA.--12.2 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1978 to July 1979 (periodic discharge measurements only), October 1978 to June 1979 (peak discharges above base only), July 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 860 ft above sea level from topographic map.

REMARKS.--No estimated daily discharges. Records good. No known regulation. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 9, 1939 (corrected), reached a stage of 16.2 ft; discharge, 14,200 ft³/s, and is the highest since at least 1924, from information by local resident. A flood in 1915 was purported to be 2 ft higher than the 1939 flood, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.94	.05	.06	.07	.06	.05	.03	.00	.00	.00	2.5
2	.03	.38	.05	.06	.07	.06	.05	.03	.00	.00	.00	1.2
3	.04	.22	.05	.05	.07	.05	.05	.03	.00	.00	.00	1.0
4	.03	.14	.05	.05	.07	.05	.05	.03	.01	.00	.00	.90
5	.03	.22	.04	.05	.07	.05	.06	.03	.00	.00	.00	.73
6	.03	.09	.04	.05	.07	.05	.06	.03	.00	.00	.00	.64
7	.03	.07	.04	.05	.07	.06	.06	.03	.02	.00	.00	.63
8	.03	.05	.04	.05	.07	.06	.06	.03	.00	.00	.00	.60
9	.02	.05	.05	.05	.07	.05	.06	.02	.00	.00	.00	.63
10	.03	.05	.05	.06	.06	.05	.06	.02	.01	.00	.00	.45
11	.03	.05	.05	.06	.06	.05	.06	.02	.02	.00	.00	.30
12	.03	.05	.05	.06	.06	.05	.06	.01	.01	.00	.00	.13
13	.03	.05	.05	.06	.06	.05	.05	.01	.00	.00	.00	.09
14	.03	.05	.05	.06	.06	.05	.05	.00	.00	.00	.00	.07
15	.02	.05	.05	.06	.07	.05	.04	.00	.00	.00	.00	.06
16	.02	.05	.05	.06	.07	.05	.04	.00	.00	.00	.00	.04
17	.02	.07	.06	.34	.06	.05	.04	.00	.00	.00	.00	.03
18	.02	.22	.05	.56	.06	.05	.04	.00	.00	.00	.00	.02
19	.03	.08	.05	.29	.06	.05	.04	.00	.00	.00	.00	.02
20	.03	.08	.05	.35	.06	.05	.04	.00	.00	.00	.00	1.1
21	.03	.08	.05	.38	.06	.05	.04	.00	.00	.00	.00	2.5
22	.03	.08	.05	.37	.06	.05	.04	.00	.00	.00	.00	1.2
23	.03	.08	.05	.29	.06	.05	.05	.00	.00	.00	.00	.87
24	.03	.07	.05	.10	.05	.05	.04	.00	.00	.00	.00	.78
25	.03	.07	.05	.09	.05	.05	.04	.00	.00	.00	.00	.74
26	.03	.07	.06	.09	.05	.05	.04	.00	.00	.00	.00	.71
27	.03	.07	.06	.08	.05	.06	.04	.00	.00	.00	.02	.70
28	.03	.07	.06	.08	.05	.06	.04	.00	.00	.00	.02	.65
29	.03	.07	.06	.08	.05	.06	.04	.00	.00	.00	.01	.65
30	.03	.07	.06	.08	---	.06	.04	.08	.00	.00	.05	.65
31	.09	---	.06	.08	---	.05	---	.00	---	.00	.20	---
TOTAL	0.95	3.69	1.58	4.15	1.79	1.63	1.43	0.40	0.07	0.00	0.30	20.59
MEAN	.031	.12	.051	.13	.062	.053	.048	.013	.002	.000	.010	.69
MAX	.09	.94	.06	.56	.07	.06	.06	.08	.02	.00	.20	2.5
MIN	.02	.05	.04	.05	.05	.05	.04	.00	.00	.00	.00	.02
AC-FT	1.9	7.3	3.1	8.2	3.6	3.2	2.8	.8	.1	.00	.6	41
CFSM	.00	.01	.00	.01	.01	.00	.00	.00	.00	.00	.00	.06
IN.	.00	.01	.00	.01	.01	.00	.00	.00	.00	.00	.00	.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1996, BY WATER YEAR (WY)

MEAN	2.70	2.08	9.91	6.32	8.06	7.36	5.43	8.69	17.7	2.11	.73	.63
MAX	22.5	11.6	91.8	33.3	49.4	32.3	26.2	23.7	144	7.31	3.59	2.71
(WY)	1987	1987	1992	1992	1992	1992	1991	1992	1981	1981	1979	1991
MIN	.000	.000	.000	.000	.017	.053	.048	.013	.001	.000	.000	.000
(WY)	1989	1989	1989	1989	1990	1996	1996	1996	1984	1984	1984	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1979 - 1996	
ANNUAL TOTAL	2255.92		36.58			
ANNUAL MEAN	6.18		.10		5.94	
HIGHEST ANNUAL MEAN					22.3	1992
LOWEST ANNUAL MEAN					.10	1996
HIGHEST DAILY MEAN	244	May 30	2.5	Sep 1	1000	Dec 20 1991
LOWEST DAILY MEAN	.02	Oct 9	.00	May 14	.00	Aug 28 1980
ANNUAL SEVEN-DAY MINIMUM	.02	Oct 12	.00	May 14	.00	Aug 28 1980
INSTANTANEOUS PEAK FLOW			3.6	Nov 1	10200	Dec 20 1991
INSTANTANEOUS PEAK STAGE			2.51	Sep 1	14.23	Dec 20 1991
ANNUAL RUNOFF (AC-FT)	4470		73		4300	
ANNUAL RUNOFF (CFSM)	.51		.008		.49	
ANNUAL RUNOFF (INCHES)	6.88		.11		6.61	
10 PERCENT EXCEEDS	13		.13		12	
50 PERCENT EXCEEDS	3.3		.05		1.2	
90 PERCENT EXCEEDS	.04		.00		.00	

08158810 BEAR CREEK BELOW FARM ROAD 1826 NEAR DRIFTWOOD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1978 to current year. Pesticide analyses: June 1978 to September 1986, January to September 1993. Radiochemical analyses: January 1980.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)
MAR										
04...	1100	0.05	593	7.9	15.0	7	0.60	9.3	95	19

DATE	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
MAR									
04...	1.4	K16	96	150	22	16	6	0.010	<0.050

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)
MAR									
04...	<0.015	0.30	0.30	0.30	0.020	<0.010	<0.010	3.5	<1

08158840 SLAUGHTER CREEK AT FARM ROAD 1826 NEAR AUSTIN, TX

LOCATION.--Lat 30°12'32", long 97°54'11", Travis County, Hydrologic Unit 12090205, 1.7 mi south of the intersection on U.S. Highway 290 and Farm Road 1826, and 11.9 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--8.24 mi².

PERIOD OF RECORD.--January 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 876.14 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversion. No water-quality data collected this year due to no flow conditions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.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	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.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	.05
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	.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	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.84	.00	.00	.00	.00
31	.04	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.04	0.19	0.00	0.00	0.00	0.00	0.00	0.86	0.06	0.00	0.00	0.05
MEAN	.001	.006	.000	.000	.000	.000	.000	.028	.002	.000	.000	.002
MAX	.04	.19	.00	.00	.00	.00	.00	.84	.06	.00	.00	.05
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.08	.4	.00	.00	.00	.00	.00	1.7	.1	.00	.00	.1
CFSM	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
IN.	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1996, BY WATER YEAR (WY)

MEAN	3.50	2.58	9.61	5.41	6.07	5.46	4.20	10.6	15.1	1.04	.35	.48
MAX	35.5	18.5	75.0	24.4	40.6	20.3	27.1	33.0	101	5.31	2.28	4.33
(WY)	1987	1986	1992	1992	1992	1992	1979	1995	1981	1979	1983	1991
MIN	.000	.000	.000	.000	.000	.000	.000	.021	.002	.000	.000	.000
(WY)	1983	1989	1989	1990	1996	1989	1996	1984	1996	1984	1980	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1978 - 1996	
ANNUAL TOTAL	3171.28		1.20			
ANNUAL MEAN	8.69		.003		5.55	
HIGHEST ANNUAL MEAN					17.9	1992
LOWEST ANNUAL MEAN					.003	1996
HIGHEST DAILY MEAN	400	May 30	.84	May 30	901	Jun 11 1981
LOWEST DAILY MEAN	.00	Aug 10	.00	Oct 1	.00	Jan 26 1978
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 22	.00	Oct 1	.00	Jan 26 1978
INSTANTANEOUS PEAK FLOW			53	May 30	6330	Dec 20 1991
INSTANTANEOUS PEAK STAGE			4.89	May 30	10.79	Jun 11 1981
ANNUAL RUNOFF (AC-FT)	6290		2.4		4020	
ANNUAL RUNOFF (CFSM)	1.05		.000		.67	
ANNUAL RUNOFF (INCHES)	14.32		.01		9.16	
10 PERCENT EXCEEDS	14		.00		10	
50 PERCENT EXCEEDS	2.6		.00		.34	
90 PERCENT EXCEEDS	.00		.00		.00	

08158922 WILLIAMSON CREEK AT BRUSH COUNTRY BOULEVARD, OAK HILL, TX

LOCATION.--Lat 30°13'34", long 97°52'28", Travis County, Hydrologic Unit 12090205, at downstream side of bridge on Brush Country Boulevard near Oak Hill, and 7.7 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--6.79 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 740.25 ft above sea level, (levels from city of Austin benchmark).

REMARKS.--No estimated daily discharges. Records fair. Station is equipped with an automatic water-quality sampler.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.86
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00	.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	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
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	.05
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.66	.00
27	.00	.00	.00	.00	.00	.01	.00	.04	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	7.7	.00	.00	.01	.00
31	.03	---	.00	.00	---	.00	---	.00	---	.00	.10	---
TOTAL	0.03	1.62	0.00	0.00	0.01	0.01	0.02	7.74	3.08	0.01	0.80	0.92
MEAN	.001	.054	.000	.000	.000	.000	.001	.25	.10	.000	.026	.031
MAX	.03	1.6	.00	.00	.01	.01	.01	7.7	3.0	.01	.66	.86
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.06	3.2	.00	.00	.02	.02	.04	15	6.1	.02	1.6	1.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1996, BY WATER YEAR (WY)

MEAN	1.67	.074	.79	.036	.022	.12	.085	2.31	1.21	.000	.14	.043
MAX	4.97	.17	2.38	.11	.058	.35	.31	8.84	4.64	.001	.55	.14
(WY)	1995	1995	1995	1995	1994	1995	1995	1995	1995	1995	1994	1994
MIN	.001	.001	.000	.000	.000	.000	.001	.040	.001	.000	.001	.000
(WY)	1996	1994	1996	1994	1996	1996	1996	1993	1994	1993	1993	1993

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1993 - 1996	
ANNUAL TOTAL	438.53		14.24			
ANNUAL MEAN	1.20		.039		.65	
HIGHEST ANNUAL MEAN					1.83	1995
LOWEST ANNUAL MEAN					.039	1996
HIGHEST DAILY MEAN	169	May 30	7.7	May 30	169	May 30 1995
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Mar 11 1993
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Mar 11 1993
INSTANTANEOUS PEAK FLOW			192	May 30	1300	Oct 7 1994
INSTANTANEOUS PEAK STAGE			3.52	May 30	5.69	Oct 7 1994
ANNUAL RUNOFF (AC-FT)	870		28		470	
10 PERCENT EXCEEDS	.01		.00		.00	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

08158922 WILLIAMSON CREEK AT BRUSH COUNTRY BOULEVARD, OAK HILL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1993 to current year.

REMARKS.--Samples collected during storm events are collected by automatic sampler.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
MAY												
30...	0505	36	138	7.2	--	50	55	130	>23	56000	78000	--
30...	0520	161	99	7.1	--	55	79	73	12	72000	140000	--
30...	0535	118	113	7.2	--	55	110	67	11	98000	220000	--
30...	0550	84	114	7.1	--	55	97	55	11	120000	220000	--
30...	0707	14	124	7.2	22.5	65	19	26	5.1	84000	170000	48
30...	0804	4.7	139	7.2	--	65	15	27	4.8	68000	210000	--
30...	0953	0.82	156	7.1	25.0	60	6.0	27	3.6	34000	110000	64

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAY												
30...	--	--	--	--	--	--	36	--	--	--	--	--
30...	--	--	--	--	--	--	33	--	--	--	--	--
30...	--	--	--	--	--	--	36	--	--	--	--	--
30...	--	--	--	--	--	--	38	--	--	--	--	--
30...	12	15	2.6	2.8	0.2	4.2	36	10	4.9	0.10	2.9	67
30...	--	--	--	--	--	--	43	--	--	--	--	--
30...	18	20	3.4	3.2	0.2	4.4	46	13	5.6	0.10	4.0	83

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
MAY												
30...	336	114	222	--	--	<0.010	--	<0.050	<0.015	1.7	1.7	1.7
30...	324	124	200	--	--	<0.010	--	<0.050	0.030	2.5	2.5	2.5
30...	348	110	238	0.430	0.430	0.010	0.440	0.440	0.040	2.7	2.3	2.3
30...	284	80	204	0.460	0.460	0.010	0.470	0.470	0.050	1.4	0.85	0.90
30...	49	14	35	0.530	--	<0.010	0.530	0.530	<0.015	1.4	0.90	0.90
30...	26	15	11	0.380	0.380	0.040	0.420	0.420	0.040	1.1	0.66	0.70
30...	22	8	14	0.430	--	<0.010	0.430	0.430	0.040	1.1	0.66	0.70

DATE	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
MAY												
30...	0.360	0.130	0.010	0.03	--	--	--	--	--	--	--	--
30...	0.550	0.130	<0.010	--	--	--	--	--	--	--	--	--
30...	0.510	0.120	0.120	0.37	--	--	--	--	--	--	--	--
30...	0.210	0.130	0.120	0.37	--	--	--	--	--	--	--	--
30...	0.220	0.160	0.090	0.28	2	10	<0.50	<1.0	<5.0	<3.0	<10	37
30...	0.190	0.140	<0.010	--	--	--	--	--	--	--	--	--
30...	0.150	0.130	<0.010	--	2	12	<0.50	<1.0	<5.0	4.0	<10	55

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
MAY											
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	10	<4	4.0	<0.1	<10	<10	<1	<1.0	52	<6	<3.0
30...	--	--	--	--	--	--	--	--	--	--	--
30...	10	<4	3.0	<0.1	<10	<10	<1	2.0	67	<6	4.0

08159000 ONION CREEK AT U.S. HIGHWAY 183, AUSTIN, TX

LOCATION.--Lat 30°10'40", long 97°41'18", Travis County, Hydrologic Unit 12090205, on right bank at downstream side of downstream bridge on U.S. Highway 183, 2.4 mi downstream from Williamson Creek, 3.2 mi southwest of Del Valle, and 7.5 mi southeast of the State Capitol Building in Austin.

DRAINAGE AREA.--321 mi²

PERIOD OF RECORD.--May 1924 to March 1930, March 1976 to current year. In 1924-30 station was published as "near Del Valle".
Water-quality records.--Chemical and biochemical analyses: October 1976 to September 1988. Pesticide analyses: October 1976 to September 1986. Sediment analyses: October 1976 to September 1982. Radiochemical analyses: January 1980.

GAGE.--Water-stage recorder. Datum of gage is 442.85 ft above sea level, (Texas Department of Transportation datum). May 15, 1924 to Mar. 15, 1930, nonrecording gage at highway bridge 1,700 ft upstream at 6.42 ft higher datum.

REMARKS.--No estimated daily discharges. Records good. Flow is slightly regulated by several small ponds on main channel and tributaries above station. One observation of water temperature was made during the year. One recording rain gage in the watershed. Radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1869 occurred about July 3, 1869, stage about 38 ft, from newspaper accounts, and Sept. 9, 1921, stage 38.0 ft, from floodmark, present site and datum.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	26/	1.6	2.5	2.6	7.8	.99	1.2	1.8	.00	.00	46
2	.11	19	2.0	2.3	2.8	2.7	.81	.32	.27	.00	.00	7.5
3	3.6	6.1	2.0	2.1	2.6	1.8	.62	.00	.00	.00	.00	2.0
4	2.1	3.8	2.0	2.2	2.6	1.4	.57	.00	.39	.00	.00	.53
5	1.5	5.4	2.0	2.4	2.6	1.2	3.5	.00	.66	.00	.00	.02
6	.65	3.3	1.8	2.4	3.1	1.1	33	.00	.00	.00	.00	.00
7	.05	2.0	2.0	2.2	3.3	.88	9.1	.00	171	.00	.00	.00
8	.00	1.5	2.0	2.2	2.9	.47	3.3	.00	17	.00	.00	.00
9	.00	1.3	2.1	2.4	2.9	.43	1.8	.00	2.2	.00	.00	5.0
10	.00	1.2	1.9	2.7	2.7	.66	1.1	.00	.60	.00	.00	15
11	.00	.67	1.9	3.1	2.2	.61	.78	.00	.09	.00	.00	1.3
12	.00	.67	3.1	2.9	2.4	.68	.43	.00	.00	.00	.00	.02
13	.00	.83	2.3	2.9	2.5	.69	.27	.00	.00	.00	.00	.00
14	.00	.97	1.9	3.1	2.2	.57	.13	.00	.00	.00	.00	.00
15	.00	1.1	2.2	3.0	1.6	.53	.00	.00	.00	.00	.00	.00
16	.00	1.0	1.7	3.0	1.5	.76	.00	.00	.00	.00	.00	.00
17	.00	12	4.7	3.5	1.4	13	.00	.00	.00	.00	.00	.00
18	.00	24	4.7	3.6	1.5	2.3	.00	.00	.00	.00	.00	14
19	.00	6.3	3.3	2.9	1.8	1.2	.00	.00	.00	.00	.00	28
20	.00	3.4	2.6	3.1	1.6	.93	.00	.00	.00	.00	.00	104
21	.00	2.1	2.2	3.4	1.5	.92	.00	.00	.00	.00	.00	44
22	.00	2.6	2.1	3.7	1.7	1.0	.00	.00	.00	.00	.00	8.6
23	.00	1.4	2.0	3.9	1.7	.97	.08	.00	6.8	.00	1.7	3.3
24	.00	2.4	2.0	3.5	1.3	.93	.00	.00	3.0	.00	6.0	1.6
25	.00	1.6	2.1	3.3	1.2	.88	.00	.00	3.1	.00	7.2	2.4
26	.00	1.2	2.1	3.5	1.3	.86	.00	.00	23	.00	25	2.1
27	.00	1.4	2.3	2.9	1.1	1.6	.00	13	11	.00	8.9	1.3
28	.00	1.3	2.3	2.9	1.1	4.0	.00	6.0	1.4	.00	1.0	1.2
29	.00	1.4	2.2	3.2	4.9	1.9	33	.13	.29	.00	.10	1.2
30	.00	1.5	2.6	3.4	---	1.7	5.0	97	.00	.00	66	.72
31	72	---	3.4	3.0	---	1.3	---	9.9	---	.00	14	---
TOTAL	80.11	3/8.44	73.1	91.2	62.6	55.77	94.48	127.55	242.60	0.00	129.90	289.79
MEAN	2.58	12.6	2.36	2.94	2.16	1.80	3.15	4.11	8.09	.000	4.19	9.66
MAX	72	267	4.7	3.9	4.9	13	33	97	171	.00	66	104
MIN	.00	.67	1.6	2.1	1.1	.43	.00	.00	.00	.00	.00	.00
AC-FT	159	751	145	181	124	111	187	253	481	.00	258	575
CFSM	.01	.04	.01	.01	.01	.01	.01	.01	.03	.00	.01	.03
IN.	.01	.04	.01	.01	.01	.01	.01	.01	.03	.00	.02	.03

08159000 ONION CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1996, BY WATER YEAR (WY)

MEAN	42.1	26.7	102	55.7	82.1	83.4	111	193	218	32.1	7.65	9.11
MAX	282	231	1526	487	908	576	847	1767	2305	133	47.6	48.0
(WY)	1926	1986	1992	1992	1992	1992	1926	1929	1981	1981	1983	1986
MIN	.000	.27	.000	.002	1.65	1.80	1.39	1.40	.010	.000	.000	.000
(WY)	1929	1994	1990	1990	1925	1996	1994	1984	1925	1925	1925	1988

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1924 - 1996	
ANNUAL TOTAL	18709.62		1625.54			
ANNUAL MEAN	51.3		4.44		78.8	
HIGHEST ANNUAL MEAN					379	1992
LOWEST ANNUAL MEAN					1.49	1925
HIGHEST DAILY MEAN	4800	May 30	267	Nov 1	30500	May 28 1929
LOWEST DAILY MEAN	.00	Jul 27	.00	Oct 8	.00	Jun 3 1925
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 8	.00	Oct 8	.00	Jun 3 1925
INSTANTANEOUS PEAK FLOW			874	Jun 7	76000	May 28 1929
INSTANTANEOUS PEAK STAGE			8.29	Jun 7	30.50	Dec 21 1991
ANNUAL RUNOFF (AC-FT)	37110		3220		57110	
ANNUAL RUNOFF (CFSM)	.16		.014		.25	
ANNUAL RUNOFF (INCHES)	2.17		.19		3.34	
10 PERCENT EXCEEDS	57		5.1		123	
50 PERCENT EXCEEDS	9.5		1.0		6.3	
90 PERCENT EXCEEDS	.10		.00		.00	

08159200 COLORADO RIVER AT BASTROP, TX

LOCATION.--Lat 30°06'16", long 97°19'09", Bastrop County, Hydrologic Unit 12090301, at the downstream side of bridge on State Highway 71 bridge, at Bastrop, 0.3 mi upstream from Gills Branch, 1.2 mi downstream from Piney Creek, and at mile 236.6.

DRAINAGE AREA.--39,979 mi², approximately, of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1973 to September 1975, daily discharges estimated by hydrographic comparison with streamflow stations 08158000 and 08159500. March 1960 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 307.38 ft above sea level. Prior to May 10, 1960, nonrecording gage at a site 400 ft upstream from present site and at same datum. May 10, 1960 to Sept. 30, 1973, Oct. 1, 1975 to Oct. 28, 1986, at a site 400 ft upstream from present site and at same datum.

REMARKS.--Records good. There are many diversions above station for irrigation and for municipal supply. Regulation is the same as that for Colorado River at Austin (station 08158000). The city of Austin diverts water into Decker Lake (by pumpage) upstream from this station. The Lower Colorado River Authority also diverts water from the Colorado into Lake Bastrop by pumping upstream from this station. Radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1845, 60.3 ft July 7 or 8, 1869. Flood of June 16, 1935, reached a stage of 57.0 ft, and flood of Dec. 4, 1913, reached a stage of 53.3 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1130	794	628	380	456	479	1170	1140	3150	2240	710	1430
2	1170	1760	412	396	546	686	1110	1150	3380	2320	808	1580
3	1180	697	410	390	417	602	1150	1240	3320	2270	1070	822
4	1160	518	426	452	731	440	958	1240	3390	2250	1030	1000
5	1080	477	425	495	631	504	1060	1310	3780	2420	892	1180
6	1080	557	415	399	496	544	1150	1320	3390	2440	853	1120
7	991	466	467	407	423	497	1350	1330	3390	2450	1330	1220
8	879	426	443	427	490	538	1170	1320	4470	2480	1720	1280
9	858	411	374	502	421	508	1050	1850	3470	2490	1860	1250
10	857	412	397	485	496	524	886	1800	3430	2500	1950	1380
11	847	392	715	438	427	490	942	1680	3260	2320	2060	1410
12	837	423	475	440	428	407	916	1830	3270	2180	2310	1280
13	843	438	405	478	502	463	941	1850	3010	2100	2260	1290
14	853	336	400	372	461	488	1090	1850	3160	2110	2110	1230
15	913	351	392	401	451	510	1010	1840	3230	2150	2130	1160
16	849	406	403	430	410	523	1170	1830	2920	2160	2140	1050
17	826	427	418	513	398	583	1300	1850	3160	2090	2120	1040
18	708	877	396	414	456	613	1240	1920	3140	1860	2130	1130
19	601	914	432	411	408	603	1290	1940	3130	1720	2160	1320
20	444	610	420	521	378	634	1350	1970	3120	1570	2470	3390
21	409	526	414	456	430	644	1300	2000	3130	1400	2310	3030
22	407	498	374	456	435	684	1700	2330	2690	1330	2160	1470
23	389	481	369	465	534	945	1750	3000	2700	1360	2090	1240
24	418	479	363	434	453	1030	1340	3450	2700	1220	1720	1190
25	465	455	367	439	425	1070	1400	3490	2660	1170	4160	1220
26	475	445	320	428	419	1050	1420	3100	2600	909	2660	1170
27	505	450	365	376	432	1150	1300	3150	2440	1040	1760	1040
28	500	438	410	446	430	1160	1620	3430	2150	895	1470	952
29	475	437	397	443	444	1190	1670	3230	2090	e800	1220	967
30	455	491	413	384	---	1050	1810	3210	2030	e750	1390	905
31	483	---	372	384	---	1130	---	3810	---	e700	1680	---
TOTAL	23087	16392	13017	13462	13428	21739	37613	66460	91760	55694	56733	39746
MEAN	745	546	420	434	463	701	1254	2144	3059	1797	1830	1325
MAX	1180	1760	715	521	731	1190	1810	3810	4470	2500	4160	3390
MIN	389	336	320	372	378	407	886	1140	2030	700	710	822
AC-FT	45790	32510	25820	26700	26630	43120	74610	131800	182000	110500	112500	78840

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1996#, BY WATER YEAR (WY)

MEAN	1403	1274	1530	1778	2170	2067	2429	3441	4352	2378	1932	1762
MAX	6380	11330	14770	17490	29140	16910	11080	10420	23620	5506	3705	4930
(WY)	1974	1975	1992	1992	1992	1992	1977	1975	1987	1961	1961	1974
MIN	291	94.6	111	109	138	131	565	1471	1489	1302	1182	1048
(WY)	1965	1964	1964	1964	1964	1964	1962	1962	1993	1967	1964	1971

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1960 - 1996#	
ANNUAL TOTAL	631568		449131			
ANNUAL MEAN	1730		1227		2207	
HIGHEST ANNUAL MEAN					9073	1992
LOWEST ANNUAL MEAN					828	1964
HIGHEST DAILY MEAN	28500	Jun 1	4470	Jun 8	65800	Dec 22 1991
LOWEST DAILY MEAN	320	Dec 26	320	Dec 26	75	Apr 1 1964
ANNUAL SEVEN-DAY MINIMUM	367	Dec 22	367	Dec 22	84	Oct 19 1964
INSTANTANEOUS PEAK FLOW			5330	Jun 8	79600	Oct 29 1960
INSTANTANEOUS PEAK STAGE			7.38	Jun 8	37.48	Dec 22 1991
ANNUAL RUNOFF (AC-FT)	1253000		890900		1599000	
10 PERCENT EXCEEDS	2250		2670		4110	
50 PERCENT EXCEEDS	1030		955		1570	
90 PERCENT EXCEEDS	426		410		243	

e Estimated
Period of regulated streamflow.

08160400 COLORADO RIVER ABOVE LAGRANGE, TX

LOCATION.--Lat 29°54'44", long 96°54'13", Fayette County, Hydrologic Unit 12090301, at right downstream end of bridge on new State Highway 71, 1.4 mi upstream from Buckners Creek, and at mile 177.

DRAINAGE AREA.--40,874 mi², of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--1979-82 (discharge measurements only), April 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 210.04 ft above sea level. Dec. 12, 1979 to Sept. 30, 1982, discharge measurements only were made at old State Highway 71 bridge, 1.0 mi downstream and at different datum.

REMARKS.--No estimated daily discharges. Records good. At times, low-flow releases from Lake Travis (station 08154500) are made for generation of electric power to fulfill downstream water contracts. There are many diversions above station for irrigation and for municipal supply. Regulation is the same as that for Colorado River at Austin (08158000), and Colorado River at Bastrop (08159200). One observation of water temperature was made during the year. Radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1869, about 56.7 ft on July 9, 1869 (from marble high-water marker in LaGrange). Stages of other floods are as follows: Dec. 5, 1913, 56.4 ft, from floodmark; June 17, 1935, 50.84 ft, from floodmarks (discharge 255,000 ft³/s from rating curve extended above 200,000 ft³/s); July 27, 1938, 42.95 ft (discharge, 200,000 ft³/s). This data was collected at a site 2.6 mi downstream at streamflow station Colorado River at LaGrange (discontinued) at different datum than at present site.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1170	586	480	402	386	467	1090	1770	3590	1810	478	2830
2	1200	819	625	344	431	464	1150	1140	3240	1980	491	1850
3	1500	1670	594	384	530	579	1130	1110	3320	2030	486	1640
4	1350	926	458	389	540	629	1200	1160	3380	1980	613	1170
5	1230	644	480	413	563	585	1020	1170	3410	1990	725	980
6	1160	572	480	461	755	486	1120	1250	3600	2140	560	1060
7	1140	611	477	490	592	521	1170	1280	3410	2160	533	1010
8	1090	553	505	400	546	504	1370	1290	3520	2180	741	1000
9	977	495	521	443	473	496	1210	1280	4180	2190	1270	1130
10	935	481	580	468	533	513	1060	1740	3470	2200	1520	1230
11	911	453	601	528	456	529	926	1740	3340	2170	1570	1170
12	913	440	731	517	508	514	907	1640	3240	1990	1610	1120
13	904	444	808	470	452	496	905	1780	3150	1860	1900	951
14	897	467	528	493	466	429	903	1800	3000	1750	1900	926
15	881	450	479	502	512	495	1020	1800	3090	1760	1790	979
16	958	375	466	406	469	515	968	1790	3110	1770	1790	1020
17	917	432	970	450	462	521	1090	1780	2910	1770	1800	829
18	863	469	3210	462	435	564	1270	1800	3070	1690	1830	719
19	841	638	1140	513	422	597	1210	1860	3050	1490	1820	1620
20	661	1070	489	407	471	599	1270	1880	3020	1330	1860	2580
21	545	746	428	453	420	587	1350	1930	3010	1200	2130	10200
22	485	612	391	543	402	669	1340	1940	2970	1070	2060	5540
23	462	561	393	473	437	650	1660	2370	2620	955	1950	1880
24	457	531	341	470	498	781	1720	2870	2640	1010	2020	1330
25	450	512	348	472	468	1010	1340	3350	2600	1030	1960	1430
26	493	509	346	443	441	1070	1390	3340	2610	995	3920	1440
27	520	491	349	450	429	1090	1390	3080	2450	769	2630	1170
28	522	472	344	444	423	1150	1270	3160	2300	741	1790	940
29	537	466	352	385	444	1170	1710	3400	1970	710	1440	849
30	543	471	421	491	---	1190	1680	3190	1890	591	3420	787
31	517	---	388	455	---	1060	---	3320	---	523	4350	---
TOTAL	26029	17966	18723	14021	13964	20930	36839	63010	91160	47834	52957	51380
MEAN	840	599	604	452	482	675	1228	2033	3039	1543	1708	1713
MAX	1500	1670	3210	543	755	1190	1720	3400	4180	2200	4350	10200
MIN	450	375	341	344	386	429	903	1110	1890	523	478	719
AC-FT	51630	35640	37140	27810	27700	41510	73070	125000	180800	94880	105000	101900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1996#, BY WATER YEAR (WY)

MEAN	1291	471	2857	3608	4750	3453	2584	3358	4134	2059	1779	1655
MAX	4341	769	16350	18640	31160	18080	7047	8290	11980	2941	2096	1902
(WY)	1995	1995	1992	1992	1992	1992	1992	1992	1992	1992	1992	1992
MIN	725	244	248	247	356	403	987	1915	1989	1543	1366	1313
(WY)	1991	1989	1990	1990	1990	1990	1990	1988	1993	1996	1995	1993

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1988 - 1996#	
ANNUAL TOTAL	770589		454813			
ANNUAL MEAN	2111		1243		2690	
HIGHEST ANNUAL MEAN					9913	1992
LOWEST ANNUAL MEAN					1157	1990
HIGHEST DAILY MEAN	33000	Jun 1	10200	Sep 21	84000	Dec 23 1991
LOWEST DAILY MEAN	341	Dec 24	341	Dec 24	167	Dec 21 1989
ANNUAL SEVEN-DAY MINIMUM	353	Dec 23	353	Dec 23	170	Dec 16 1989
INSTANTANEOUS PEAK FLOW			11800	Sep 21	88200	Dec 23 1991
INSTANTANEOUS PEAK STAGE			14.51	Sep 21	43.32	Dec 23 1991
ANNUAL RUNOFF (AC-FT)	1528000		902100		1949000	
10 PERCENT EXCEEDS	2920		2840		4030	
50 PERCENT EXCEEDS	1200		937		1460	
90 PERCENT EXCEEDS	492		444		369	

Period of regulated streamflow.

08160800 REDGATE CREEK NEAR COLUMBUS, TX

LOCATION.--Lat 29°47'56", long 96°31'55", Colorado County, Hydrologic Unit 12090301, on left bank at downstream side of bridge on Farm Road 109, 1.9 mi upstream from Cummins Creek, and 7.0 mi north of Columbus.

DRAINAGE AREA.--17.3 mi².

PERIOD OF RECORD.--April 1962 to current year.

REVISED RECORDS.--WSP 2122: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 210.82 ft above sea level. Prior to Oct. 1, 1975, datum 10.00 ft higher.

REMARKS.--Records fair except those for estimated daily dicharges, which are poor. No known regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, about 33.4 ft in late June or early July 1940, from information by State Department of Highways and Public Transportation and local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 20	0745	1,020	16.52				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.81	.72	.70	.42	.91	.46	.63	e.50	e.23	e.05	34
2	.49	.86	.88	.67	.48	.51	.45	.54	e.35	e.20	e.05	1.2
3	1.6	.94	.85	.63	.47	.43	.44	.53	e.25	e.18	e.05	1.2
4	.38	.72	.82	.59	.45	.50	.35	.82	e.20	e.16	e.05	1.2
5	.27	.79	.77	.57	.48	.60	.47	.51	e.30	e.15	e.05	1.2
6	.18	.93	.77	.54	.52	.63	.55	.38	e.13	e.14	e.05	.82
7	.22	1.0	.72	.51	.54	.56	.46	.36	e2.0	e.14	e.04	.78
8	.31	.84	.63	.48	.44	.52	.69	.34	e1.0	.13	e.04	.88
9	.32	.68	.83	.55	.42	.40	.61	e.31	e.50	e.12	e.04	2.5
10	.40	.95	.69	.59	.38	.54	.50	e.30	e.30	e.12	e.04	1.5
11	.30	.93	.69	.52	.40	.62	.54	e.29	e.25	e.12	e.04	.85
12	.21	.99	.77	.41	.50	.44	.59	e.28	e.23	e.11	e.04	.79
13	.31	.99	.99	.45	.52	.64	.63	e.27	e.21	e.11	e.04	.82
14	.28	.99	1.0	.42	.53	.47	.47	e.26	e.20	e.10	e.04	.85
15	.17	.99	.82	.50	.44	.64	.32	e.26	e.18	e.10	e.03	6.6
16	.18	.99	.82	.64	.52	.57	.33	e.25	e.18	e.10	e.03	1.4
17	.14	1.7	1.4	.58	.44	.53	.43	e.25	e.17	e.09	e.03	1.0
18	.21	1.7	4.2	.62	.43	.80	.47	e.24	e.16	e.09	e.03	2.2
19	.38	1.2	1.1	.58	.69	.70	.50	e.24	e.16	e.08	e.03	97
20	.37	1.3	.78	.62	.56	.61	.40	e.23	e.15	e.08	e.03	106
21	.21	.97	.55	.69	.48	.51	.39	e.22	e.15	e.08	e.03	28
22	.39	.84	.77	.66	.44	.37	.41	e.22	e.14	e.07	e.03	3.0
23	.33	.82	.82	.69	.41	.53	.70	e.21	e1.0	e.07	e.50	1.9
24	.30	.78	.88	.51	.32	.56	.54	e.21	e.60	e.07	e.70	1.6
25	.33	.89	.88	.44	.34	.59	.38	e.20	e.70	e.07	e1.0	1.4
26	.48	1.0	.86	.51	.44	.57	.39	e.20	e1.3	e.07	e2.0	1.1
27	.74	1.1	.82	.44	.51	.82	.56	e1.0	e.80	e.06	.27	1.1
28	.53	.86	.78	.43	.70	.63	.50	e.40	e.40	e.06	.30	.95
29	.41	.72	.58	.54	1.1	.55	1.2	e.30	e.30	e.06	.72	.81
30	1.1	.72	.50	.59	---	.68	.86	e2.0	e.26	e.06	15	.81
31	.85	---	.58	.42	---	.52	---	e1.0	---	e.05	8.1	---
TOTAL	12.59	29.00	28.27	17.09	14.37	17.95	15.59	13.25	13.07	3.27	29.45	303.46
MEAN	.41	.97	.91	.55	.50	.58	.52	.43	.44	.11	.95	10.1
MAX	1.6	1.7	4.2	.70	1.1	.91	1.2	2.0	2.0	.23	15	106
MIN	.14	.68	.50	.41	.32	.37	.32	.20	.13	.05	.03	.78
AC-FT	25	58	56	34	29	36	31	26	26	6.5	58	602
CFSM	.02	.06	.05	.03	.03	.03	.03	.02	.03	.01	.05	.58
IN.	.03	.06	.06	.04	.03	.04	.03	.03	.03	.01	.06	.65

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1996, BY WATER YEAR (WY)

MEAN	4.83	2.37	4.72	6.68	7.40	6.15	7.40	12.6	9.99	1.05	1.29	3.54
MAX	49.0	17.8	25.4	31.9	67.5	38.1	39.9	55.5	83.4	4.44	17.4	38.5
(WY)	1971	1986	1992	1974	1992	1973	1991	1979	1993	1993	1974	1974
MIN	.000	.070	.25	.24	.21	.19	.24	.33	.065	.007	.000	.040
(WY)	1964	1967	1967	1967	1967	1967	1971	1971	1990	1971	1970	1963

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1962 - 1996	
ANNUAL TOTAL	914.87		497.36			
ANNUAL MEAN	2.51		1.36		5.71	
HIGHEST ANNUAL MEAN					20.7	1992
LOWEST ANNUAL MEAN					.82	1964
HIGHEST DAILY MEAN	190	Mar 13	106	Sep 20	1180	Jun 13 1973
LOWEST DAILY MEAN	.01	Sep 2	.03	Aug 15	.00	Aug 7 1962
ANNUAL SEVEN-DAY MINIMUM	.05	Aug 30	.03	Aug 15	.00	Aug 7 1962
INSTANTANEOUS PEAK FLOW			1020	Sep 20	5360	May 22 1979
INSTANTANEOUS PEAK STAGE			16.52	Sep 20	27.19	May 22 1979
ANNUAL RUNOFF (AC-FT)	1810		987		4140	
ANNUAL RUNOFF (CFSM)	.14		.079		.33	
ANNUAL RUNOFF (INCHES)	1.97		1.07		4.49	
10 PERCENT EXCEEDS	2.6		1.1		5.0	
50 PERCENT EXCEEDS	.95		.51		.85	
90 PERCENT EXCEEDS	.29		.09		.09	

e Estimated

08161000 COLORADO RIVER AT COLUMBUS, TX

LOCATION.--Lat 29°42'22", long 96°32'12", Colorado County, Hydrologic Unit 12090302, near right bank at downstream side of pier of bridge on U.S. Highway 90 at eastern edge of Columbus, 340 ft downstream from Texas and New Orleans Railroad Co. bridge, 2.6 mi downstream from Cummins Creek, and at mile 135.1.

DRAINAGE AREA.--41,640 mi², approximately, of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--January 1903 to December 1911 (gage heights only), May 1916 to current year. Discharge records for 1902-11, published in WSP 84, 99, 132, 174, 210, 288, and 308, have been found to be unreliable and should not be used. Records collected at site 23 mi downstream October 1930 to May 1939, published as "near Eagle Lake". Gage-height records collected in this vicinity since 1903 are contained in reports of the National Weather Service.
Water-quality records.--Chemical analyses: October 1967 to September 1971. Chemical and biochemical analyses: February 1968 to September 1981. Sediment records: March 1957 to September 1973.

REVISED RECORDS.-- WSP 1562: 1920-21(M), 1922. WDR TX-81-3: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 145.52 ft above sea level. Prior to May 1, 1919, various nonrecording gages at sites in the immediate vicinity at datum 7.00 ft higher. May 1, 1919 to Nov. 23, 1930, water-stage recorder at site about 300 ft downstream at datum 7.00 ft higher. Sept. 17, 1930 to June 12, 1939 (Oct. 1, 1930, to May 31, 1939, used herein), water-stage recorder at site 23 mi downstream at different datum. May 17 to Nov. 14, 1939, nonrecording gage at present site and datum 10.00 ft higher; Nov. 15, 1939 to Dec. 31, 1988, water-stage recorder at present site and at datum 10.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Low-flow releases from Lake Travis, 251 mi upstream, are made for the generation of electric power to fulfill downstream water contracts. During the current year, the Lower Colorado River Authority also reported that 19,051 ac-ft was diverted from the river upstream to Cedar Creek Reservoir. Cedar Creek Reservoir is located 10 mi north of the Colorado River and 3.5 mi west of Fayetteville. Flow is also affected at times by discharge from the flood-detention pools of 20 floodwater-retarding structures with a combined detention capacity of 25,570 acre-ft. These structures control runoff from a 73.1 mi² area in the Cummins Creek watershed. There are many other diversions above this station for irrigation and for municipal supply. Gage-height telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--20 years (water years 1917-36) 3,809 ft³/s (2,760,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1917-36).--Maximum discharge, 190,000 ft³/s June 18, 1935 (gage height, 48.5 ft), present site and datum, computed on basis of records for station near Eagle Lake; minimum, 93 ft³/s Sept. 1, 1918.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 51.6 ft, present datum, in July 1869 and Dec. 6, 1913, from information by local resident. River divided each time and left Columbus on an island.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1190	498	451	463	453	394	806	1720	3570	1890	578	5120
2	1050	543	458	455	414	395	845	1640	3380	1810	543	3350
3	1180	794	552	417	416	390	890	1140	3340	2000	548	1980
4	1480	1230	572	426	492	439	898	1090	3390	2030	540	1720
5	1200	812	460	432	521	514	943	1130	3460	1970	612	1530
6	1080	624	454	432	526	476	845	1140	3580	1970	717	1100
7	1020	554	452	463	688	384	921	1200	3590	2120	615	1050
8	1000	550	448	490	579	399	983	1220	3520	2120	589	992
9	946	523	449	432	533	397	1130	1270	3860	2150	717	980
10	870	488	473	443	481	386	1010	1300	3990	2160	1110	1100
11	836	453	449	460	517	401	934	1720	3550	2150	1300	1260
12	825	432	431	510	458	410	835	1730	3390	2150	1350	1280
13	817	404	516	500	499	401	836	1650	3390	1970	1420	1190
14	806	368	624	469	462	391	831	1780	3180	1810	1660	1050
15	791	384	492	476	465	340	814	1790	3110	1720	1610	1140
16	796	411	515	494	494	365	899	1790	3190	1710	1540	1160
17	840	372	530	433	470	378	874	1780	3120	1730	1560	1090
18	809	380	1810	442	464	375	995	1780	3030	1710	1550	956
19	778	411	4090	452	448	394	1110	1790	3140	1620	1610	4370
20	746	530	1500	501	433	416	1080	1860	3120	1440	1620	3220
21	625	818	794	435	470	419	1130	1890	3080	1290	1620	7690
22	547	622	682	453	437	415	1230	1930	3090	1160	1920	10400
23	494	517	606	533	416	466	1180	1950	2940	1040	1820	4410
24	462	466	569	478	435	468	1500	2560	2660	935	1760	2290
25	449	471	518	469	456	574	1460	2850	2680	953	2070	1700
26	444	484	495	478	418	723	1210	3340	2720	966	2140	1740
27	471	483	475	449	429	783	1260	3200	2640	933	3350	1600
28	479	456	456	454	424	806	1270	3040	2390	774	2310	1350
29	481	450	439	457	393	848	1350	3180	2290	716	1620	1140
30	513	448	439	423	---	880	1930	3340	1990	702	2000	1020
31	509	---	485	466	---	882	---	3110	---	620	4640	---
TOTAL	24534	15976	21684	14285	13691	15309	31999	60910	94380	48319	47039	68978
MEAN	791	533	699	461	472	494	1067	1965	3146	1559	1517	2299
MAX	1480	1230	4090	533	688	882	1930	3340	3990	2160	4640	10400
MIN	444	368	431	417	393	340	806	1090	1990	620	540	956
AC-FT	48660	31690	43010	28330	27160	30370	63470	120800	187200	95840	93300	136800

08161000 COLORADO RIVER AT COLUMBUS, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1996#, BY WATER YEAR (WY)

MEAN	2540	2130	2145	2393	2786	2407	3195	4474	5087	3268	2139	2175
MAX	25310	13360	16450	19800	33800	20220	14440	27680	28660	25710	10030	8859
(WY)	1937	1975	1992	1992	1992	1992	1977	1957	1987	1938	1938	1961
MIN	352	204	162	182	203	275	543	1257	1627	1191	756	498
(WY)	1957	1964	1964	1964	1967	1952	1951	1937	1942	1937	1937	1937

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1937 - 1996#	
ANNUAL TOTAL	819257		457104			
ANNUAL MEAN	2245		1249		2893	
HIGHEST ANNUAL MEAN					10810	1992
LOWEST ANNUAL MEAN					914	1952
HIGHEST DAILY MEAN	35400	Jun 2	10400	Sep 22	161000	Jul 29 1938
LOWEST DAILY MEAN	368	Nov 14	340	Mar 15	110	Nov 5 1978
ANNUAL SEVEN-DAY MINIMUM	390	Nov 13	378	Mar 13	119	Jan 5 1964
INSTANTANEOUS PEAK FLOW			12400	Sep 21	175000	Jul 29 1938
INSTANTANEOUS PEAK STAGE			20.65	Sep 21	41.28	Jul 29 1938
ANNUAL RUNOFF (AC-FT)	1625000		906700		2096000	
10 PERCENT EXCEEDS	3600		3050		5400	
50 PERCENT EXCEEDS	1240		838		1720	
90 PERCENT EXCEEDS	485		430		420	

Period of regulated streamflow.

08162000 COLORADO RIVER AT WHARTON, TX

LOCATION.--Lat 29°18'32", long 96°06'13", Wharton County, Hydrologic Unit 12090302, near left bank at downstream side of downstream bridge on U.S. Highway 59 in Wharton, 1,100 ft downstream from Texas and New Orleans Railroad Company bridge, 12 mi upstream from Jones Creek, and at mile 66.6.

DRAINAGE AREA.--42,003 mi², approximately, of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--July 1916 to August 1918 (intermittent periods), March 1919 to September 1925, July and August 1938 (flood discharge measurements only), October 1938 to current year. June to November 1901 May to September 1902, daily records published in U.S. Department of Agriculture, Office of Experiment Stations, Bulletin Nos. 119 and 133. Gage-height records collected in this vicinity since 1935 are contained in reports of the National Weather Service.
Water-quality records.--Chemical analyses: April 1944 to September 1995. Chemical and biochemical analyses: January 1968 to September 1995. Pesticide analyses: October 1967 to June 1982. Sediment analyses: October 1974 to September 1995. Radiochemical analyses: December 1973 to September 1995.

REVISED RECORDS.--WSP 878: 1938(M). WDR TX-81-3: Drainage area. WDR TX-88-3: 1985.

GAGE.--Water-stage recorder. Datum of gage is 52.42 ft above sea level. Prior to Oct. 1, 1938, various types of recording and nonrecording gages 800 ft upstream at different datum. Oct. 1, 1938 to June 1, 1956, nonrecording gage 100 ft upstream at datum 13.00 ft higher. June 1, 1966 to Sept. 30, 1975, water-stage recorder at present site at datum 13.00 ft higher. Oct. 1, 1975 to Mar. 1, 1983, water-stage recorder at present site at datum 10.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair. There are many diversions above station for irrigation, municipal supply, cooling water for thermal-electric power plant, and for oil field operations. For statement regarding upstream regulation, see station 08161000. Radio telemeter at station.

AVERAGE DISCHARGE PRIOR TO REGULATION.--5 years (water years 1920-25) 3,680 ft³/s (2,666,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1920-25).--Maximum discharge observed, 39,600 ft³/s Oct. 15, 1919; no flow Aug. 6, 1925 (result of pumping).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1869, 51.9 ft Dec. 8, 1913, present datum, from information by local residents; below Wharton floodwater combined with that of the Brazos River. Flood of about July 12, 1869, reached about same height. Flood of June 20, 1935, reached a stage of 51.2 ft, present datum, furnished by National Weather Service (discharge, 159,000 ft³/s), from rating curve defined by current-meter measurements below 145,000 ft³/s. Flood of July 30, 1938, reached a stage of 50.4 ft, present datum, observed by U.S. Geological Survey personnel (discharge, 145,000 ft³/s).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	563	618	545	577	529	591	677	1280	1780	1480	601	4580
2	575	660	541	609	552	533	642	1230	1950	1020	470	5640
3	634	733	544	590	547	520	566	1290	2210	809	310	3990
4	619	699	546	577	523	513	598	876	1990	824	284	2630
5	753	1250	581	554	527	513	662	624	2530	884	311	2030
6	822	1110	545	581	576	587	822	482	2760	843	285	1680
7	620	842	483	586	592	635	892	415	2900	837	399	1180
8	570	721	482	589	695	573	865	304	2870	936	486	875
9	536	661	492	611	743	516	910	302	2640	1030	410	655
10	521	654	485	611	678	539	937	432	2720	1050	231	530
11	424	637	516	574	628	530	842	390	2910	1090	457	556
12	452	597	543	592	599	527	600	588	2340	1070	732	781
13	467	556	512	613	590	532	471	641	2190	1090	845	777
14	449	535	492	632	564	532	466	563	2110	1060	983	731
15	449	499	595	625	567	519	465	578	1970	992	1120	716
16	507	476	618	616	547	481	410	616	1810	903	1200	844
17	759	574	919	621	546	427	359	616	1860	841	1090	928
18	834	627	1280	615	558	442	345	617	1860	842	1080	871
19	858	604	1590	589	552	450	259	588	1720	850	1110	806
20	837	674	3820	568	554	435	316	586	1840	876	1110	3440
21	809	561	2270	587	533	428	356	617	1880	840	1050	4240
22	737	779	1280	618	537	438	371	642	1850	762	960	7820
23	662	794	978	569	557	441	478	669	2330	688	1450	10300
24	588	683	842	580	537	449	584	674	2830	551	1680	5010
25	532	603	756	615	520	484	608	868	3900	512	1560	2620
26	512	567	712	578	537	439	801	1340	3160	526	1760	1860
27	498	570	655	573	558	510	677	1720	2860	717	1730	1630
28	521	581	629	564	554	598	639	1820	2530	979	3240	1680
29	570	578	611	557	576	650	719	1630	2220	931	2670	1370
30	636	554	599	554	---	696	820	1690	1880	801	2350	1130
31	621	---	592	551	---	663	---	1880	---	727	2620	---
TOTAL	18935	19997	26053	18276	16576	16191	18157	26568	70400	27361	34584	71900
MEAN	611	667	840	590	572	522	605	857	2347	883	1116	2397
MAX	858	1250	3820	632	743	696	937	1880	3900	1480	3240	10300
MIN	424	476	482	551	520	427	259	302	1720	512	231	530
AC-FT	37560	39660	51680	36250	32880	32110	36010	52700	139600	54270	68600	142600

08162000 COLORADO RIVER AT WHARTON, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1996#, BY WATER YEAR (WY)

MEAN	2139	2329	2281	2545	3001	2562	3030	4192	4683	2359	1385	1919
MAX	12350	13870	15060	21810	35520	21550	13730	27300	30910	12490	3916	9394
(WY)	1958	1975	1992	1992	1992	1992	1977	1957	1987	1940	1945	1961
MIN	296	220	253	224	268	328	566	825	838	706	406	436
(WY)	1957	1957	1990	1964	1967	1952	1951	1962	1948	1967	1964	1954

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1939 - 1996#	
ANNUAL TOTAL	803037		364998			
ANNUAL MEAN	2200		997		2697	
HIGHEST ANNUAL MEAN					11120	1992
LOWEST ANNUAL MEAN					615	1964
HIGHEST DAILY MEAN	34800	Jun 3	10300	Sep 23	90600	Jul 3 1940
LOWEST DAILY MEAN	293	May 2	231	Aug 10	42	Aug 22 1964
ANNUAL SEVEN-DAY MINIMUM	467	Oct 10	344	Aug 4	110	Dec 11 1956
INSTANTANEOUS PEAK FLOW			11900	Sep 23	100000	Jul 3 1940
INSTANTANEOUS PEAK STAGE			20.47	Sep 23	48.99	Jul 3 1940
ANNUAL RUNOFF (AC-FT)	1593000		724000		1954000	
10 PERCENT EXCEEDS	3690		1980		5350	
50 PERCENT EXCEEDS	1070		624		1320	
90 PERCENT EXCEEDS	562		469		468	

Period of regulated streamflow.

08162500 COLORADO RIVER NEAR BAY CITY, TX

LOCATION.--Lat 28°58'26", long 96°00'44", Matagorda County, Hydrologic Unit 12090302, on left bank, 6,300 ft downstream from bridge on State Highway 35, 7,100 ft downstream from Texas and New Orleans Railroad Co. bridge, 2.8 mi west of Bay City, and at mile 32.5.

DRAINAGE AREA.--42,240 mi², approximately, of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--July 1940 (WSP 1046), April 1948 to current year. Records of elevation collected in this vicinity since 1946 are contained in reports of the National Weather Service.
Water-quality records.--Chemical and biochemical analyses: October 1974 to September 1975.

REVISED RECORDS.--WDR TX-81-3: Drainage area. WDR TX-88-3: 1985.

GAGE.--Water-stage recorder. Datum of gage is sea level. July 2-6, 1940, nonrecording gage at highway bridge, 6,300 ft upstream at datum 30.60 ft lower. On February 19, 1992, gage was temporarily moved 6,200 ft upstream at same datum. Gage re-established on left bank 6,300 ft downstream on May 12, 1993.

REMARKS.--Records good except those for estimated daily discharges, which are poor. There are diversions above station for irrigation and for municipal supply. For statement regarding regulation by National Resource Conservation Service (formerly Soil Conservation Service) floodwater-retarding structures, see station 08161000. Radio telemeter at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since 1869, 56.1 ft Dec. 10, 1913. Flood in July 1869 probably reached about same elevation. Elevation of other floods are as follows: May 8, 1922, 55.4 ft; June 1929, 55.0 ft; June 22, 1935, 54.6 ft; Oct. 5, 1936, 52.2 ft; Aug. 2, 1938, 53.4 ft; Nov. 27, 1940, 47.6 ft. All above flood data from information by Texas and New Orleans Railroad Co. and adjusted to present site. 48.2 ft, present datum, July 4, 1940, at site 6,300 ft upstream at bridge on State Highway 35, observed by U.S. Army Corps of Engineers (elevation, 46.6 ft), adjusted to present site; no flow at times in 1951-53 and 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	481	768	543	734	554	199	591	856	648	1400	446	3880
2	619	727	558	687	540	20	515	1010	684	686	359	5870
3	591	2310	555	675	561	212	442	860	1170	400	175	4530
4	383	1760	544	651	536	390	364	709	1080	259	e50	2990
5	277	1150	528	631	514	356	437	300	1380	236	<20	2030
6	883	1490	573	622	574	520	608	150	1840	276	<20	1600
7	992	1140	507	619	651	428	877	99	1960	246	<20	1210
8	502	896	470	598	629	456	820	59	2070	296	<20	1200
9	218	815	479	616	761	456	782	385	1830	398	110	1060
10	297	800	491	637	737	425	731	<20	1700	506	90	739
11	316	720	460	614	636	426	809	<20	2050	492	<20	448
12	182	644	598	575	583	395	621	<20	1670	512	230	473
13	99	624	579	593	557	393	355	172	1390	503	445	622
14	126	569	537	638	559	317	252	145	1210	531	636	515
15	233	563	551	637	516	332	170	94	1120	422	695	598
16	317	506	692	586	503	330	182	<20	906	384	868	818
17	498	584	4960	601	455	287	93	<20	896	382	816	849
18	690	1130	10400	643	590	821	143	<20	1000	467	770	665
19	740	1050	6250	548	554	20	e50	<20	943	494	803	562
20	737	1090	3870	560	498	151	<20	<20	916	470	782	2500
21	821	1010	3650	564	432	205	110	<20	1020	508	872	9020
22	807	737	3190	609	481	208	227	<20	1030	431	1180	6620
23	723	936	2540	616	541	220	243	<20	1530	390	2850	10300
24	624	830	1540	559	515	247	307	<20	3670	426	2990	6530
25	613	717	1170	622	557	312	317	<20	6850	255	2350	3550
26	572	640	995	675	445	355	259	50	10800	290	1890	2120
27	1160	648	890	589	400	359	379	289	6210	359	1730	1480
28	1170	577	810	613	494	532	646	798	3290	588	2380	1450
29	647	554	768	622	236	554	190	755	2520	715	2840	1230
30	987	538	769	592	---	598	587	715	1930	628	2440	992
31	856	---	762	546	---	588	---	863	---	544	2870	---
TOTAL	18161	26523	51229	19072	15609	11112	12127	8569	65313	14494	31767	76451
MEAN	586	884	1653	615	538	358	404	276	2177	468	1025	2548
MAX	1170	2310	10400	734	761	821	877	1010	10800	1400	2990	10300
MIN	99	506	460	546	236	20	20	20	648	236	20	448
AC-FT	36020	52610	101600	37830	30960	22040	24050	17000	129500	28750	63010	151600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1996, BY WATER YEAR (WY)

MEAN	2250	2213	2276	2629	3303	2537	2736	4005	4489	1488	842	1746
MAX	12820	13470	16200	25780	42200	25780	13410	27750	30360	7675	2876	11160
(WY)	1958	1975	1992	1992	1992	1992	1977	1957	1987	1961	1961	1961
MIN	254	226	292	249	246	257	125	227	155	1.00	114	93.9
(WY)	1990	1957	1990	1957	1967	1967	1964	1964	1971	1967	1964	1966

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1948 - 1996	
ANNUAL TOTAL	845472		350427			
ANNUAL MEAN	2316		957		2550	
HIGHEST ANNUAL MEAN					14270	1992
LOWEST ANNUAL MEAN					375	1964
HIGHEST DAILY MEAN	37300	Jun 3	10800	Jun 26	69800	Oct 20 1994
LOWEST DAILY MEAN	99	Oct 13	20	Mar 2	.00	Jun 1 1951
ANNUAL SEVEN-DAY MINIMUM	210	Oct 9	<20	May 16	.44	Oct 4 1969
INSTANTANEOUS PEAK FLOW			12200	Jun 26	84100	Jun 26 1960
INSTANTANEOUS PEAK STAGE			16.76	Jun 26	46.40	Jun 26 1960
ANNUAL RUNOFF (AC-FT)	1677000		695100		1847000	
10 PERCENT EXCEEDS	4360		1940		5540	
50 PERCENT EXCEEDS	899		589		886	
90 PERCENT EXCEEDS	404		151		238	

e Estimated
< Actual value is known to be less than value shown.

08162600 TRES PALACIOS RIVER NEAR MIDFIELD, TX

LOCATION.--Lat 28°55'40", long 96°10'15", Matagorda County, Hydrologic Unit 12100401, at left downstream end of bridge on Farm Road 456, 1.0 mi downstream from Juanita Creek, and 2.4 mi southeast of Midfield.

DRAINAGE AREA.--145 mi².

PERIOD OF RECORD.--June 1970 to current year. Prior to October 1973, published as Tres Palacios Creek near Midfield. Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1968 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 5.38 ft above sea level. June 17, 1970, to Apr. 28, 1988, at same site and datum. Apr. 29, 1988, to Sept. 4, 1991, at right downstream end of bridge at same datum.

REMARKS.--No estimated daily discharges. Records good. There are ten known diversions above station, but amounts are unknown. An undetermined amount of water from irrigated rice fields enters the river at various points upstream from station. Extensive channel cleaning upstream and downstream from the gage was begun during the 1983 water year and completed during the 1984 water year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1885, 37 ft in June 1960, and 35 ft in August 1945, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 18	0200	6,100	27.62	Sept. 8	1800	1,750	17.96
June 25	2300	7,320	28.64	Sept. 21	1500	2,620	21.32

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	31	7.6	32	7.6	9.0	7.5	12	8.2	272	35	323
2	7.0	24	7.6	25	8.3	24	11	10	8.5	132	19	417
3	30	172	7.4	19	7.8	19	11	11	12	73	11	221
4	40	455	8.4	16	7.3	9.4	7.7	12	15	41	6.2	152
5	24	139	9.6	15	7.4	7.2	8.0	9.8	19	23	5.6	82
6	20	63	8.9	55	8.8	5.7	16	8.6	23	19	4.5	40
7	15	36	7.8	61	9.7	4.8	23	8.0	35	15	2.9	65
8	13	24	7.3	33	11	5.3	15	8.1	24	15	3.2	1100
9	11	17	8.5	18	11	4.4	14	7.9	18	14	6.3	871
10	9.6	13	8.2	14	8.6	4.6	10	6.0	17	14	5.2	312
11	7.2	12	8.2	13	7.7	5.0	7.0	28	17	13	6.5	143
12	6.4	10	8.7	12	7.3	5.2	8.4	200	15	12	6.0	66
13	6.4	9.8	8.8	11	6.8	5.4	8.4	236	14	13	8.6	34
14	6.6	10	8.2	10	6.9	5.7	9.7	96	16	12	6.1	22
15	7.0	11	8.6	9.8	6.9	5.9	11	49	14	11	7.0	15
16	6.6	9.9	9.1	9.6	6.6	6.0	16	26	12	11	14	13
17	6.4	12	2500	8.9	6.4	11	10	12	12	12	20	26
18	6.5	21	5660	8.7	6.6	14	6.5	9.2	19	13	16	68
19	6.4	30	2830	7.9	7.0	8.6	4.7	8.7	18	16	11	52
20	5.9	33	592	8.2	6.9	8.2	6.5	8.1	19	19	11	472
21	6.7	30	216	8.6	6.7	5.7	14	7.1	22	15	21	2120
22	7.0	27	1030	8.6	6.2	4.8	8.3	6.4	29	20	428	1260
23	6.0	16	657	8.8	6.1	5.0	7.4	6.4	263	22	1160	434
24	5.1	12	219	8.2	5.8	5.8	11	5.8	1690	24	949	190
25	7.4	9.5	106	7.9	6.3	5.2	15	6.1	4800	22	605	169
26	6.4	8.1	62	8.2	6.3	6.5	15	6.7	6780	18	301	126
27	5.7	8.4	41	8.4	6.0	7.9	14	10	3920	17	159	63
28	4.7	8.8	29	7.6	5.7	6.9	10	9.9	1460	19	86	34
29	4.6	8.1	23	7.7	6.4	8.5	12	8.6	1130	30	52	23
30	15	7.3	20	8.2	---	8.4	20	8.4	547	32	43	18
31	28	---	31	7.6	---	8.3	---	8.8	---	35	54	---
TOTAL	338.9	1267.9	14148.9	476.9	212.1	241.4	338.1	850.6	20976.7	1004	4063.1	8931
MEAN	10.9	42.3	456	15.4	7.31	7.79	11.3	27.4	699	32.4	131	298
MAX	40	455	5660	61	11	24	23	236	6780	272	1160	2120
MIN	4.6	7.3	7.3	7.6	5.7	4.4	4.7	5.8	8.2	11	2.9	13
AC-FT	672	2510	28060	946	421	479	671	1690	41610	1990	8060	17710

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1996, BY WATER YEAR (WY)

MEAN	246	131	140	142	157	90.5	138	237	198	118	55.1	212
MAX	1375	581	568	542	978	585	642	1080	699	623	163	1308
(WY)	1985	1993	1992	1991	1992	1985	1991	1982	1996	1981	1974	1979
MIN	10.2	9.53	5.87	4.83	6.66	7.79	10.4	19.7	10.4	21.7	16.9	14.5
(WY)	1992	1991	1991	1971	1976	1996	1989	1978	1990	1986	1976	1990

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1970 - 1996	
ANNUAL TOTAL	62228.1		52849.6			
ANNUAL MEAN	170		144		156	
HIGHEST ANNUAL MEAN					325	1992
LOWEST ANNUAL MEAN					42.2	1986
HIGHEST DAILY MEAN	5850	Apr 5	6780	Jun 26	12500	Oct 19 1994
LOWEST DAILY MEAN	4.6	Oct 29	2.9	Aug 7	1.0	Nov 3 1978
ANNUAL SEVEN-DAY MINIMUM	5.7	Oct 23	4.8	Aug 4	1.1	Oct 30 1978
INSTANTANEOUS PEAK FLOW			7320	Jun 25	17000	Oct 17 1984
INSTANTANEOUS PEAK STAGE			28.64	Jun 25	32.43	Oct 17 1984
ANNUAL RUNOFF (AC-FT)	123400		104800		112800	
10 PERCENT EXCEEDS	243		177		246	
50 PERCENT EXCEEDS	22		11		24	
90 PERCENT EXCEEDS	8.5		6.1		8.5	

08163500 LAVACA RIVER AT HALLETTSVILLE, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°26'35", long 96°56'41", Lavaca County, Hydrologic Unit 12100101, at downstream side of bridge on U.S. Highway 77 in Hallettsville and 0.7 mi downstream from Campbell Branch.

DRAINAGE AREA.--108 mi^2.

PERIOD OF RECORD.--July 1939 to April 1993 (daily mean discharge). April 1993 to current year (peak discharges).

REVISED RECORDS.--WSP 1312: 1942(M), 1944(M). WSP 1732: 1952(M). WSP 2123: Drainage area.

GAGE.--Non-recording gage. Datum of gage is 186.72 ft above sea level. Prior to Apr. 19, 1960, water-stage recorder for high stages and movable nonrecording gage for stages below about 6.2 ft, Apr. 20, 1960, to June 2, 1961, movable nonrecording gage at same site. June 3, 1961 to Apr. 7, 1993, water-stage recorder at site 75 ft downstream. All gages at same datum.

REMARKS.--Records good. There are no diversions above station. The Lavaca County Flood Control District No. 3 began channel rectification 1.6 mi downstream from gage in August 1983. This rectification project reached the gage on Jan. 26, 1984, and was completed in June 1984. The channel was previously rectified in 1959-60.

AVERAGE DISCHARGE.--53 years (water years 1940-92), 50.8 ft^3/s (6.39 in/yr), 36,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 99,500 ft^3/s Aug. 31, 1981 (gage height, 41.1 ft, from floodmark), from rating curve extended above 23,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times in 1953, 1956, and 1990.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage from about 1870 to 1940, 32.8 ft July 16, 1936, from information by local resident. Maximum stage since at least 1840, that of Aug. 31, 1981.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sept. 21	Unknown	2,560	14.52				

08164000 LAVACA RIVER NEAR EDNA, TX

LOCATION.--Lat 28°57'35", long 96°41'10", Jackson County, Hydrologic Unit 12100101, at downstream side near center of upstream bridge of two bridges on U.S. Highway 59, 660 ft upstream from Texas and New Orleans Railroad Co. bridge, and 2.8 mi southwest of Edna.

DRAINAGE AREA.--817 mi².

PERIOD OF RECORD.--August 1938 to current year.
Water-quality records.--Chemical analyses: August 1945 to September 1977. Chemical and biochemical analyses: February 1971 to August 1993. Pesticide analyses: January 1968 to August 1981. Sediment analyses: November 1977 to August 1993.

REVISED RECORDS.--WSP 1923: 1955. WRD TX-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 14.10 ft above sea level. Prior to June 6, 1939, nonrecording gage (property of U.S. Army Corps of Engineers); June 6, 1939 to Apr. 3, 1957, nonrecording gage at site 110 ft downstream; Apr. 4, 1957, to Mar. 21, 1961, nonrecording gage; all at same datum.

REMARKS.--Records good. Small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 33.8 ft May 25, 1936 (discharge, 83,400 ft³/s), from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,100 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 21	1800	5,420	19.73				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	e10	15	37	17	33	21	16	4.3	119	11	646
2	12	22	16	32	17	28	21	18	4.3	75	8.1	183
3	15	42	15	27	17	27	20	18	7.0	55	7.4	102
4	14	23	16	25	17	28	20	16	7.1	45	7.0	75
5	12	18	16	24	17	24	22	15	19	38	6.5	80
6	12	14	16	22	17	22	22	13	14	33	5.9	146
7	15	13	16	21	19	20	22	12	22	30	4.9	78
8	17	12	15	21	19	18	20	12	31	28	4.2	858
9	14	11	15	20	19	17	20	12	18	25	5.3	446
10	14	11	15	20	19	17	19	11	13	24	4.1	1230
11	14	12	15	20	19	17	18	11	9.4	22	3.3	955
12	13	12	15	19	18	16	17	15	9.2	21	2.8	181
13	13	11	15	19	17	16	17	12	7.8	22	3.3	102
14	13	12	16	20	17	17	17	10	7.3	20	3.4	70
15	13	11	16	20	17	17	20	8.8	5.8	19	2.9	58
16	11	11	16	19	17	17	16	8.4	5.7	19	5.5	124
17	11	105	454	19	15	18	15	8.0	4.0	18	19	392
18	11	171	431	19	16	18	15	7.8	4.0	18	12	168
19	12	559	369	18	16	18	14	7.0	3.9	19	7.7	216
20	10	308	153	18	16	17	14	6.5	3.8	18	6.6	1400
21	9.0	106	97	18	15	17	14	6.4	17	17	5.8	4940
22	8.8	56	241	19	15	17	14	5.9	19	15	5.4	4760
23	9.5	36	146	20	15	17	16	5.5	12	14	9.3	813
24	9.5	28	88	19	15	17	17	5.1	18	14	44	470
25	8.7	22	64	18	15	18	13	5.0	25	19	181	540
26	8.7	20	50	19	15	18	13	4.6	232	37	111	316
27	9.6	20	41	19	15	19	12	4.3	1650	47	147	252
28	9.6	17	35	18	15	23	12	4.3	1300	32	137	142
29	10	16	30	19	17	24	17	4.3	207	22	58	100
30	e10	15	37	19	---	22	18	4.3	246	16	115	78
31	e10	---	45	18	---	23	---	4.3	---	13	1840	---
TOTAL	361.4	1724	2529	646	483	620	516	291.5	3926.6	914	2784.4	19921
MEAN	11.7	57.5	81.6	20.8	16.7	20.0	17.2	9.40	131	29.5	89.8	664
MAX	17	559	454	37	19	33	22	18	1650	119	1840	4940
MIN	8.7	10	15	18	15	16	12	4.3	3.8	13	2.8	58
AC-FT	717	3420	5020	1280	958	1230	1020	578	7790	1810	5520	39510
CFSM	.01	.07	.10	.03	.02	.02	.02	.01	.16	.04	.11	.81
IN.	.02	.08	.12	.03	.02	.03	.02	.01	.18	.04	.13	.91

08164000 LAVACA RIVER NEAR EDNA, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1996, BY WATER YEAR (WY)

MEAN	379	281	246	277	389	232	437	663	616	216	82.3	325
MAX	7118	3431	2400	1564	5214	1341	2766	3239	5005	3999	713	2842
(WY)	1995	1941	1977	1979	1992	1941	1992	1982	1973	1940	1946	1978
MIN	.58	.003	.19	.055	13.5	6.58	4.43	8.16	.72	2.14	.16	.13
(WY)	1991	1957	1991	1957	1954	1956	1956	1956	1990	1954	1990	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1938 - 1996	
ANNUAL TOTAL	80226.4		34716.9			
ANNUAL MEAN	220		94.9		345	
HIGHEST ANNUAL MEAN					1385	1992
LOWEST ANNUAL MEAN					6.12	1956
HIGHEST DAILY MEAN	7880	Jan 14	4940	Sep 21	122000	Oct 19 1994
LOWEST DAILY MEAN	8.7	Oct 25	2.8	Aug 12	.00	Nov 10 1954
ANNUAL SEVEN-DAY MINIMUM	9.1	Oct 21	3.6	Aug 9	.00	Jul 2 1956
INSTANTANEOUS PEAK FLOW			5420	Sep 21	150000	Oct 19 1994
INSTANTANEOUS PEAK STAGE			19.73	Sep 21	35.49	Oct 19 1994
ANNUAL RUNOFF (AC-FT)	159100		68860		249600	
ANNUAL RUNOFF (CFSM)	.27		.12		.42	
ANNUAL RUNOFF (INCHES)	3.65		1.58		5.73	
10 PERCENT EXCEEDS	274		143		400	
50 PERCENT EXCEEDS	58		17		51	
90 PERCENT EXCEEDS	13		7.0		9.0	

e Estimated

08164300 NAVIDAD RIVER NEAR HALLETTSVILLE, TX

LOCATION.--Lat 29°28'00", long 96°48'45", Lavaca County, Hydrologic Unit 12100102, on right bank 28 ft downstream from bridge on U.S. Highway 90-A, 0.8 mi downstream from Mixons Creek, 1.2 mi southwest of Sublime, and 8 mi northeast of Hallettsville.

DRAINAGE AREA.--332 mi².

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

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 159.28 ft above sea level.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, 40 ft in June 1940; flood in July 1936 reached a stage of 39 ft, from information by local residents and Southern Pacific Railroad Company.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.91	3.9	7.6	9.2	7.5	18	9.9	12	.55	12	.17	155
2	1.1	6.5	8.2	9.1	11	15	9.2	8.1	.69	9.0	.11	67
3	1.4	7.9	8.4	8.3	9.3	11	9.1	6.4	57	7.3	.07	16
4	4.4	5.4	8.5	8.0	9.0	9.3	9.5	5.7	125	6.0	.05	239
5	5.2	3.6	8.5	8.0	8.9	9.2	9.7	5.3	48	5.2	.05	66
6	2.0	4.3	8.4	8.0	9.1	9.6	9.9	4.7	17	4.2	.03	14
7	1.2	5.3	8.4	8.0	9.7	9.4	10	4.0	11	3.4	.02	32
8	.99	5.5	8.2	7.6	10	8.2	10	3.2	10	2.9	.02	15
9	.90	5.3	7.5	7.6	10	6.9	9.6	3.0	8.8	5.2	.10	457
10	.83	5.4	7.2	7.8	10	7.2	8.9	3.1	8.8	9.9	.20	151
11	.80	5.3	7.2	8.3	9.5	7.8	8.6	2.6	5.8	3.6	.09	30
12	.74	5.2	7.5	8.6	8.7	8.5	8.3	2.1	4.2	2.3	.78	14
13	.68	4.9	8.0	8.3	8.0	9.3	8.3	1.8	3.6	1.9	4.1	11
14	.67	5.0	8.5	7.7	8.0	9.8	8.2	1.5	2.8	1.5	.38	9.1
15	.67	5.2	9.3	7.6	8.0	10	7.1	1.3	2.1	1.5	.19	183
16	.62	5.1	10	7.9	7.5	10	6.0	1.1	1.7	1.3	.17	96
17	.54	11	9.9	8.7	6.4	9.9	5.4	.88	1.2	1.1	.14	18
18	.58	12	30	8.8	6.7	9.7	5.1	.81	.95	.88	.10	29
19	.60	11	21	8.2	8.3	8.6	4.9	.72	1.1	.73	.11	205
20	.55	19	14	8.0	8.3	7.9	4.8	.67	.70	.65	.12	391
21	.52	11	10	8.1	8.3	7.6	4.5	.64	.60	.58	.12	2070
22	.47	8.1	11	8.7	8.2	7.7	4.2	.58	.60	.47	.33	642
23	.52	7.6	10	11	8.0	8.2	3.8	.50	.75	.41	1.4	63
24	.54	7.2	9.3	11	7.8	9.0	3.5	.40	2.0	.35	1.2	37
25	.58	7.2	9.2	11	7.2	10	3.5	.40	546	.65	26	31
26	.74	7.5	8.7	10	7.2	9.6	3.4	.46	689	.61	14	26
27	.86	8.1	8.8	9.4	7.2	13	3.4	.41	148	.57	7.4	19
28	.76	7.9	8.9	8.9	7.5	13	3.5	.44	28	.39	10	16
29	.72	7.0	8.9	7.5	10	12	6.7	.45	52	.27	49	14
30	1.2	7.0	8.8	8.6	---	12	16	.36	15	.23	153	13
31	1.6	---	8.7	9.4	---	11	---	.36	---	.22	39	---
TOTAL	33.89	215.4	308.6	267.3	245.3	308.4	215.0	73.98	1792.94	85.31	308.45	5129.1
MEAN	1.09	7.18	9.95	8.62	8.46	9.95	7.17	2.39	59.8	2.75	9.95	171
MAX	5.2	19	30	11	11	18	16	12	689	12	153	2070
MIN	.47	3.6	7.2	7.5	6.4	6.9	3.4	.36	.55	.22	.02	9.1
AC-FT	67	427	612	530	487	612	426	147	3560	169	612	10170
CFSM	.00	.02	.03	.03	.03	.03	.02	.01	.18	.01	.03	.51
IN.	.00	.02	.03	.03	.03	.03	.02	.01	.20	.01	.03	.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1996, BY WATER YEAR (WY)

MEAN	99.7	105	122	132	166	115	204	340	252	25.0	28.3	166
MAX	1538	932	943	691	1251	611	1158	1502	1792	91.6	332	1975
(WY)	1995	1966	1977	1968	1992	1992	1973	1972	1973	1973	1971	1974
MIN	.000	.035	.97	6.38	8.46	9.87	7.17	2.39	.68	.16	.014	.014
(WY)	1991	1991	1991	1990	1996	1991	1996	1996	1990	1990	1990	1990

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1962 - 1996	
ANNUAL TOTAL	25364.83		8983.67			
ANNUAL MEAN	69.5		24.5		146	
HIGHEST ANNUAL MEAN					508	1992
LOWEST ANNUAL MEAN					11.5	1990
HIGHEST DAILY MEAN	2340	Mar 13	2070	Sep 21	30500	Sep 14 1974
LOWEST DAILY MEAN	.47	Oct 22	.02	Aug 7	.00	Aug 5 1964
ANNUAL SEVEN-DAY MINIMUM	.54	Oct 17	.05	Aug 3	.00	Sep 2 1964
INSTANTANEOUS PEAK FLOW			2480	Sep 21	53500	Sep 13 1974
INSTANTANEOUS PEAK STAGE			19.50	Sep 21	36.05	Sep 13 1974
ANNUAL RUNOFF (AC-FT)	50310		17820		105500	
ANNUAL RUNOFF (CFSM)	.21		.074		.44	
ANNUAL RUNOFF (INCHES)	2.84		1.01		5.96	
10 PERCENT EXCEEDS	61		18		127	
50 PERCENT EXCEEDS	15		7.6		22	
90 PERCENT EXCEEDS	1.3		.49		2.2	

LAVACA RIVER BASIN
08164350 NAVIDAD RIVER NEAR SPEAKS, TX

LOCATION.--Lat 29°19'18", long 96°42'32", Lavaca County, Hydrologic Unit 12100102, at right downstream end of bridge on Farm Road 530, 100 ft downstream from Ragsdale Creek, and 4.6 mi north of Speaks.

DRAINAGE AREA.--443 mi², revised. (Area at site used prior to June 1, 1996, 437 mi².)

PERIOD OF RECORD.--Pesticide analyses: April to September 1996.
Surface-water--October 1981 to September 1989 (continuous-record station), 1995 water year (measurements only), October 1995 to May 1996 (measurements only), June to September 1996 (not published).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	DIAZINON, TOTAL (UG/L)	DISULFOTON UNFILT RECOVER (UG/L)
APR										
11...	0945	824	8.1	20.0	7.1	77	290	41	<0.010	--
JUN										
05...	0915	241	8.4	22.5	6.2	71	72	--	<0.010	<0.010
JUL										
24...	1145	686	6.8	28.0	--	--	250	--	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
APR										
11...	<0.010	<0.030	<0.010	<0.010	<0.030	<0.010	<0.010	<0.010	<0.010	<0.010
JUN										
05...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.040	<0.010	<0.010
JUL										
24...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

08164450 SANDY CREEK NEAR LOUISE, TX

LOCATION.--Lat 29°09'36", long 96°32'46", Jackson County, Hydrologic Unit 12100102, on left bank at downstream end of bridge on Farm Road 710, 0.9 mi upstream from Goldenrod Creek, and 9.1 mi northwest of Louise.

DRAINAGE AREA.--289 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 59.72 ft above sea level.

REMARKS.--Records fair except those for estimated daily discharges and for discharges below 10 ft³/s, which are poor. Much of the low flow during the irrigation season (April to September) is drainage from rice fields irrigated by water originally diverted from the Colorado River. No known diversions above station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 18	1500	2,020	12.43	Aug. 31	1400	1,930	12.22

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	55	4.9	50	3.3	e1.0	e.01	18	e.02	141	114	1510
2	59	49	4.3	23	1.7	e.60	e.50	6.3	e.01	64	82	1280
3	79	40	4.2	14	e1.0	e.30	1.9	5.1	e.01	25	36	660
4	153	38	4.2	5.9	e.80	e.15	e1.2	1.8	4.0	10	14	434
5	152	34	4.2	3.3	e.50	e.10	1.5	1.5	1.3	3.7	6.3	279
6	124	27	4.2	2.2	e.40	.06	8.4	e1.1	e.60	1.2	e1.2	121
7	110	22	4.2	1.7	e.30	e.04	13	e1.0	e.35	e.60	e.40	51
8	98	19	4.3	1.7	e1.0	e.03	2.9	e1.2	e.20	1.1	e.27	77
9	83	14	3.8	e.80	2.2	e.03	e1.2	1.8	e.15	.69	e.22	66
10	87	8.8	3.5	e.40	e1.0	e.03	e1.1	1.4	e.10	1.7	e.20	670
11	86	5.0	3.5	e.20	e.60	e.02	e1.0	e1.1	e.08	4.6	e.19	614
12	95	4.1	3.7	e.10	e.30	e.02	e.90	1.8	e.06	1.4	e.18	297
13	95	e3.9	3.8	e.04	e.20	e.02	e1.1	9.0	e.05	1.2	8.0	132
14	78	e3.8	4.0	e.02	e.13	e.02	1.4	1.3	e.04	4.7	e1.2	88
15	66	e3.7	4.2	e.00	e.08	e.01	5.7	1.2	e.03	15	e.60	77
16	50	e3.6	4.0	e.00	e.05	e.01	1.8	e.90	e.02	31	e.50	263
17	41	30	788	.00	e.04	e.01	1.9	e.50	e.01	55	1.5	265
18	59	113	1800	e.00	e.03	e.01	e1.2	e.33	e.01	55	1.2	165
19	55	177	1640	e.00	e.02	e.01	1.8	e.24	e.25	67	4.6	158
20	46	172	810	e.00	e.01	e.01	e1.2	e.18	1.6	81	12	218
21	34	124	260	e.00	e.01	e.00	e1.1	e.13	e1.2	86	12	781
22	40	66	189	e.00	e.01	e.00	6.1	e.10	10	77	45	738
23	35	40	175	e.00	e.01	e.00	11	e.08	33	71	160	419
24	27	28	90	e1.0	e.01	e.00	17	e.06	121	103	200	254
25	30	21	39	2.6	e.02	e.00	18	e.05	222	111	197	174
26	27	14	20	2.2	e.05	e.00	16	e.04	684	123	229	159
27	16	9.9	10	e1.0	e.10	e.00	7.3	e.04	1180	166	214	127
28	17	6.8	5.0	e.50	e1.0	e.00	7.7	e.04	819	216	205	119
29	18	8.7	2.2	e.25	9.8	e.00	8.2	e.03	446	186	168	119
30	30	6.3	9.6	e.15	---	e.00	20	e.03	267	135	1030	89
31	51	---	53	e1.0	---	e.00	---	e.02	---	109	1810	---
TOTAL	2004	1147.6	5955.8	112.06	24.67	2.48	162.11	56.37	3792.09	1947.89	4554.56	10404
MEAN	64.6	38.3	192	3.61	.85	.080	5.40	1.82	126	62.8	147	347
MAX	153	177	1800	50	9.8	1.0	20	18	1180	216	1810	1510
MIN	16	3.6	2.2	.00	.01	.00	.01	.02	.01	.60	.18	51
AC-FT	3970	2280	11810	222	49	4.9	322	112	7520	3860	9030	20640
CFSM	.22	.13	.66	.01	.00	.00	.02	.01	.44	.22	.51	1.20
IN.	.26	.15	.77	.01	.00	.00	.02	.01	.49	.25	.59	1.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1996, BY WATER YEAR (WY)

MEAN	221	143	135	279	276	115	183	308	359	135	35.0	243
MAX	2101	964	746	956	2331	429	1041	1150	1866	475	147	1364
(WY)	1995	1986	1992	1992	1992	1995	1992	1993	1993	1983	1996	1978
MIN	19.4	3.93	.008	1.36	.28	.080	3.14	1.82	.030	58.8	3.21	11.8
(WY)	1980	1992	1991	1982	1988	1996	1980	1996	1990	1986	1991	1988

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1978 - 1996	
ANNUAL TOTAL	60573.41		30163.63			
ANNUAL MEAN	166		82.4		202	
HIGHEST ANNUAL MEAN					606	1992
LOWEST ANNUAL MEAN					51.2	1990
HIGHEST DAILY MEAN	3590	Jan 14	1810	Aug 31	22500	Oct 19 1994
LOWEST DAILY MEAN	.00	Apr 15	.00	Jan 15	.00	Apr 5 1978
ANNUAL SEVEN-DAY MINIMUM	.00	May 16	.00	Jan 15	.00	Mar 10 1980
INSTANTANEOUS PEAK FLOW			2020	Dec 18	24900	Oct 19 1994
INSTANTANEOUS PEAK STAGE			12.43	Dec 18	a28.45	Oct 19 1994
ANNUAL RUNOFF (AC-FT)	120100		59830		146200	
ANNUAL RUNOFF (CFSM)	.57		.29		.70	
ANNUAL RUNOFF (INCHES)	7.80		3.88		9.49	
10 PERCENT EXCEEDS	360		180		416	
50 PERCENT EXCEEDS	41		4.0		19	
90 PERCENT EXCEEDS	2.1		.02		.06	

e Estimated
a From floodmark.

08164450 SANDY CREEK NEAR LOUISE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1977 to current year. Pesticide analyses: November 1977 to July 1981, April to July 1996. Sediment analyses: September 1978 to April 1979.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	DI-AZINON, TOTAL (UG/L)	DI-SYSTON TOTAL (UG/L)
APR											
11...	1210	1.2	485	7.6	25.0	5.9	71	180	7	<0.01	--
JUN											
05...	1425	1.3	714	7.2	34.0	5.0	71	170	--	<0.01	<0.01
JUL											
24...	1045	106	640	8.0	29.5	--	--	150	--	<0.01	<0.01

DATE	ETHION, TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
APR										
11...	<0.01	<0.03	<0.01	<0.01	<0.03	<0.01	<0.01	<0.01	<0.01	<0.01
JUN										
05...	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
JUL										
24...	<0.01	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

08164503 WEST MUSTANG CREEK NEAR GANADO, TX

LOCATION.--Lat 29°04'17", long 96°28'01", Jackson County, Hydrologic Unit 12100102, on right bank at downstream end of downstream bridge on U.S. Highway 59, 2.1 mi upstream from Middle Mustang Creek, and 3.6 mi east of Ganado.

DRAINAGE AREA.--178 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 40.12 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Much of low flow during the irrigation season (April to September) comes from drainage from rice fields irrigated by diversions originating from the Colorado River.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 19	Unknown	2,180	a14.57	June 26	1400	1,780	13.93

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	63	1.4	64	1.9	9.4	3.6	47	2.1	120	74	1120
2	17	59	1.2	40	1.4	5.0	4.5	33	2.7	67	61	786
3	27	422	1.1	22	1.5	2.3	4.7	13	3.2	35	37	386
4	38	e291	.96	11	1.7	1.4	8.1	12	6.8	23	28	232
5	54	74	.88	7.1	1.3	1.2	3.5	10	16	20	27	235
6	60	39	.74	5.1	1.2	1.0	18	7.6	47	17	19	134
7	56	23	.57	3.8	1.2	.86	42	16	35	19	15	77
8	53	19	.52	3.5	1.1	.53	47	11	20	23	15	172
9	37	13	.40	2.8	2.1	.73	17	4.2	11	19	11	252
10	43	10	.34	2.7	1.9	.62	7.4	6.1	5.4	26	15	146
11	37	6.0	.31	2.5	1.2	.49	6.8	3.2	3.3	34	14	118
12	37	3.8	.59	2.2	.86	.42	5.9	141	1.4	46	8.9	80
13	30	2.6	.76	2.1	.72	.37	5.6	136	1.1	41	8.4	62
14	33	1.9	.65	1.7	1.8	.36	10	67	1.6	32	18	48
15	34	1.3	.61	1.6	1.7	.34	8.3	37	1.4	27	18	76
16	29	.99	.61	1.4	1.3	.32	8.6	21	2.7	49	14	267
17	22	19	220	1.4	1.0	.53	12	7.3	1.4	60	11	160
18	12	259	1680	1.2	.83	.44	17	3.2	2.8	76	8.0	100
19	9.9	177	e1880	1.6	.68	.28	23	2.5	2.2	65	10	100
20	7.4	181	e968	1.4	.54	.24	24	1.6	2.2	70	31	792
21	5.9	119	e571	1.2	.47	.57	21	.88	3.4	68	30	1300
22	5.7	70	e612	1.1	.41	.93	15	.62	20	61	48	742
23	7.1	38	e383	1.4	2.3	.54	31	.53	77	44	399	292
24	4.5	18	e135	1.4	1.6	1.9	29	.62	339	33	544	239
25	3.3	9.4	84	1.7	1.2	4.4	29	.59	406	30	325	154
26	3.3	5.5	54	4.6	.98	2.7	24	.74	1460	42	226	98
27	3.7	4.0	35	5.5	.58	3.7	11	2.0	1330	68	242	72
28	7.8	3.0	24	3.2	.39	6.2	4.6	1.3	652	83	146	70
29	6.7	2.2	17	2.6	1.1	5.4	5.6	1.4	331	97	219	79
30	22	1.8	15	4.0	---	6.1	23	.70	205	97	934	67
31	53	---	45	2.9	---	5.9	---	1.9	---	107	1380	---
TOTAL	776.3	1936.49	6734.64	208.7	34.96	65.17	470.2	590.98	4992.7	1599	4936.3	8456
MEAN	25.0	64.5	217	6.73	1.21	2.10	15.7	19.1	166	51.6	159	282
MAX	60	422	1880	64	2.3	9.4	47	141	1460	120	1380	1300
MIN	3.3	.99	.31	1.1	.39	.24	3.5	.53	1.1	17	8.0	48
AC-FT	1540	3840	13360	414	69	129	933	1170	9900	3170	9790	16770
CFSM	.14	.36	1.22	.04	.01	.01	.09	.11	.93	.29	.89	1.58
IN.	.16	.40	1.41	.04	.01	.01	.10	.12	1.04	.33	1.03	1.77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1996, BY WATER YEAR (WY)

MEAN	211	118	117	193	168	73.7	133	218	208	114	48.9	189
MAX	1746	399	587	881	1243	356	552	702	957	412	159	1063
(WY)	1995	1986	1992	1980	1992	1985	1991	1993	1993	1983	1996	1979
MIN	14.2	7.29	.17	.72	.87	.81	12.3	11.2	5.56	38.1	24.2	5.33
(WY)	1988	1981	1991	1982	1986	1986	1983	1978	1990	1986	1982	1988

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1978 - 1996	
ANNUAL TOTAL	38553.53		30801.44			
ANNUAL MEAN	106		84.2		149	
HIGHEST ANNUAL MEAN					309	1992
LOWEST ANNUAL MEAN					45.2	1990
HIGHEST DAILY MEAN	2000	Jan 14	1880	Dec 19	18700	Oct 19 1994
LOWEST DAILY MEAN	.31	Dec 11	.24	Mar 20	.00	Dec 19 1990
ANNUAL SEVEN-DAY MINIMUM	.50	Dec 6	.36	Mar 14	.01	Dec 19 1990
INSTANTANEOUS PEAK FLOW			2180	Dec 19	20000	Oct 19 1994
INSTANTANEOUS PEAK STAGE			a14.57	Dec 19	a28.39	Oct 19 1994
ANNUAL RUNOFF (AC-FT)	76470		61090		108100	
ANNUAL RUNOFF (CFSM)	.59		.47		.84	
ANNUAL RUNOFF (INCHES)	8.06		6.44		11.39	
10 PERCENT EXCEEDS	231		209		286	
50 PERCENT EXCEEDS	31		11		22	
90 PERCENT EXCEEDS	2.7		.74		1.4	

e Estimated
a From floodmark.

08164503 WEST MUSTANG CREEK NEAR GANADO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1977 to current year. Pesticide analyses: November 1977 to July 1981, April to July 1996. Sediment analyses: September 1978 to April 1979.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	DI-AZINON, TOTAL (UG/L)	DISUL-FOTON UNFILT RECOVER (UG/L)
APR											
11...	1130	6.6	820	7.9	20.0	7.1	77	170	48	<0.010	--
JUN											
05...	1357	13	1020	7.9	25.0	6.9	83	200	--	<0.010	<0.010
JUL											
24...	1000	31	692	7.7	29.0	--	--	160	--	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
APR										
11...	<0.010	<0.030	<0.010	<0.010	<0.030	<0.010	<0.010	<0.010	<0.010	<0.010
JUN										
05...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
JUL										
24...	<0.010	0.010	0.030	<0.010	<0.010	<0.010	<0.010	0.190	<0.010	<0.010

LAVACA RIVER BASIN
08164504 EAST MUSTANG CREEK AT FM 647 NEAR LOUISE, TX

LOCATION.--Lat 29°04'14", long 96°25'01", Wharton County, Hydrologic Unit 12100401, on right bank. 50 ft downstream from right end of bridge on Farm Road 647, 2.7 mi south of Louise.

DRAINAGE AREA.--90.8 mi².

PERIOD OF RECORD.--Pesticide analyses: April to September 1996.
Surface-water--June to September 1996 (not published).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	DI-AZINON, TOTAL (UG/L)	DISUL-FOTON UNFILT RECOVER (UG/L)
APR										
11...	1127	820	7.9	20.0	7.1	77	170	73	<0.010	--
JUN										
05...	1115	542	7.7	27.0	5.3	66	130	--	<0.010	<0.010
JUL										
24...	0900	948	7.9	28.0	--	--	220	--	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
APR										
11...	<0.010	<0.030	<0.010	<0.010	<0.030	<0.010	<0.010	0.070	<0.010	<0.010
JUN										
05...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.950	<0.010	<0.010
JUL										
24...	<0.010	0.020	0.220	<0.010	<0.010	<0.020	<0.010	<0.020	<0.020	<0.020

08164525 LAKE TEXANA NEAR EDNA, TX

LOCATION.--Lat 28°53'30", long 96°34'00", Jackson County, Hydrologic Unit 12100102, at upstream side of dam at old river channel on the Navidad River, 4.9 mi upstream from confluence with Lavaca River, 4.0 mi north of Lolita, and 7.2 mi southeast of Edna.

DRAINAGE AREA.--1,370 mi².

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1988 to current year.
Pesticide analyses of bottom sediments: May 1994 to current year.

285331096343501 - LAKE TEXANA SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	RESER-VOIR STORAGE (AC-FT)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)
FEB										
07...	0825	156000	1.00	278	7.8	9.0	0.20	92	53	10.4
07...	0827	--	10.0	278	7.8	9.0	--	--	--	10.4
07...	0829	--	20.0	277	7.8	9.0	--	--	--	10.4
07...	0831	--	30.0	278	7.8	8.5	--	--	--	10.4
07...	0833	--	40.0	277	7.8	8.5	--	--	--	10.4
07...	0835	--	50.0	278	7.8	8.5	--	--	--	10.5
07...	0837	--	60.0	278	7.8	8.5	--	--	--	10.5
07...	0839	--	70.0	277	7.7	8.5	--	96	60	10.4
MAY										
09...	0905	143000	1.00	273	8.0	24.0	0.30	160	35	7.9
09...	0907	--	10.0	274	8.0	23.5	--	--	--	7.8
09...	0909	--	20.0	273	8.0	23.5	--	--	--	7.8
09...	0911	--	30.0	273	8.0	23.5	--	--	--	7.8
09...	0912	--	31.0	--	--	--	--	--	--	--
09...	0913	--	40.0	273	7.9	23.0	--	--	--	7.5
09...	0915	--	50.0	272	7.6	21.0	--	--	--	6.2
09...	0917	--	63.0	280	7.3	17.5	--	300	98	2.2
AUG										
08...	0854	157000	1.00	319	8.0	29.5	0.58	20	5.6	6.1
08...	0856	--	10.0	319	7.9	29.5	--	--	--	5.8
08...	0858	--	20.0	319	7.9	29.5	--	--	--	5.8
08...	0900	--	30.0	321	7.4	29.5	--	--	--	3.7
08...	0902	--	40.0	320	7.2	29.0	--	--	--	1.1
08...	0904	--	50.0	316	7.0	26.5	--	--	--	0
08...	0906	--	64.0	320	7.0	22.0	--	50	--	0

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)
FEB										
07...	89	84	12	27	4.0	18	0.9	4.2	72	8.6
07...	89	--	--	--	--	--	--	--	--	--
07...	89	--	--	--	--	--	--	--	--	--
07...	88	--	--	--	--	--	--	--	--	--
07...	88	--	--	--	--	--	--	--	--	--
07...	89	--	--	--	--	--	--	--	--	--
07...	89	--	--	--	--	--	--	--	--	--
07...	88	84	12	27	4.0	18	0.9	4.2	72	8.4
MAY										
09...	94	84	9	27	4.0	19	0.9	4.4	75	9.6
09...	92	--	--	--	--	--	--	--	--	--
09...	92	--	--	--	--	--	--	--	--	--
09...	92	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	87	--	--	--	--	--	--	--	--	--
09...	70	--	--	--	--	--	--	--	--	--
09...	23	90	11	29	4.1	19	0.9	4.2	79	9.5
AUG										
08...	79	91	5	29	4.4	21	1	5.0	85	11
08...	75	--	--	--	--	--	--	--	--	--
08...	75	--	--	--	--	--	--	--	--	--
08...	48	--	--	--	--	--	--	--	--	--
08...	14	--	--	--	--	--	--	--	--	--
08...	0	--	--	--	--	--	--	--	--	--
08...	0	94	0	30	4.5	19	0.9	4.3	98	5.9

08164525 LAKE TEXANA NEAR EDNA, TX--Continued

285331096343501 - LAKE TEXANA SITE AC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	RESIDUE VOLATILE, SUSPENDED (MG/L)	RESIDUE FIXED NON FILTERABLE (MG/L)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)
FEB										
07...	28	0.20	12	145	18	10	8	--	1.60	<0.100
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	29	0.20	12	146	32	12	20	--	--	--
MAY										
09...	29	0.20	12	151	4	6	0	<1	1.50	<0.100
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	<1	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	28	0.20	14	155	46	14	32	--	--	--
AUG										
08...	34	0.20	5.0	161	13	8	5	--	3.00	<0.100
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	29	0.20	18	173	--	--	--	--	--	--

DATE	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)
FEB										
07...	2	85	<0.50	<1.0	<5.0	<3.0	<10	<3.0	<10	<4
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	2	83	<0.50	<1.0	<5.0	<3.0	<10	4.0	<10	4
MAY										
09...	2	95	<0.50	<1.0	<5.0	<3.0	<10	<3.0	<10	<4
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	<3.0	--	--
09...	1	100	<0.50	1.0	<5.0	<3.0	<10	<3.0	<10	<4
AUG										
08...	4	100	<0.50	<1.0	<5.0	<3.0	<10	<3.0	<10	<4
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	<3.0	--	--
08...	--	--	--	--	--	--	--	14	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	15	120	<0.50	<1.0	<5.0	<3.0	<10	160	10	<4

08164525 LAKE TEXANA NEAR EDNA, TX--Continued

285331096343501 - LAKE TEXANA SITE AC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
FEB									
07...	<1.0	<0.1	<10	<10	<1	<1.0	100	11	<3.0
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	2.0	<0.1	<10	<10	<1	<1.0	100	12	<3.0
MAY									
09...	<1.0	<0.1	<10	<10	<1	1.0	110	<6	5.0
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	4.0	--	--	--	--	--	--	--	--
09...	10	<0.1	<10	<10	<1	<1.0	120	<6	<3.0
AUG									
08...	5.0	<0.1	<10	<10	<1	<1.0	120	<6	<3.0
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	90	--	--	--	--	--	--	--	--
08...	310	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	2500	<0.1	<10	<10	<1	<1.0	130	<6	<3.0

285326096342101 - LAKE TEXANA SITE AL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
07...	0900	1.00	277	7.8	9.0	10.4	89
07...	0902	10.0	277	7.8	9.0	10.4	89
07...	0904	20.0	277	7.8	9.0	10.3	88
07...	0906	30.0	277	7.8	9.0	10.2	87
MAY							
09...	0950	1.00	273	8.0	23.5	7.8	92
09...	0952	10.0	273	8.0	23.5	7.8	92
09...	0954	20.0	274	8.0	23.5	7.8	92
09...	0956	27.0	274	8.0	23.5	7.7	91
AUG							
08...	0932	1.00	320	7.9	29.5	6.1	79
08...	0934	10.0	321	7.8	29.5	5.8	75
08...	0936	20.0	320	7.9	29.5	5.9	77
08...	0938	34.0	320	7.9	29.0	6.1	78

285534096322301 - LAKE TEXANA SITE BC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
07...	0925	1.00	275	7.8	9.5	10.2	88
07...	0927	10.0	273	7.8	9.0	10.2	87
07...	0929	20.0	260	7.7	9.0	10.2	87
07...	0931	30.0	257	7.7	8.5	10.1	85
07...	0933	42.0	255	7.7	8.5	10.0	85
MAY							
09...	1016	1.00	277	8.0	24.0	7.8	93
09...	1018	10.0	278	8.0	24.0	7.8	93
09...	1020	20.0	277	8.0	24.0	7.8	93
09...	1022	34.0	276	8.0	24.0	7.9	94
AUG							
08...	0953	1.00	322	7.9	30.0	6.1	80
08...	0955	10.0	322	7.8	30.0	5.9	77
08...	0957	20.0	322	7.8	30.0	5.9	77
08...	0959	30.0	323	7.6	29.5	4.9	64
08...	1001	40.0	323	7.5	29.5	4.0	52

08164525 LAKE TEXANA NEAR EDNA, TX--Continued

285816096320201 - LAKE TEXANA SITE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)
FEB											
07...	0945	1.00	250	7.8	9.0	0.10	10.4	89	77	13	24
07...	0947	10.0	243	7.7	8.5	--	10.4	88	--	--	--
07...	0949	18.0	--	--	--	--	--	--	--	--	--
07...	0951	20.0	236	7.6	8.0	--	10.4	87	--	--	--
07...	0953	30.0	228	7.5	7.5	--	10.4	86	--	--	--
07...	0955	36.0	228	7.5	7.5	--	10.3	85	68	10	21
MAY											
09...	1036	1.00	282	8.0	24.5	0.24	7.6	91	93	14	30
09...	1038	10.0	282	8.0	24.5	--	7.6	91	--	--	--
09...	1040	17.0	--	--	--	--	--	--	--	--	--
09...	1042	20.0	282	8.0	24.5	--	7.6	91	--	--	--
09...	1044	30.0	282	8.0	24.5	--	7.6	91	--	--	--
09...	1046	35.0	282	8.0	24.5	--	7.6	91	93	14	30
AUG											
08...	1018	1.00	328	7.7	30.5	0.21	5.9	78	92	4	29
08...	1020	10.0	327	7.6	30.0	--	5.4	71	--	--	--
08...	1022	--	--	--	--	--	--	--	--	--	--
08...	1024	20.0	335	7.6	30.0	--	5.1	67	--	--	--
08...	1026	30.0	348	7.5	30.0	--	4.6	60	--	--	--
08...	1028	36.0	348	7.4	30.0	--	3.9	51	100	8	31

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)
FEB											
07...	4.1	17	0.8	4.5	64	8.3	24	0.20	12	132	2.50
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	3.8	15	0.8	4.6	58	8.3	22	0.20	12	122	--
MAY											
09...	4.4	20	0.9	4.4	79	10	29	0.20	12	157	1.20
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	4.4	20	0.9	4.8	79	10	29	0.20	12	158	--
AUG											
08...	4.7	23	1	4.7	88	11	34	0.20	8.4	168	1.40
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	5.5	26	1	4.7	92	11	37	0.20	11	182	--

DATE	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	DIAZINON, TOTAL (UG/L)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DISULFOTON UNFILT RECOVER (UG/L)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METHYL PARATHION, TOTAL (UG/L)
FEB											
07...	<0.100	10	<10	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	<0.010	--	<0.010	<0.010	--	<0.010	--	<0.010
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	20	<10	<0.010	--	<0.010	<0.010	--	<0.010	--	<0.010
MAY											
09...	<0.100	<3.0	<1.0	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	<0.010	--	<0.010	<0.010	--	<0.010	--	<0.010
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	<3.0	<1.0	<0.010	<0.200	<0.010	<0.010	<0.200	<0.010	<0.200	<0.010
AUG											
08...	<0.100	<3.0	2.0	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	<0.010	--	--	<0.010	--	<0.010	--	<0.010
08...	--	<3.0	8.0	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	<3.0	32	<0.010	--	--	<0.010	--	<0.010	--	<0.010

08164525 LAKE TEXANA NEAR EDNA, TX--Continued

285816096320201 - LAKE TEXANA SITE CC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG)	PARATHION, TOTAL (UG/L)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
FEB										
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	<0.010	--	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	<0.010	--	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010
MAY										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	<0.010	--	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	<0.200	<0.010	<0.200	<0.010	<0.010	<0.010	<0.200	0.080	<0.010	<0.010
AUG										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	<0.010	--	<0.010	--	<0.010	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	<0.010	--	<0.010	--	<0.010	--	--	--	--

290042096331401 - LAKE TEXANA SITE DC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)
FEB											
07...	1050	1.00	227	7.5	9.0	--	10.3	88	70	11	22
07...	1052	9.00	--	--	--	--	--	--	--	--	--
07...	1054	10.0	228	7.5	8.5	--	10.3	87	--	--	--
07...	1056	18.0	245	7.4	8.0	--	9.9	83	73	4	23
MAY											
09...	1152	1.00	359	7.9	25.5	0.15	7.1	87	110	10	36
09...	1154	8.00	--	--	--	--	--	--	--	--	--
09...	1156	10.0	358	7.9	25.5	--	7.0	86	--	--	--
09...	1158	17.0	357	7.9	25.5	--	7.0	86	110	9	36
AUG											
08...	1108	1.00	427	7.5	30.0	0.18	4.8	63	120	12	35
08...	1110	10.0	429	7.5	30.0	--	4.7	62	--	--	--
08...	1112	18.0	436	7.4	30.0	--	4.0	52	120	8	34

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)
FEB											
07...	3.7	15	0.8	4.8	59	8.3	21	0.20	12	122	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	3.8	15	0.8	5.0	69	8.4	21	0.20	11	129	--
MAY											
09...	5.3	27	1	5.3	100	13	39	0.20	11	198	<1
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	5.2	26	1	5.5	100	12	38	0.20	11	195	--
AUG											
08...	7.7	33	1	4.6	110	13	51	0.30	14	223	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	7.8	35	1	4.5	110	14	51	0.30	15	227	--

08164525 LAKE TEXANA NEAR EDNA, TX--Continued

290042096331401 - LAKE TEXANA SITE DC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	DI-AZINON, TOTAL (UG/L)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DISUL-FOTON UNFILT RECOVER (UG/L)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
FEB											
07...	2.90	<0.100	30	<10	--	--	--	--	--	--	--
07...	--	--	--	--	<0.010	--	<0.010	<0.010	--	<0.010	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	20	<10	<0.010	--	<0.010	<0.010	--	<0.010	--
MAY											
09...	5.10	<0.100	<3.0	6.0	--	--	--	--	--	--	--
09...	--	--	--	--	<0.010	--	<0.010	<0.010	--	<0.010	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	<3.0	31	<0.010	<0.200	<0.010	<0.010	<0.200	<0.010	<0.200
AUG											
08...	1.80	<0.100	<3.0	6.0	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	<3.0	23	<0.010	--	--	<0.010	--	0.020	--

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG)	PARA-THION, TOTAL (UG/L)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
FEB											
07...	--	--	--	--	--	--	--	--	--	--	--
07...	<0.010	--	<0.010	--	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010
07...	--	--	--	--	--	--	--	--	--	--	--
07...	<0.010	--	<0.010	--	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010
MAY											
09...	--	--	--	--	--	--	--	--	--	--	--
09...	<0.010	--	<0.010	--	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010
09...	--	--	--	--	--	--	--	--	--	--	--
09...	<0.010	<0.200	<0.010	<0.200	<0.010	<0.010	<0.010	<0.200	<0.010	<0.010	<0.010
AUG											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<0.010	--	<0.010	--	<0.010	--	<0.010	--	--	--	--

285940096312101 - LAKE TEXANA SITE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)
FEB									
07...	1015	1.00	217	7.5	9.5	--	9.8	85	--
07...	1017	10.0	195	7.4	8.5	--	10.0	85	--
07...	1019	14.0	--	--	--	--	--	--	--
07...	1021	20.0	189	7.4	8.5	--	9.9	84	--
07...	1023	27.0	189	7.4	8.0	--	9.5	79	--
MAY									
09...	1118	1.00	320	7.9	25.0	0.20	7.2	87	--
09...	1120	10.0	320	7.9	25.0	--	7.2	87	--
09...	1122	12.0	320	7.9	25.0	--	7.2	87	--
09...	1124	20.0	320	7.9	25.0	--	7.2	87	--
09...	1126	25.0	319	7.9	25.0	--	7.2	87	--
AUG									
08...	1044	1.00	355	7.6	30.5	0.27	5.4	71	--
08...	1046	10.0	386	7.4	30.0	--	4.1	54	--
08...	1048	13.0	386	7.4	30.0	--	4.2	55	--
08...	1050	20.0	387	7.4	30.0	--	4.3	56	--
08...	1052	26.0	386	7.4	30.0	--	3.7	48	98

08164525 LAKE TEXANA NEAR EDNA, TX--Continued

285940096312101 - LAKE TEXANA SITE EC--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	DI-AZINON, TOTAL (UG/L)	DI-AZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DISULFOTON UNFILT RECOVER (UG/L)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METHYL PARATHION, TOTAL (UG/L)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG)
FEB									
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	<0.010	--	<0.010	<0.010	--	<0.010	--	<0.010	--
07...	--	--	--	--	--	--	--	--	--
07...	<0.010	--	<0.010	<0.010	--	<0.010	--	<0.010	--
MAY									
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	<0.010	--	<0.010	<0.010	--	<0.010	--	<0.010	--
09...	--	--	--	--	--	--	--	--	--
09...	<0.010	<0.200	<0.010	<0.010	<0.200	<0.010	<0.200	<0.010	<0.200
AUG									
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	<0.010	--	--	<0.010	--	<0.010	--	<0.010	--
08...	--	--	--	--	--	--	--	--	--
08...	<0.010	--	--	<0.010	--	<0.010	--	<0.010	--

DATE	PARATHION, TOTAL (UG/L)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
FEB									
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	<0.010	--	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010
07...	--	--	--	--	--	--	--	--	--
07...	<0.010	--	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010
MAY									
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	<0.010	--	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010
09...	--	--	--	--	--	--	--	--	--
09...	<0.010	<0.200	<0.010	<0.010	<0.010	<0.200	<0.010	<0.010	<0.010
AUG									
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	<0.010	--	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010
08...	--	--	--	--	--	--	--	--	--
08...	<0.010	--	<0.010	<0.010	<0.010	--	<0.010	<0.010	<0.010

08164600 GARCITAS CREEK NEAR INEZ, TX

LOCATION.--Lat 28°53'28", long 96°49'08", Victoria County, Hydrologic Unit 12100402, at right downstream end of bridge on U.S. Highway 59 access road, 0.3 mi upstream from Southern Pacific Railroad bridge, 2.0 mi southwest of Inez, and 3.6 mi upstream from Casa Blanca Creek.

DRAINAGE AREA.--91.7 mi².

PERIOD OF RECORD.--June 1970 to current year.
Water-quality records.--Chemical and biochemical analyses: April 1965 to August 1988. Pesticide analyses: July 1970 to July 1981.

REVISED RECORDS.--WDR TX-94-3: 1992-93.

GAGE.--Water-stage recorder. Datum of gage is 29.16 ft above sea level.

REMARKS.--Records good. No known diversion above station. An undetermined amount of return water from irrigation enters the stream above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage during period 1903-70, 24.5 ft Oct. 26, 1960. In 1929, a flood nearly as high as the 1960 flood occurred, and a flood in September 1967 reached a stage of 23.4 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.56	2.3	.56	17	.88	.64	.37	.13	.00	19	.00	75
2	.91	6.9	.52	9.8	.89	.63	.34	.13	.00	10	.00	38
3	.87	32	.56	5.6	.87	.63	.34	.14	.00	5.8	.00	22
4	.52	16	.54	3.7	.79	.63	.34	.13	.00	3.6	.00	12
5	.45	7.7	.52	2.9	.77	.63	.42	.12	.00	2.3	.00	6.8
6	.45	5.9	.51	2.3	.81	.63	.40	.11	.00	1.5	.00	5.3
7	.43	5.0	.47	1.8	.90	.53	.32	.12	.00	1.1	.00	3.2
8	.45	3.3	.45	1.6	.99	.46	.36	.10	.00	.89	.00	249
9	.41	1.9	.45	1.3	1.0	.45	.38	.09	.00	.66	.00	502
10	.37	1.4	.45	1.3	1.0	.45	.34	.07	.00	.49	.00	144
11	.33	.98	.45	1.3	.95	.47	.31	.12	.00	.39	.00	76
12	.29	.75	.45	1.2	.71	.45	.29	.09	.00	.38	.00	42
13	.31	.60	.45	1.2	.70	.46	.29	.03	.00	.33	.01	27
14	.31	.55	.48	1.2	.70	.53	.27	.02	.00	.28	.00	18
15	.28	.51	.51	1.2	.70	.57	.25	.01	.00	.23	.00	15
16	.24	.51	.52	1.2	.70	.57	.19	.00	.00	.19	.00	16
17	.24	32	79	1.2	.70	.57	.17	.00	.00	.14	.00	16
18	.23	36	40	1.1	.70	.55	.17	.00	.00	.11	.00	9.0
19	.22	25	25	.92	.70	.50	.16	.00	.00	.08	.00	8.5
20	.23	14	17	.92	.77	.42	.15	.00	e.00	.04	.00	78
21	.27	8.5	14	.92	.74	.37	.15	.00	e.00	.01	.00	324
22	.27	5.2	66	1.1	.70	.37	.16	.00	e.00	.00	.00	466
23	.27	3.3	69	1.1	.70	.37	.18	.00	e.00	.00	.03	111
24	.27	2.2	39	.97	.70	.37	.15	.00	e.00	.00	.27	59
25	.27	1.5	25	.97	.68	.37	.14	.00	e.00	.05	.06	59
26	.27	1.2	16	.96	.63	.37	.13	.00	368	.00	41	67
27	.28	1.0	10	.83	.63	.37	.13	.00	543	.00	63	99
28	.29	.79	6.9	.84	.54	.38	.13	.00	100	.00	68	38
29	.33	.60	4.8	.84	.53	.40	.23	.00	54	.00	59	22
30	1.9	.61	8.9	.91	---	.40	.13	.00	32	.00	51	14
31	1.2	---	23	.90	---	.39	---	.00	---	.00	190	---
TOTAL	13.72	218.20	451.49	69.08	22.08	14.93	7.39	1.41	1097.00	47.57	472.37	2621.8
MEAN	.44	7.27	14.6	2.23	.76	.48	.25	.045	36.6	1.53	15.2	87.4
MAX	1.9	36	79	17	1.0	.64	.42	.14	543	19	190	502
MIN	.22	.51	.45	.83	.53	.37	.13	.00	.00	.00	.00	3.2
AC-FT	27	433	896	137	44	30	15	2.8	2180	94	937	5200
CFSM	.00	.08	.16	.02	.01	.01	.00	.00	.40	.02	.17	.95
IN.	.01	.09	.18	.03	.01	.01	.00	.00	.45	.02	.19	1.06

08164600 GARCITAS CREEK NEAR INEZ, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1996, BY WATER YEAR (WY)

MEAN	56.8	28.5	40.4	42.3	55.9	26.0	70.9	116	126	23.0	5.05	66.7
MAX	695	291	263	220	558	203	658	503	745	218	39.1	789
(WY)	1995	1983	1977	1992	1992	1985	1991	1979	1981	1983	1972	1978
MIN	.000	.000	.006	.022	.14	.48	.25	.045	.000	.51	.056	.000
(WY)	1990	1990	1990	1990	1990	1996	1996	1996	1990	1989	1988	1988

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1970 - 1996	
ANNUAL TOTAL	5190.26		5037.04			
ANNUAL MEAN	14.2		13.8		54.8	
HIGHEST ANNUAL MEAN					144	1992
LOWEST ANNUAL MEAN					2.65	1989
HIGHEST DAILY MEAN	765	Jan 14	543	Jun 27	13100	Oct 19 1994
LOWEST DAILY MEAN	.17	Sep 9	.00	May 16	.00	May 22 1971
ANNUAL SEVEN-DAY MINIMUM	.24	Oct 16	.00	May 16	.00	May 26 1971
INSTANTANEOUS PEAK FLOW			1090	Jun 26	19700	Jun 12 1981
INSTANTANEOUS PEAK STAGE			13.83	Jun 26	a33.43	Oct 19 1994
ANNUAL RUNOFF (AC-FT)	10290		9990		39680	
ANNUAL RUNOFF (CFSM)	.16		.15		.60	
ANNUAL RUNOFF (INCHES)	2.11		2.04		8.12	
10 PERCENT EXCEEDS	26		26		52	
50 PERCENT EXCEEDS	2.6		.49		3.2	
90 PERCENT EXCEEDS	.40		.00		.29	

e Estimated
a From floodmark.

08164800 PLACEDO CREEK NEAR PLACEDO, TX

LOCATION.--Lat 28°43'30", long 96°46'07", Victoria County, Hydrologic Unit 12100401, on right bank at downstream end of bridge on Farm Road 616, 0.1 mi downstream from confluence of Lone Tree Creek and Arroyo Palo Alto, 1.2 mi upstream from Ninemile Creek, and 4.4 mi northeast of Placedo.

DRAINAGE AREA.--68.3 mi²

PERIOD OF RECORD.--June 1970 to current year.
Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1968 to September 1979.

GAGE.--Water-stage recorder. Datum of gage is 5.58 ft above sea level.

REMARKS.--Records fair. No known diversion above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1930, 31.9 ft in September 1967 and 30.4 ft in 1960 (probably October), from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 17	1600	2,370	21.30	June 26	2200	2,140	20.82

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	.66	e.72	8.9	.83	.67	.54	.26	.11	1.4	.19	85
2	.38	.55	e.75	4.5	.83	.67	.50	.25	.10	.84	.17	35
3	4.5	2.6	e.72	2.8	.83	.67	.54	.25	.10	.68	.17	14
4	1.9	2.3	e.59	2.0	.79	.68	.59	.23	.09	.58	.16	8.2
5	.64	2.8	e.56	1.6	.80	.68	.76	.22	.08	.55	.15	2.5
6	.37	1.7	e.62	1.3	.85	.70	1.1	.22	.08	.51	.16	2.9
7	e.42	1.1	e.59	1.2	.89	.67	.68	.21	.07	.45	.15	3.6
8	e.37	.73	.79	1.1	.88	.64	.54	.21	.06	.43	.17	160
9	e.92	.63	.93	1.1	.88	.60	.47	.20	.07	.41	.23	309
10	e1.0	.62	.62	1.1	.87	.63	.43	.19	.07	.40	.18	373
11	e.50	.49	.60	1.1	.83	.66	.45	.18	.06	.38	.15	58
12	e.46	.44	.64	1.0	.73	.69	.44	.17	.06	.35	.13	9.7
13	e.55	.48	.56	.95	.72	.66	.44	.18	.05	.31	.13	3.4
14	e.42	.50	.58	.95	.75	.65	.44	.19	.05	.29	.18	3.0
15	e.26	.46	.53	1.1	.75	.63	.40	.17	.04	.27	.27	236
16	e.26	.46	.54	.96	.70	.62	.35	.16	.04	.26	.23	81
17	e.26	259	1150	1.1	.68	.61	.34	.15	.03	.28	.18	117
18	e.29	211	804	.95	.75	.62	.37	.14	.03	.27	.17	25
19	e.37	110	126	.90	.78	.66	.36	.14	.03	.27	.20	55
20	e.12	141	31	.95	.73	.60	.35	.13	.03	.25	.18	35
21	.10	26	13	1.0	.71	.53	.35	.13	.05	.23	.20	42
22	.12	7.8	257	.99	.69	.55	.35	.13	.07	.22	.33	37
23	.11	e3.2	115	.98	.68	.55	.35	.12	.29	.24	.46	10
24	.11	e1.6	28	.98	.66	.54	.31	.11	26	.22	1.7	4.5
25	e.08	e1.0	10	.84	.65	.59	.27	.11	263	.25	7.0	6.0
26	e.14	e.95	5.8	.91	.67	.53	.28	.12	823	.70	62	6.6
27	e.26	e.88	3.8	.90	.68	.59	.29	.12	967	3.8	30	1.6
28	e.29	e.68	2.5	.83	.64	.65	.27	.12	65	.55	4.3	.98
29	.32	e.59	1.9	.90	.63	.60	.25	.13	12	.34	3.1	.89
30	2.3	e.68	1.6	.94	---	.64	.26	.13	3.7	.33	7.8	.80
31	1.1	---	9.9	.83	---	.65	---	.11	---	.26	336	---
TOTAL	19.26	780.90	2569.84	45.66	21.88	19.43	13.07	5.18	2161.36	16.32	456.44	1726.67
MEAN	.62	26.0	82.9	1.47	.75	.63	.44	.17	72.0	.53	14.7	57.6
MAX	4.5	259	1150	8.9	.89	.70	1.1	.26	967	3.8	336	373
MIN	.08	.44	.53	.83	.63	.53	.25	.11	.03	.22	.13	.80
AC-FT	38	1550	5100	91	43	39	26	10	4290	32	905	3420

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1996, BY WATER YEAR (WY)

MEAN	67.6	57.5	48.1	45.0	59.9	31.8	60.4	98.8	98.6	65.8	13.4	116
MAX	239	465	389	262	455	323	541	354	510	559	107	913
(WY)	1982	1982	1992	1991	1992	1985	1991	1972	1973	1990	1972	1978
MIN	.004	.021	.015	.052	.002	.086	.019	.17	.000	.031	.012	.013
(WY)	1990	1989	1990	1990	1994	1989	1989	1996	1989	1989	1988	1988

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1970 - 1996	
ANNUAL TOTAL	10002.49		7836.01			
ANNUAL MEAN	27.4		21.4		63.4	
HIGHEST ANNUAL MEAN					154	1992
LOWEST ANNUAL MEAN					1.20	1989
HIGHEST DAILY MEAN	1150	Dec 17	1150	Dec 17	11400	Nov 1 1981
LOWEST DAILY MEAN	.08	Oct 25	.03	Jun 17	.00	Aug 12 1981
ANNUAL SEVEN-DAY MINIMUM	.11	Oct 20	.04	Jun 14	.00	Jul 27 1982
INSTANTANEOUS PEAK FLOW			2370	Dec 17	18300	Oct 31 1981
INSTANTANEOUS PEAK STAGE			21.30	Dec 17	30.80	Oct 31 1981
ANNUAL RUNOFF (AC-FT)	19840		15540		45920	
10 PERCENT EXCEEDS	24		12		48	
50 PERCENT EXCEEDS	.90		.62		1.7	
90 PERCENT EXCEEDS	.26		.13		.12	

e Estimated

08165300 NORTH FORK GUADALUPE RIVER NEAR HUNT, TX

LOCATION.--Lat 30°03'50", long 99°23'12", Kerr County, Hydrologic Unit 12100201, on right bank, 1,000 ft upstream from Ranch Road 1340, 1.9 mi downstream from Bear Creek, 3.1 mi west of Hunt, and 3.5 mi upstream from Honey Creek.

DRAINAGE AREA.--169.0 mi².

PERIOD OF RECORD.--August 1967 to current year. Low-flow records not equivalent prior to June 7, 1989, because of undetermined channel flow loss between sites.

REVISED RECORDS.--WRD TX-74-1: 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 1,800.10 ft above sea level. Prior to June 7, 1989, at site 0.58 mi upstream at same datum.

REMARKS.--Records good except those for daily discharges above 200 ft³/s, which are fair.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 occurred July 1, 1932 (gage height, 37.3 ft, at site 0.58 mi upstream), discharge, 140,000 ft³/s, by slope-area measurements, combined flow of North Fork Guadalupe River 5 mi upstream and Bear Creek 2 mi upstream from mouth, and adjusted for difference in drainage area.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 15	0945	1,590	5.91				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	29	23	22	21	22	15	15	13	14	12	14
2	31	29	23	22	21	21	15	15	32	14	12	14
3	30	27	23	22	21	20	16	15	54	13	12	14
4	30	27	23	22	21	20	16	15	e34	13	11	14
5	30	27	22	22	21	20	16	15	e28	13	11	14
6	30	26	22	21	21	20	17	15	e22	12	11	15
7	30	26	22	21	21	19	16	15	16	12	11	15
8	30	25	22	21	22	18	16	15	16	12	11	15
9	31	26	22	21	22	18	16	15	16	12	12	15
10	31	26	22	21	22	19	16	15	15	13	12	15
11	31	26	22	21	21	20	15	16	14	14	13	13
12	32	25	22	20	20	20	16	16	14	16	15	13
13	31	25	22	20	21	18	16	15	14	16	14	13
14	30	25	23	20	21	18	17	15	14	14	14	14
15	29	25	23	20	21	17	16	14	13	14	14	317
16	29	25	23	20	21	17	16	14	13	14	13	13
17	29	25	23	20	21	18	16	13	13	13	13	13
18	29	29	23	20	21	17	16	13	14	13	13	21
19	29	26	23	19	21	16	17	13	14	12	13	21
20	29	25	22	19	21	12	17	13	14	12	12	20
21	28	25	22	19	21	15	17	14	14	12	12	18
22	28	25	23	19	21	16	16	12	14	12	13	16
23	29	25	23	20	20	16	16	8.9	14	12	13	15
24	25	24	22	21	20	17	15	12	14	12	14	17
25	28	23	23	21	20	17	15	12	15	13	16	24
26	29	23	22	21	21	17	15	12	15	16	16	24
27	29	23	22	21	21	17	15	14	15	14	15	24
28	29	23	22	20	20	17	15	15	14	13	14	22
29	28	23	22	21	21	16	16	14	14	13	14	21
30	28	23	22	21	---	16	15	13	14	12	14	21
31	28	---	22	21	---	16	---	13	---	12	14	---
TOTAL	912	761	695	639	607	550	476	431.9	526	407	404	805
MEAN	29.4	25.4	22.4	20.6	20.9	17.7	15.9	13.9	17.5	13.1	13.0	26.8
MAX	32	29	23	22	22	22	17	16	54	16	16	317
MIN	25	23	22	19	20	12	15	8.9	13	12	11	13
AC-FT	1810	1510	1380	1270	1200	1090	944	857	1040	807	801	1600
CFSM	.17	.15	.13	.12	.12	.10	.09	.08	.10	.08	.08	.16
IN.	.20	.17	.15	.14	.13	.12	.10	.10	.12	.09	.09	.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1996, BY WATER YEAR (WY)

MEAN	63.8	30.7	43.4	31.6	29.6	28.7	40.8	44.1	42.0	40.4	53.2	40.3
MAX	529	54.4	296	113	108	144	351	149	278	465	452	198
(WY)	1986	1975	1985	1968	1992	1992	1977	1990	1981	1987	1978	1986
MIN	12.5	14.8	16.2	15.2	13.3	13.6	13.6	11.8	10.7	11.0	10.6	10.8
(WY)	1984	1984	1990	1990	1984	1971	1971	1971	1971	1971	1984	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1967 - 1996	
ANNUAL TOTAL	8888		7213.9			
ANNUAL MEAN	24.4		19.7		41.0	
HIGHEST ANNUAL MEAN					103	1987
LOWEST ANNUAL MEAN					13.4	1984
HIGHEST DAILY MEAN	121	May 30	317	Sep 15	14900	Oct 19 1985
LOWEST DAILY MEAN	16	Sep 3	8.9	May 23	6.6	May 30 1969
ANNUAL SEVEN-DAY MINIMUM	16	Sep 3	11	Aug 2	8.3	Jun 7 1971
INSTANTANEOUS PEAK FLOW			1590	Sep 15	57000	Oct 19 1985
INSTANTANEOUS PEAK STAGE			5.91	Sep 15	29.81	Oct 19 1985
ANNUAL RUNOFF (AC-FT)	17630		14310		29710	
ANNUAL RUNOFF (CFSM)	.14		.12		.24	
ANNUAL RUNOFF (INCHES)	1.96		1.59		3.30	
10 PERCENT EXCEEDS	29		28		47	
50 PERCENT EXCEEDS	24		17		24	
90 PERCENT EXCEEDS	18		13		14	

e Estimated

08165500 GUADALUPE RIVER AT HUNT, TX

LOCATION.--Lat 30°04'11", long 99°19'17", Kerr County, Hydrologic Unit 12100201, on left bank, 56 ft upstream and 252 ft to left of left end of bridge on State Highway 39, 0.6 mi downstream from confluence of North and South Forks, 0.8 mi east of Hunt, and at mile 430.9.

DRAINAGE AREA.--288 mi².

PERIOD OF RECORD.--October 1941 to September 1949, discharge not computed above 600 ft³/s, and April 1965 to current year. Occasional discharge measurements made 1950-64.
Water-quality records.--Chemical analyses: March 1965 to April 1966.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,722.7 ft above sea level.

REMARKS.--No estimated daily discharges. Records good except those above 300 ft³/s, which are fair. There are numerous diversions for irrigation above station, but amounts are unknown. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 36.6 ft July 2, 1932, from information by local resident (discharge, 206,000 ft³/s, determined by slope-area measurement 4.5 mi downstream from gage).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 15	1045	2,080	10.50				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	57	40	39	38	48	39	32	31	22	18	25
2	65	55	38	38	38	41	43	33	36	22	18	23
3	64	52	38	38	38	40	41	35	92	21	18	22
4	61	51	38	38	38	40	39	34	47	21	18	22
5	58	52	38	38	38	40	38	44	38	21	18	22
6	58	52	39	38	38	39	43	33	34	21	17	24
7	57	52	39	38	38	38	42	32	32	20	17	24
8	55	47	39	38	39	38	41	31	32	20	18	24
9	54	46	38	38	39	39	40	32	29	19	18	24
10	54	46	38	38	39	39	39	31	29	22	19	24
11	54	47	39	38	39	38	37	37	25	26	21	23
12	54	46	42	38	39	42	35	43	25	25	24	22
13	54	46	40	38	39	46	33	36	28	27	24	23
14	53	46	40	38	39	44	36	35	27	25	22	22
15	53	48	40	38	39	40	38	35	27	24	21	817
16	52	53	40	38	39	40	35	33	22	22	21	144
17	51	50	39	39	39	40	35	31	23	21	20	69
18	51	57	40	39	39	37	35	32	25	21	19	56
19	51	50	39	38	40	36	35	32	28	20	19	48
20	50	48	38	38	40	35	35	34	26	20	19	46
21	49	47	39	38	39	35	36	34	26	20	19	41
22	50	46	39	38	40	38	38	35	22	20	18	41
23	50	46	39	39	39	39	43	32	18	19	20	39
24	49	47	39	38	39	40	37	31	20	19	24	38
25	49	45	39	38	38	40	33	30	22	19	33	36
26	52	43	39	38	38	40	31	30	26	21	30	35
27	52	43	40	39	38	42	30	35	27	22	27	34
28	50	41	39	38	37	43	32	40	25	21	25	32
29	48	39	38	38	37	42	52	38	23	20	25	31
30	49	38	38	38	---	42	39	33	22	19	27	29
31	50	---	39	38	---	40	---	32	---	19	26	---
TOTAL	1664	1436	1210	1183	1120	1241	1130	1055	887	659	663	1860
MEAN	53.7	47.9	39.0	38.2	38.6	40.0	37.7	34.0	29.6	21.3	21.4	62.0
MAX	67	57	42	39	40	48	52	44	92	27	33	817
MIN	48	38	38	38	37	35	30	30	18	19	17	22
AC-FT	3300	2850	2400	2350	2220	2460	2240	2090	1760	1310	1320	3690
CFSM	.19	.17	.14	.13	.13	.14	.13	.12	.10	.07	.07	.22
IN.	.21	.19	.16	.15	.14	.16	.15	.14	.11	.09	.09	.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1996, BY WATER YEAR (WY)

MEAN	99.8	60.5	73.3	61.2	60.2	61.7	76.8	89.0	77.9	80.4	108	72.8
MAX	677	114	322	151	213	257	570	286	551	956	992	312
(WY)	1986	1975	1985	1968	1992	1992	1977	1994	1987	1987	1978	1980
MIN	33.4	34.0	35.3	31.1	30.4	28.8	28.6	21.1	17.0	14.9	14.6	17.1
(WY)	1966	1966	1966	1966	1966	1966	1984	1984	1984	1984	1984	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1965 - 1996	
ANNUAL TOTAL	18989		14108			
ANNUAL MEAN	52.0		38.5		77.5	
HIGHEST ANNUAL MEAN					223	1987
LOWEST ANNUAL MEAN					27.6	1984
HIGHEST DAILY MEAN	407	May 30	817	Sep 15	22200	Jul 17 1987
LOWEST DAILY MEAN	28	May 22	17	Aug 6	8.2	Jul 17 1984
ANNUAL SEVEN-DAY MINIMUM	30	May 17	18	Aug 1	9.4	Jul 12 1984
INSTANTANEOUS PEAK FLOW			2080	Sep 15	108000	Jul 17 1987
INSTANTANEOUS PEAK STAGE			10.50	Sep 15	28.38	Jul 17 1987
ANNUAL RUNOFF (AC-FT)	37660		27980		56130	
ANNUAL RUNOFF (CFSM)	.18		.13		.27	
ANNUAL RUNOFF (INCHES)	2.45		1.82		3.66	
10 PERCENT EXCEEDS	67		50		97	
50 PERCENT EXCEEDS	49		38		47	
90 PERCENT EXCEEDS	32		21		28	

08166200 GUADALUPE RIVER AT KERRVILLE, TX

LOCATION.--Lat 30°03'11", long 99°09'47", Kerr County, Hydrologic Unit 12100201, on left bank 300 ft below left end of Kerrville Dam, 1.0 mi upstream from mouth of Town Creek, and 1.4 mi upstream from State Highway 16 on Guadalupe Street at Guadalupe Park in Kerrville, Texas.

DRAINAGE AREA.--510 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,601.00 ft above sea level. Prior to Apr. 4, 1989, at site 300 ft upstream, and on opposite bank at datum 1.0 ft lower.

REMARKS.--No estimated daily discharges. Records good. Numerous diversions for irrigation above station, amounts unknown.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum estimated discharge, 196,000 ft³/s July 2, 1932 (estimated gage height, 39 ft).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 15	1600	2,400	4.33				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	119	72	60	53	72	69	62	51	28	21	53
2	113	101	76	53	56	83	67	52	54	26	21	49
3	114	84	79	56	59	70	80	55	113	25	20	43
4	107	86	72	56	56	66	79	58	121	24	18	51
5	101	84	76	55	56	68	85	57	66	22	19	82
6	94	86	70	56	56	71	82	74	49	20	19	47
7	94	82	66	55	59	59	83	57	46	19	17	45
8	94	82	68	54	62	59	80	53	43	20	19	47
9	98	77	62	53	62	61	75	51	39	19	20	44
10	97	80	63	53	59	62	71	50	37	27	18	41
11	93	76	66	56	56	64	69	74	31	33	25	40
12	91	75	69	57	56	64	64	69	31	44	30	40
13	89	74	72	56	59	69	57	71	31	41	32	36
14	85	74	71	55	60	77	57	60	32	40	34	34
15	84	76	72	57	58	69	61	59	29	39	34	1090
16	85	76	71	59	56	65	67	57	28	38	36	428
17	84	86	71	60	58	72	67	52	33	34	33	188
18	86	98	76	55	58	64	68	49	34	30	29	142
19	85	94	64	55	59	62	64	47	26	28	30	118
20	82	86	64	55	60	62	59	47	25	24	29	101
21	78	79	64	55	58	63	60	47	23	20	27	96
22	78	79	62	60	57	62	67	45	21	20	28	93
23	80	76	61	62	58	66	68	45	21	23	31	85
24	77	76	62	58	59	70	74	43	21	20	42	85
25	73	72	62	60	67	69	63	42	24	23	71	94
26	76	72	60	60	69	68	54	43	31	24	78	92
27	81	76	61	56	68	76	47	57	37	27	67	83
28	76	69	64	56	60	84	54	61	40	30	55	74
29	73	69	63	56	68	81	64	71	35	29	49	63
30	78	69	64	59	---	78	91	63	31	26	52	59
31	85	---	65	56	---	72	---	53	---	22	52	---
TOTAL	2745	2433	2088	1754	1722	2128	2046	1724	1203	845	1056	3543
MEAN	88.5	81.1	67.4	56.6	59.4	68.6	68.2	55.6	40.1	27.3	34.1	118
MAX	114	119	79	62	69	84	91	74	121	44	78	1090
MIN	73	69	60	53	53	59	47	42	21	19	17	34
AC-FT	5440	4830	4140	3480	3420	4220	4060	3420	2390	1680	2090	7030
CFSM	.17	.16	.13	.11	.12	.13	.13	.11	.08	.05	.07	.23
IN.	.20	.18	.15	.13	.13	.16	.15	.13	.09	.06	.08	.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1996, BY WATER YEAR (WY)

MEAN	109	108	156	126	147	154	120	183	202	251	102	125
MAX	252	180	572	282	555	547	329	313	1088	1572	281	256
(WY)	1987	1987	1992	1992	1992	1992	1992	1994	1987	1987	1987	1986
MIN	64.8	74.1	64.1	56.6	59.4	68.6	66.6	55.6	40.1	27.3	34.1	38.5
(WY)	1990	1994	1990	1996	1996	1996	1991	1996	1996	1996	1996	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1986 - 1996	
ANNUAL TOTAL	36113		23287			
ANNUAL MEAN	98.9		63.6		150	
HIGHEST ANNUAL MEAN					399	1987
LOWEST ANNUAL MEAN					63.6	1996
HIGHEST DAILY MEAN	1340	May 30	1090	Sep 15	36100	Jul 17 1987
LOWEST DAILY MEAN	31	Sep 9	17	Aug 7	17	Aug 7 1996
ANNUAL SEVEN-DAY MINIMUM	32	Sep 7	19	Aug 4	19	Aug 4 1996
INSTANTANEOUS PEAK FLOW			2400	Sep 15	141000	Jul 17 1987
INSTANTANEOUS PEAK STAGE			4.33	Sep 15	37.72	Jul 17 1987
ANNUAL RUNOFF (AC-FT)	71630		46190		108400	
ANNUAL RUNOFF (CFSM)	.19		.12		.29	
ANNUAL RUNOFF (INCHES)	2.63		1.70		3.99	
10 PERCENT EXCEEDS	128		85		226	
50 PERCENT EXCEEDS	85		60		88	
90 PERCENT EXCEEDS	39		27		47	

08167000 GUADALUPE RIVER AT COMFORT, TX

LOCATION.--Lat 29°58'10", long 98°53'33", Kendall County, Hydrologic Unit 12100201, on right bank at downstream side of southbound bridge on Interstate Highway 10 at Comfort, 0.5 mi downstream from Cypress Creek, and at mile 396.2.

DRAINAGE AREA.--839 mi².

PERIOD OF RECORD.--May 1939 to current year.

REVISED RECORDS.--WSP 1632: 1958. WSP 1732: 1939(M). WSP 2123: Drainage area, 1944(M), 1952(M), 1957(M), 1960(M).

GAGE.--Water-stage recorder. Datum of gage is 1,369.83 ft above sea level. Prior to Nov. 27, 1939, nonrecording gage. Nov. 27, 1939, to June 2, 1980, water-stage recorder at site 0.4 mi upstream at datum 2.22 ft higher. June 2, 1980, to Sept. 30, 1986, at present site at datum 2.00 ft higher.

REMARKS.--Records good. There are many small diversions above station for irrigation. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1869 reached a stage of 42.3 ft, present datum, from report by U.S. Army Corps of Engineers. Flood of July 1, 1932, reached a stage of 38.4 ft, from floodmark, and from information by State Department of Highways and Public Transportation. Flood of July 16, 1900, reached about the same stage as that of July 1, 1932, from information by local residents. All stages are at site and datum then in use. Maximum stage since at least 1848, that of Aug. 2, 1978.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,600 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	168	645	126	127	102	110	87	78	54	33	18	70
2	163	298	129	124	105	109	83	67	49	32	15	74
3	155	202	130	118	106	113	81	59	52	29	14	57
4	152	170	129	120	106	103	90	59	93	27	14	50
5	142	168	127	117	104	101	118	61	98	26	12	77
6	134	160	127	117	105	101	137	67	78	23	9.7	90
7	132	156	125	117	107	99	114	89	65	20	11	62
8	131	146	126	117	109	87	106	70	64	19	11	52
9	131	143	124	117	108	86	107	63	59	19	11	62
10	133	141	118	116	106	87	96	59	53	19	11	58
11	130	135	121	116	103	87	87	64	48	23	13	45
12	126	130	126	114	99	87	85	77	43	25	18	43
13	123	130	129	115	98	88	81	69	41	31	26	42
14	122	128	129	114	97	90	75	68	39	32	23	42
15	117	128	130	114	98	96	76	64	39	32	26	505
16	115	127	130	113	97	91	71	62	39	32	25	862
17	116	133	132	114	96	88	74	58	37	32	24	315
18	115	186	161	113	98	89	75	52	63	28	23	212
19	116	170	150	109	98	84	74	48	56	25	21	162
20	115	160	132	107	99	79	71	44	41	26	21	164
21	109	149	129	111	96	81	68	43	35	24	21	130
22	107	144	128	109	93	79	69	43	32	19	20	118
23	108	140	126	112	91	80	73	41	30	15	20	111
24	108	136	125	111	90	85	70	40	e29	15	28	106
25	107	134	125	108	89	87	70	40	29	16	54	128
26	107	131	124	110	92	87	66	38	29	15	77	116
27	114	132	124	107	94	90	62	42	38	17	67	112
28	115	128	124	105	92	104	58	70	43	18	58	106
29	107	125	124	107	94	101	59	58	42	20	49	96
30	112	125	127	107	---	99	65	60	39	23	53	86
31	122	---	129	105	---	93	---	57	---	21	69	---
TOTAL	3852	5000	3986	3511	2872	2861	2448	1810	1457	736	862.7	4153
MEAN	124	167	129	113	99.0	92.3	81.6	58.4	48.6	23.7	27.8	138
MAX	168	645	161	127	109	113	137	89	98	33	77	862
MIN	107	125	118	105	89	79	58	38	29	15	9.7	42
AC-FT	7640	9920	7910	6960	5700	5670	4860	3590	2890	1460	1710	8240

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1996, BY WATER YEAR (WY)

MEAN	263	151	203	175	215	204	230	293	251	159	221	152
MAX	2417	518	2700	987	1728	1559	1598	1122	2820	1974	4782	575
(WY)	1986	1975	1992	1992	1992	1992	1977	1975	1987	1987	1978	1978
MIN	.000	3.63	10.5	16.8	24.4	16.6	13.2	14.9	.097	.000	.000	.000
(WY)	1957	1957	1957	1957	1957	1956	1955	1956	1956	1956	1954	1954

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1939 - 1996	
ANNUAL TOTAL	64540		33548.7			
ANNUAL MEAN	177		91.7		211	
HIGHEST ANNUAL MEAN					894	1992
LOWEST ANNUAL MEAN					14.5	1956
HIGHEST DAILY MEAN	1180	May 30	862	Sep 16	74200	Aug 2 1978
LOWEST DAILY MEAN	61	Sep 7	9.7	Aug 6	.00	Aug 31 1952
ANNUAL SEVEN-DAY MINIMUM	61	Sep 7	11	Aug 5	.00	Aug 31 1952
INSTANTANEOUS PEAK FLOW			1740	Sep 15	240000	Aug 2 1978
INSTANTANEOUS PEAK STAGE			6.70	Sep 15	g40.90	Aug 2 1978
ANNUAL RUNOFF (AC-FT)	128000		66540		152600	
10 PERCENT EXCEEDS	259		132		356	
50 PERCENT EXCEEDS	152		92		108	
90 PERCENT EXCEEDS	82		24		24	

e Estimated
g At site and datum then in use.

08167500 GUADALUPE RIVER NEAR SPRING BRANCH, TX
(Hydrologic index station)

LOCATION.--Lat 29°51'37", long 98°23'00", Comal County, Hydrologic Unit 12100201, at downstream side of bridge on Ranch Road 311, 1.9 mi southeast of Spring Branch Post Office, 7.5 mi downstream from Curry Creek, and at mile 334.4.

DRAINAGE AREA.--1,315 mi².

PERIOD OF RECORD.--June 1922 to current year.
Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982, October 1989 to August 1995.

REVISED RECORDS.--WSP 1562: 1923-24, 1926, 1927-28(M), 1929, 1930(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 948.10 ft above sea level. Prior to Jan. 14, 1981, at site 220 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Several small diversions above station for irrigation. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1859, about 53 ft in 1869; flood in July 1900 reached a stage of about 49 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 24	2030	5,320	9.70				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	206	430	152	153	116	111	103	63	55	38	11	122
2	194	790	153	149	121	116	97	69	55	37	14	99
3	201	365	155	146	119	123	94	79	55	34	15	89
4	188	261	154	142	119	124	95	75	49	30	14	92
5	181	218	155	138	121	126	94	67	44	28	13	80
6	171	208	149	137	123	116	113	64	80	25	9.7	71
7	163	200	149	134	123	108	146	65	85	22	8.0	91
8	158	191	150	135	123	103	143	74	76	21	7.4	100
9	157	180	147	135	123	104	125	94	63	19	4.7	78
10	154	177	144	135	125	97	118	81	60	19	6.4	71
11	153	169	144	135	123	97	115	77	56	23	5.1	83
12	151	162	145	134	116	98	106	68	50	18	6.1	73
13	148	163	148	133	115	100	100	72	47	17	6.4	62
14	143	160	151	131	114	101	97	78	42	14	15	56
15	138	156	155	131	113	99	90	70	38	17	15	61
16	136	155	151	131	109	101	81	68	35	21	16	547
17	134	161	155	131	109	111	85	63	32	25	25	732
18	135	168	160	130	108	99	84	57	31	24	23	348
19	135	205	169	127	111	96	86	55	31	25	24	264
20	134	209	185	130	112	95	86	50	42	25	23	200
21	129	194	161	124	109	90	86	48	55	23	21	184
22	130	185	156	126	109	89	83	43	41	18	21	161
23	127	176	151	130	108	89	79	37	36	15	23	139
24	125	169	146	125	101	87	76	35	31	18	46	1140
25	124	165	146	127	101	87	78	36	32	16	47	682
26	125	165	146	127	101	88	77	33	35	19	51	167
27	125	164	148	121	102	97	77	39	33	14	68	161
28	125	159	146	122	102	100	74	51	31	11	82	140
29	128	155	146	123	105	104	89	44	29	10	75	130
30	129	152	149	121	---	111	66	56	34	10	90	120
31	143	---	152	120	---	108	---	53	---	9.6	256	---
TOTAL	4590	6412	4718	4083	3281	3175	2843	1864	1383	645.6	1041.8	6343
MEAN	148	214	152	132	113	102	94.8	60.1	46.1	20.8	33.6	211
MAX	206	790	185	153	125	126	146	94	85	38	256	1140
MIN	124	152	144	120	101	87	66	33	29	9.6	4.7	56
AC-FT	9100	12720	9360	8100	6510	6300	5640	3700	2740	1280	2070	12580

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1996, BY WATER YEAR (WY)

MEAN	335	227	309	292	359	344	373	512	513	310	235	299
MAX	1584	938	4927	1903	4164	3306	2417	2216	6329	3744	4980	4055
(WY)	1982	1975	1992	1992	1992	1992	1977	1992	1987	1932	1978	1936
MIN	5.91	11.1	6.48	10.9	29.3	16.8	6.11	19.3	.000	.000	.25	.29
(WY)	1952	1957	1957	1957	1956	1956	1956	1956	1956	1956	1954	1954

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1922 - 1996	
ANNUAL TOTAL	96770		40379.4			
ANNUAL MEAN	265		110		343	
HIGHEST ANNUAL MEAN					1819	1992
LOWEST ANNUAL MEAN					13.3	1956
HIGHEST DAILY MEAN	3970	May 30	1140	Sep 24	76500	Aug 3 1978
LOWEST DAILY MEAN	77	Sep 12	4.7	Aug 9	.00	Aug 19 1951
ANNUAL SEVEN-DAY MINIMUM	79	Sep 8	6.3	Aug 7	.00	Aug 31 1951
INSTANTANEOUS PEAK FLOW			5320	Sep 24	160000	Aug 3 1978
INSTANTANEOUS PEAK STAGE			9.70	Sep 24	45.25	Aug 3 1978
ANNUAL RUNOFF (AC-FT)	191900		80090		248400	
10 PERCENT EXCEEDS	424		166		627	
50 PERCENT EXCEEDS	218		103		147	
90 PERCENT EXCEEDS	112		22		32	

08167700 CANYON LAKE NEAR NEW BRAUNFELS, TX

LOCATION.--Lat 29°52'07", long 98°11'55", Comal County, Hydrologic Unit 12100201, in intake structure of Canyon Dam on Guadalupe River, 12 mi northwest of New Braunfels, and at mile 303.0.

DRAINAGE AREA.--1,432 mi².

PERIOD OF RECORD.--July 1962 to current year. Prior to October 1970, published as Canyon Reservoir.
Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982, October 1989 to August 1995.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Sept. 24, 1964, nonrecording gage at present site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 6,830 ft long, consisting of the main dam 4,410 ft long, an earthen dike 210 ft long, a 1,260-foot-long uncontrolled broad-crested-type spillway, and a 950-foot concrete and earthen nonoverflow section. Deliberate impoundment began June 16, 1964, and main part of dam was completed in August 1964. The flood-control outlet works consist of a 10.0-foot-diameter conduit controlled by two 5.7 by 10.0-foot hydraulically operated slide gates. The lake was built for water conservation and flood control. Capacity table beginning Oct. 1, 1974, is based on a sedimentation survey of August 1972. Small diversions above the lake for irrigation. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	974.0	
Crest of spillway	943.0	736,700
Top of conservation pool	909.0	382,000
Lowest gated outlet (invert)	775.0	240

COOPERATION.--Records of elevations and 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, 732,600 acre-ft June 19, 1987 (elevation, 942.68 ft); minimum observed since conservation pool first reached in April 1968, 311,200 acre-ft Nov. 24, 1984 (elevation, 899.85 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 379,200 acre-ft Oct. 1 (elevation, 908.66 ft); minimum, 341,900 acre-ft Aug. 21 (elevation, 903.96 ft).

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

901.0	319,600	918.0	460,800	931.0	592,700
906.0	357,800	922.0	498,800	934.0	626,600
910.0	390,300	925.0	528,800	936.0	650,100
914.0	424,600	928.0	560,100	938.0	674,100

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	379200	377700	375400	371900	368800	367000	364200	361400	356000	352300	345800	345100
2	379200	378800	375200	371500	368700	366800	364100	361200	355900	352100	345600	345000
3	379000	378800	375100	371200	368600	366700	364000	361100	355700	352000	345300	345400
4	378800	378800	375000	371200	368300	366800	363900	360900	355700	351800	345000	345500
5	378500	378800	375000	371100	368300	367000	364600	360800	355400	351600	344700	345400
6	378100	378700	374700	370800	368300	367200	364300	360700	355100	351300	344500	345200
7	377900	378600	374500	370500	368300	366700	364300	360500	355400	351100	344300	345100
8	377700	378400	374400	370300	368200	366300	364200	360500	355100	350800	344100	345100
9	377500	378200	374000	370300	368300	366200	364200	360400	354800	350600	343900	345000
10	377400	378300	373700	370100	368300	366100	364200	360300	354400	350600	343800	344800
11	377300	377900	373500	370000	368200	365900	364100	360300	354200	350200	343600	344600
12	377200	377700	373300	370000	368100	365800	364000	360200	353900	350100	343400	344500
13	377200	377500	373300	369900	367800	365800	363900	359900	353800	349900	343200	344200
14	376900	377300	373100	369900	367800	365700	363800	359700	353500	349600	343300	343900
15	376800	377200	373100	369900	367800	365700	363400	359500	353400	349500	343100	344200
16	376600	377000	372900	369900	367600	365800	363200	359200	353100	349200	342900	344400
17	376500	377200	373000	370000	367400	365800	363000	359000	352900	348800	342600	345600
18	376400	377200	373100	369800	367400	365700	363000	358700	352800	348700	342600	346000
19	376300	377200	372800	369600	367400	365400	362700	358400	352600	348500	342300	346300
20	375900	377200	372600	369600	367400	365300	362700	358100	352300	348200	342200	346600
21	375600	377000	372600	369500	367300	365000	362400	358000	352100	348000	341900	346700
22	375500	376900	372400	369500	367200	364900	362600	357500	352000	347700	342100	346600
23	375300	376900	372400	369500	367100	364900	362400	357100	351700	347600	342800	346500
24	375000	376700	372200	369500	367000	364900	362000	356900	351600	347400	343700	347700
25	374900	376500	372100	369400	367000	364600	361800	356500	353100	347300	343900	349200
26	375000	376300	372000	369400	367000	364600	361600	356200	353100	347000	343700	349200
27	374900	376200	372000	369100	367000	364600	361500	356600	353000	346800	343600	349200
28	374600	375900	371800	369100	366900	364500	361300	356400	352800	346700	343700	348800
29	374600	375700	371700	369100	367000	364400	362000	356100	352600	346400	343900	348700
30	374500	375500	371700	369100	---	364500	361600	356100	352500	346200	344200	348500
31	375900	---	371700	368900	---	364200	---	356000	---	346000	345000	---
MAX	379200	378800	375400	371900	368800	367200	364600	361400	356000	352300	345800	349200
MIN	374500	375500	371700	368900	366900	364200	361300	356000	351600	346000	341900	343900
(+)	908.25	908.21	907.74	907.39	907.15	906.80	906.48	905.77	905.33	904.50	904.37	904.82
(@)	-3300	-400	-3800	-2800	-1900	-2800	-2600	-5600	-3500	-6500	-1000	+3500

CAL YR 1995 MAX 403000 MIN 371700 @ -15000
WTR YR 1996 MAX 379200 MIN 341900 @ -30700

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

08167800 GUADALUPE RIVER AT SATTLER, TX

LOCATION.--Lat 29°51'32", long 98°10'47", Comal County, Hydrologic Unit 12100202, on right bank 200 ft upstream from Horseshoe Falls, 0.8 mi north of Sattler, 1.8 mi downstream from Canyon Dam, 2.3 mi upstream from Heiser Hollow, 11.2 mi north of New Braunfels, and at mile 301.2.

DRAINAGE AREA.--1,436 mi², of which 1,432 mi² is above Canyon Dam.

PERIOD OF RECORD.--March 1960 to current year.
Water-quality records.--Water temperature: June 1984 to September 1987. Chemical and biochemical analyses: October 1980 to September 1982, October 1989 to August 1995.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 742.24 ft above sea level (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records good. Since July 21, 1962, flow completely regulated by Canyon Lake (station 08167700) 1.8 mi upstream. Small diversions above station for irrigation. Satellite telemeter at station.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1961-62).--Maximum discharge, 20,800 ft³/s Oct. 29, 1960 (gage height, 12.20 ft); no flow July 31 to Aug. 6, 1962 (result of closure of Canyon Dam).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1869 (stage unknown) has not been exceeded since that date; flood in July 1900 (stage unknown) exceeded 39 ft; maximum stage since at least 1904, 39 ft in July 1932 and June 1935, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	193	156	200	155	132	126	126	122	80	41	27	104
2	195	195	200	156	132	126	e124	122	80	41	26	104
3	195	195	200	157	132	126	e122	122	80	43	26	104
4	195	195	201	157	131	124	122	122	81	48	25	104
5	195	195	203	157	132	124	123	122	82	50	25	104
6	195	195	203	157	132	123	122	128	82	49	26	104
7	195	197	203	157	132	120	121	132	94	48	26	104
8	195	199	203	157	132	120	121	132	105	48	25	104
9	154	200	203	157	130	120	120	124	104	50	25	104
10	106	197	203	157	130	122	120	128	104	49	25	104
11	123	197	201	145	130	128	121	128	104	45	25	104
12	127	197	200	134	130	132	122	128	99	35	25	104
13	115	197	200	133	129	132	121	131	80	35	26	104
14	110	197	200	132	128	132	120	120	79	36	28	104
15	112	197	200	132	128	132	118	130	79	33	27	106
16	114	197	200	132	128	133	113	131	79	32	27	106
17	118	197	e200	130	128	132	120	128	80	33	27	106
18	122	197	174	131	128	130	128	129	79	33	27	106
19	124	197	155	132	125	126	130	130	77	33	26	107
20	126	197	155	132	128	126	130	129	66	34	29	107
21	126	197	147	132	130	126	130	128	56	33	29	106
22	126	197	149	131	130	126	128	128	57	34	28	106
23	123	197	150	130	130	126	124	128	58	36	27	107
24	118	197	150	130	127	126	129	128	59	33	46	109
25	117	197	150	130	124	121	132	129	68	30	53	108
26	110	197	151	128	123	124	132	128	52	29	60	108
27	116	199	152	128	122	126	132	128	41	29	78	108
28	118	200	152	128	124	126	132	129	45	28	92	106
29	120	200	152	128	125	126	139	114	45	27	92	106
30	114	200	154	132	---	126	122	55	45	28	102	107
31	114	---	155	132	---	126	---	69	---	28	104	---
TOTAL	4311	5875	5566	4329	3732	3913	3744	3802	2240	1151	1234	3165
MEAN	139	196	180	140	129	126	125	123	74.7	37.1	39.8	105
MAX	195	200	203	157	132	133	139	132	105	50	104	109
MIN	106	156	147	128	122	120	113	55	41	27	25	104
AC-FT	8550	11650	11040	8590	7400	7760	7430	7540	4440	2280	2450	6280

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1996#, BY WATER YEAR (WY)

MEAN	321	336	291	452	412	476	496	506	643	534	475	304
MAX	1317	1177	1138	4437	2089	3949	3705	2318	2783	4883	3854	1306
(WY)	1987	1974	1987	1992	1992	1992	1992	1992	1992	1987	1978	1987
MIN	43.1	66.2	41.4	60.4	13.4	71.7	45.6	47.1	36.1	22.1	10.1	10.5
(WY)	1964	1976	1966	1964	1965	1988	1971	1971	1963	1963	1963	1963

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1963 - 1996#	
ANNUAL TOTAL	105771		43062			
ANNUAL MEAN	290		118		437	
HIGHEST ANNUAL MEAN					1900	1992
LOWEST ANNUAL MEAN					69.4	1963
HIGHEST DAILY MEAN	978	Jan 7	203	Dec 5	5680	Aug 5 1978
LOWEST DAILY MEAN	100	Aug 24	25	Aug 4	.80	Jan 29 1965
ANNUAL SEVEN-DAY MINIMUM	101	Aug 18	25	Aug 4	1.2	Sep 24 1984
INSTANTANEOUS PEAK FLOW			218	Nov 8	5850	Aug 5 1978
INSTANTANEOUS PEAK STAGE			4.92	Nov 8	8.31	Aug 5 1978
ANNUAL RUNOFF (AC-FT)	209800		85410		316700	
10 PERCENT EXCEEDS	581		197		791	
50 PERCENT EXCEEDS	247		125		215	
90 PERCENT EXCEEDS	110		33		67	

e Estimated
Period of regulated streamflow.

08168500 GUADALUPE RIVER ABOVE COMAL RIVER AT NEW BRAUNFELS, TX

LOCATION.--Lat 29°42'53", long 98°06'35", Comal County, Hydrologic Unit 12100202, on right bank at New Braunfels, 1.1 mi upstream from Comal River, 21.9 mi downstream from Canyon Lake, and at mile 281.1.

DRAINAGE AREA.--1,518 mi², of which 1,432 mi² is above Canyon Dam.

PERIOD OF RECORD.--December 1927 to current year.

REVISED RECORDS.--WSP 898: 1935. WSP 1562: 1932. WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 586.65 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Small diversions for irrigation below station 08167800 and above this station. Since July 21, 1962, flow largely regulated by Canyon Lake (station 08167700) 21.9 mi upstream. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--34 years (water years 1929-62) prior to regulation by Canyon Lake, 372 ft³/s (269,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1929-62).--Maximum discharge, 101,000 ft³/s June 15, 1935 (gage height, 32.95 ft). Maximum discharge since closure of Canyon Dam on July 21, 1962, 92,600 ft³/s May 12, 1972 (gage height, 31.65 ft); no flow July 8, 9, and July 17 to Aug. 20, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1845, 38 ft July 8, 1869, and in December 1913, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	187	272	196	158	144	146	140	127	64	37	15	187
2	196	264	196	158	144	143	137	127	71	33	14	161
3	187	246	196	161	142	142	136	127	75	31	14	144
4	182	233	196	161	142	142	137	127	70	34	14	135
5	183	222	196	161	142	145	145	125	68	39	13	127
6	182	216	196	161	145	144	159	124	66	37	14	120
7	182	210	196	161	145	138	143	129	71	37	13	115
8	182	204	199	161	146	136	140	130	85	36	13	125
9	181	201	196	161	148	137	137	132	87	35	14	121
10	120	201	196	161	149	140	135	125	86	37	14	114
11	119	200	196	161	147	142	135	132	85	38	13	110
12	131	196	196	145	147	145	135	130	84	35	13	108
13	127	196	196	140	143	145	133	128	75	24	16	106
14	115	196	195	136	147	144	131	129	62	21	17	106
15	114	196	200	136	142	142	130	114	62	22	16	114
16	118	196	201	142	142	141	122	124	61	21	17	103
17	121	206	205	143	143	142	121	123	61	20	15	103
18	125	199	201	142	143	139	130	121	60	21	15	103
19	129	196	164	142	143	135	133	120	62	21	15	103
20	129	196	160	142	137	133	130	121	58	20	15	125
21	129	194	161	142	139	133	127	121	48	20	16	109
22	131	194	153	142	142	133	130	121	40	19	19	107
23	134	196	158	142	139	133	124	120	41	19	31	106
24	126	195	158	142	139	136	125	122	41	20	87	107
25	124	194	158	142	135	133	127	124	64	23	58	148
26	122	195	158	143	133	134	130	124	92	26	74	151
27	122	196	156	140	133	144	127	131	49	18	66	145
28	124	196	155	142	136	146	131	127	34	17	86	135
29	131	196	155	142	149	145	153	125	36	16	94	127
30	131	196	158	142	---	145	128	90	34	16	125	122
31	134	---	158	145	---	142	---	43	---	16	198	---
TOTAL	4418	6198	5605	4597	4126	4345	4011	3763	1892	809	1144	3687
MEAN	143	207	181	148	142	140	134	121	63.1	26.1	36.9	123
MAX	196	272	205	161	149	146	159	132	92	39	198	187
MIN	114	194	153	136	133	133	121	43	34	16	13	103
AC-FT	8760	12290	11120	9120	8180	8620	7960	7460	3750	1600	2270	7310

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1996#, BY WATER YEAR (WY)

MEAN	389	405	371	536	506	565	578	632	761	611	538	365
MAX	1409	1307	1302	4704	2379	4254	3826	2450	2948	5136	3866	1484
(WY)	1987	1974	1987	1992	1992	1992	1992	1992	1992	1987	1978	1987
MIN	39.0	85.4	67.9	71.2	105	93.8	57.5	59.3	47.4	24.8	23.2	16.0
(WY)	1964	1964	1964	1964	1963	1963	1971	1971	1984	1984	1963	1963

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1963 - 1996#	
ANNUAL TOTAL	117974		44595			
ANNUAL MEAN	323		122		521	
HIGHEST ANNUAL MEAN					2057	1992
LOWEST ANNUAL MEAN					84.9	1984
HIGHEST DAILY MEAN	1320	May 30	272	Nov 1	13300	May 12 1972
LOWEST DAILY MEAN	109	Aug 20	13	Aug 5	2.6	Sep 28 1984
ANNUAL SEVEN-DAY MINIMUM	113	Aug 20	13	Aug 5	2.7	Sep 25 1984
INSTANTANEOUS PEAK FLOW			519	Nov 1	92600	May 12 1972
INSTANTANEOUS PEAK STAGE			2.70	Nov 1	31.65	May 12 1972
ANNUAL RUNOFF (AC-FT)	234000		88450		377800	
10 PERCENT EXCEEDS	661		196		965	
50 PERCENT EXCEEDS	263		133		293	
90 PERCENT EXCEEDS	122		21		91	

Period of regulated streamflow.

08168710 COMAL SPRINGS AT NEW BRAUNFELS, TEXAS

LOCATION.--Lat 29°42'21", long 98°07'20", Comal County, Hydrologic Unit 12100202, on right bank 200 ft upstream from San Antonio Street viaduct in New Braunfels, and 1.1 mi upstream from mouth.

DRAINAGE AREA.--Not applicable. This is a springflow station.

PERIOD OF RECORD.--October 1929 to current year.

GAGE.--Water-stage recorder. Concrete control. Datum of gage is 582.80 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. The flow from Comal Springs emerges from the Edwards and associated limestones in the Balcones Fault Zone. Flow is mainly from Comal Springs except during local runoff events. Springflow is separated from runoff using computer techniques. Flow is affected at times by cleanup operations by the city of New Braunfels at Landa Park Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily spring discharge, 534 ft³/s Oct. 14, 1973; no flow occurred June 13 to Nov. 3, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum daily spring discharge, 272 ft³/s Dec. 31; minimum daily, 83 ft³/s Aug. 16.

(SEPARATION BY MODEL)
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	250	251	264	271	256	221	215	194	136	92	102	130
2	250	251	265	270	256	222	217	192	137	92	103	132
3	251	252	266	271	255	224	216	189	138	93	102	135
4	251	254	266	270	255	224	215	186	139	92	100	138
5	250	255	265	270	253	226	217	188	138	92	98	137
6	249	256	264	268	253	227	219	186	138	90	96	138
7	249	255	264	268	252	225	222	183	137	88	94	139
8	249	256	265	269	251	224	222	181	137	86	93	140
9	249	256	264	268	249	226	219	181	132	85	91	142
10	248	259	264	268	248	226	216	178	129	86	88	143
11	247	257	266	268	246	226	216	177	126	87	86	143
12	247	257	265	265	246	226	214	180	126	88	84	144
13	247	259	266	265	243	226	212	178	122	89	85	144
14	246	256	266	264	244	226	213	175	119	90	84	146
15	247	255	265	264	241	223	210	175	113	91	84	150
16	247	254	265	264	237	224	206	170	107	92	83	151
17	245	256	270	264	236	224	204	165	102	93	83	153
18	244	259	268	262	237	225	202	164	97	94	83	153
19	244	263	269	263	235	223	200	160	96	91	83	153
20	242	262	268	262	231	222	198	157	94	91	84	154
21	242	262	269	263	227	222	197	154	93	90	86	156
22	244	261	267	263	224	221	200	150	91	89	93	157
23	243	262	269	262	221	221	199	145	89	88	98	157
24	240	263	268	261	220	222	201	141	87	88	106	160
25	241	264	270	260	218	219	200	140	87	92	112	163
26	245	264	270	259	218	221	196	142	88	93	118	166
27	243	265	270	258	217	224	194	140	88	95	118	169
28	240	263	269	259	216	221	198	139	89	97	120	169
29	244	263	270	259	218	218	197	137	90	101	122	169
30	245	263	271	257	---	215	195	136	91	101	124	169
31	249	---	272	257	---	218	---	135	---	102	127	---
TOTAL	7628	7753	8280	8192	6903	6912	6230	5118	3356	2838	3030	4500
MEAN	246	258	267	264	238	223	208	165	112	91.5	97.7	150
MAX	251	265	272	271	256	227	222	194	139	102	127	169
MIN	240	251	264	257	216	215	194	135	87	85	83	130
AC-FT	15130	15380	16420	16250	13690	13710	12360	10150	6660	5630	6010	8930

CAL YR 1995 TOTAL 101238 MEAN 277 MAX 330 MIN 227 AC-FT 200800
WTR YR 1996 TOTAL 70740 MEAN 193 MAX 272 MIN 83 AC-FT 140300

08169000 COMAL RIVER AT NEW BRAUNFELS, TX

LOCATION.--Lat 29°42'21", long 98°07'20", Comal County, Hydrologic Unit 12100202, on right bank 200 ft upstream from San Antonio Street viaduct in New Braunfels and 1.1 mi upstream from mouth.

DRAINAGE AREA.--130 mi². Normal flow of river comes from springs; drainage area not applicable.

PERIOD OF RECORD.--1882 to September 1932 (discharge measurements and fragmentary daily discharge record), October 1932 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Oct. 1, 1955. Datum of gage is 582.80 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. The flow from Comal Springs emerges from the Edwards and associated limestones in the Balcones Fault Zone. Except during periods of rainfall, flow of river is primarily from Comal Springs about 1.0 mi upstream. No flow from Comal Springs from June 13 to Nov. 3, 1956. Flow is affected at times by cleanup operations by the city of New Braunfels at Landa Park Lake and at times by discharge from the flood-detention pools of five floodwater-retarding structures with a combined detention capacity of 17,580 acre-ft. These structures control runoff from 74.6 mi² above station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood information begins with flood of July 8, 1869, which reached a stage of 36.91 ft, from painted and dated marks in old Remmert Brewery 0.5 mi downstream; the flood of Oct. 17, 1870, reached a stage of 37.65 ft at same site (probably some backwater from Guadalupe River).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	252	251	264	271	256	221	215	194	136	98	102	137
2	250	251	265	270	256	222	217	192	141	95	103	141
3	251	252	266	271	255	224	216	191	145	93	104	141
4	251	254	266	270	255	224	215	186	139	94	100	138
5	250	255	265	270	253	226	221	188	142	99	98	137
6	249	256	264	268	253	227	219	186	140	95	98	140
7	249	255	264	268	252	225	222	183	137	89	94	139
8	249	256	265	269	251	224	222	181	137	86	93	142
9	249	256	264	268	249	226	219	181	137	85	93	142
10	248	259	264	268	248	226	216	178	138	87	91	143
11	247	257	266	268	246	226	216	177	132	93	87	143
12	247	257	265	265	246	226	214	180	127	97	84	144
13	247	259	266	265	243	226	212	180	124	98	85	144
14	246	256	266	264	244	226	213	175	119	95	90	146
15	247	255	265	264	241	223	210	175	119	91	90	168
16	247	254	265	264	237	224	206	172	115	94	90	154
17	245	260	270	264	236	229	204	165	112	93	87	153
18	244	259	268	262	237	225	207	164	97	95	83	153
19	244	263	269	263	235	223	200	163	102	95	83	153
20	242	262	268	262	231	222	198	157	97	96	86	160
21	242	262	269	263	227	222	197	156	93	90	86	156
22	244	261	267	263	224	221	200	150	92	89	93	157
23	243	262	269	262	221	221	199	147	89	88	98	157
24	240	263	268	261	220	222	201	141	87	88	131	223
25	241	264	270	260	218	219	200	140	87	97	120	264
26	245	264	270	259	218	221	196	142	93	96	118	173
27	243	265	270	258	217	224	194	147	99	99	118	169
28	240	263	269	259	216	223	198	144	100	101	120	169
29	244	263	270	259	223	218	216	137	102	107	122	169
30	245	263	271	257	---	215	204	138	100	101	127	172
31	249	---	272	257	---	218	---	135	---	102	132	---
TOTAL	7630	7757	8280	8192	6908	6919	6267	5145	3478	2926	3106	4727
MEAN	246	259	267	264	238	223	209	166	116	94.4	100	158
MAX	252	265	272	271	256	229	222	194	145	107	132	264
MIN	240	251	264	257	216	215	194	135	87	85	83	137
AC-FT	15130	15390	16420	16250	13700	13720	12430	10210	6900	5800	6160	9380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 1996, BY WATER YEAR (WY)

MEAN	284	291	301	306	307	302	307	325	300	273	255	276
MAX	490	486	437	499	527	536	531	939	520	466	466	663
(WY)	1974	1975	1992	1968	1992	1992	1977	1972	1987	1992	1992	1952
MIN	12.5	23.7	40.9	51.5	52.5	70.6	45.2	31.7	11.5	12.0	15.4	15.0
(WY)	1957	1957	1957	1957	1957	1956	1956	1956	1956	1956	1956	1956

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1933 - 1996	
ANNUAL TOTAL	101650		71335			
ANNUAL MEAN	278		195		294	
HIGHEST ANNUAL MEAN					431	1992
LOWEST ANNUAL MEAN					50.9	1956
HIGHEST DAILY MEAN	372	May 30	272	Dec 31	14400	May 12 1972
LOWEST DAILY MEAN	227	Sep 6	83	Aug 18	5.5	Jun 7 1956
ANNUAL SEVEN-DAY MINIMUM	230	Sep 13	86	Aug 15	8.5	Jun 2 1956
INSTANTANEOUS PEAK FLOW			604	Sep 25	60800	May 11 1972
INSTANTANEOUS PEAK STAGE			4.91	Sep 25	36.55	May 11 1972
ANNUAL RUNOFF (AC-FT)	201600		141500		212900	
10 PERCENT EXCEEDS	314		265		392	
50 PERCENT EXCEEDS	277		218		304	
90 PERCENT EXCEEDS	242		95		165	

GUADALUPE RIVER MAIN STEM
08169580 GUADALUPE RIVER BELOW NEW BRAUNFELS, TX

LOCATION.--Lat 29°40'00", long 98°04'14", Comal County, Hydrologic Unit 12100202, in Lake Dunlap, 8 mi southeast of New Braunfels, and 15 mi downstream from Interstate Highway 35 bridge.

DRAINAGE AREA.--1,696 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1968 to Sept. 4, 1996 (discontinued). Pesticide analyses: June 1986 to June 1992.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
OCT 26...	1105	540	7.8	22.0	7.3	86	240	31	69	17
JAN 17...	1455	513	8.3	19.5	11.2	126	240	26	69	17
MAR 21...	1355	487	8.5	20.5	12.8	146	220	26	61	17
MAY 10...	1425	515	8.3	25.0	8.0	99	210	9	58	16
JUL 09...	1410	495	8.0	30.0	9.1	123	220	25	62	17
SEP 04...	1355	476	7.9	27.0	11.1	140	230	17	66	16

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)
OCT 26...	18	0.5	1.9	210	25	22	0.20	12	297	1.08
JAN 17...	16	0.4	1.9	220	25	20	0.30	10	294	1.08
MAR 21...	17	0.5	1.8	200	27	22	0.30	9.0	179	2.85
MAY 10...	18	0.5	1.8	200	27	22	0.30	12	281	0.980
JUL 09...	17	0.5	2.0	200	25	23	0.30	11	281	0.720
SEP 04...	12	0.3	1.8	210	24	19	0.20	11	283	1.10

DATE	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
OCT 26...	1.08	0.020	1.10	1.10	0.040	--	<0.20	0.020	0.030	0.09
JAN 17...	1.08	0.020	1.10	1.10	0.020	--	<0.20	0.030	0.030	0.09
MAR 21...	2.85	0.050	2.90	2.90	0.350	0.35	0.70	0.070	0.050	0.15
MAY 10...	0.980	0.020	1.00	1.00	0.040	0.16	0.20	0.060	0.050	0.15
JUL 09...	0.720	0.030	0.750	0.750	0.040	--	<0.20	0.010	0.030	0.09
SEP 04...	--	<0.010	1.10	1.10	0.050	--	<0.20	0.040	0.040	0.12

08170000 SAN MARCOS RIVER SPRINGFLOW AT SAN MARCOS, TX

LOCATION.--Lat 29°53'20", long 97°56'02", Hays County, Hydrologic Unit 12100203, on left bank at downstream side of bridge on Aquarena Springs Drive (Loop 82), 500 ft downstream from Spring Lake, and 4.2 mi upstream from Blanco River.

DRAINAGE AREA.--Not applicable. This is a springflow station.

PERIOD OF RECORD.--October 1956 to current year. May 1956 to September 1988, at site 0.7 mi downstream from bridge on Interstate Highway 35 and 2.1 mi upstream from Blanco River. October 1988 to September 1994, at site of ground-water well No. LR-67-09-110, 0.2 mi southwest of intersection of FM 2439 and McCarty Lane and 3.7 mi south of San Marcos. Water-level data and measurements of springflow were used to compute springflow. Records prior to October 1956 published as San Marcos River at San Marcos (station 08170500).

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 557.67 ft above sea level. May 1956 to September 1988, water-stage recorder 0.7 mi downstream from Interstate Highway 35 and 2.1 mi upstream from Blanco River, datum 536.82 ft above sea level. October 1988 to September 1994, water-stage recorder at ground-water well No. LR-67-09-110, 0.2 mi southwest of intersection of FM 2439 and McCarty Lane and 3.7 mi south of San Marcos, datum 678.50 ft above sea level.

REMARKS.--No estimated daily discharge. Records fair. Entire flow of river is from San Marcos Springs, located about 1.1 mi upstream from Interstate Highway 35, except during periods of local runoff. San Marcos Springs emerge from the Edwards and associated limestones in the Balcones Fault Zone. Springflow is separated from runoff using computer techniques. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily spring discharge, 451 ft^3/s Mar. 12, 1992; minimum daily, 46 ft^3/s Aug. 15, 16, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum daily spring discharge, 149 ft^3/s Nov. 6; minimum daily, 76 ft^3/s Aug. 15, 16.

(SEPARATION BY MODEL)
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146	146	136	126	109	107	105	101	97	93	80	98
2	146	146	135	124	109	107	104	101	97	92	80	101
3	146	148	134	124	109	106	105	102	97	90	79	104
4	146	148	134	125	108	106	105	102	96	89	79	108
5	146	148	133	123	109	108	106	102	96	88	79	108
6	145	149	132	122	109	108	105	100	95	87	79	108
7	145	148	131	121	109	107	104	101	95	87	78	109
8	145	147	132	121	109	107	103	101	95	86	78	108
9	144	148	131	122	109	108	102	101	94	85	79	108
10	143	146	130	120	109	108	103	101	94	85	78	109
11	142	144	131	118	107	108	104	101	94	86	78	109
12	142	144	132	118	107	109	104	101	94	86	78	109
13	142	143	131	118	108	109	104	101	95	86	78	110
14	140	142	132	117	108	109	102	100	95	84	77	110
15	140	141	131	116	107	109	100	101	95	83	76	111
16	140	141	131	116	107	109	101	101	95	83	76	109
17	140	142	132	116	107	109	100	101	94	83	77	109
18	140	140	131	114	108	108	100	101	94	83	78	109
19	140	139	129	114	107	107	99	100	94	82	77	111
20	138	139	129	114	106	107	99	100	94	83	78	112
21	137	139	129	113	106	108	99	99	94	82	79	110
22	138	140	130	113	106	107	98	99	94	82	79	110
23	140	139	129	114	106	107	98	98	93	82	82	110
24	139	138	128	112	105	107	98	97	92	82	82	110
25	139	138	129	112	105	106	98	97	93	81	84	109
26	139	139	129	112	106	107	97	97	93	82	85	109
27	140	138	129	111	106	108	97	96	93	82	87	109
28	139	136	128	111	105	108	98	96	93	81	86	109
29	139	136	128	111	106	108	99	96	93	80	89	109
30	139	136	128	111	---	108	100	97	92	79	92	109
31	143	---	129	110	---	106	---	96	---	80	95	---
TOTAL	4388	4268	4053	3619	3112	3336	3037	3087	2830	2614	2502	3254
MEAN	142	142	131	117	107	108	101	99.6	94.3	84.3	80.7	108
MAX	146	149	136	126	109	109	106	102	97	93	95	112
MIN	137	136	128	110	105	106	97	96	92	79	76	98
AC-FT	8700	8470	8040	7180	6170	6620	6020	6120	5610	5180	4960	6450

CAL YR 1995 TOTAL 57844 MEAN 158 MAX 212 MIN 128 AC-FT 114700
WTR YR 1996 TOTAL 40100 MEAN 110 MAX 149 MIN 76 AC-FT 79540

08170500 SAN MARCOS RIVER AT SAN MARCOS, TX

LOCATION.--Lat 29°53'20", long 97°56'02", Hays County, Hydrologic Unit 12100203, on left bank at downstream side of bridge on Aquarena Springs Drive (Loop 82), 500 ft downstream from Spring Lake, and 4.2 mi upstream from Blanco River.

DRAINAGE AREA.--Flow of river comes from spring flow and from artesian wells; drainage area of streams not applicable.

PERIOD OF RECORD.--July 1915 to September 1921 (partial-record site), October 1994 to current year. May to September 1956, published as San Marcos River at San Marcos but record includes no runoff. October 1956 to September 1994 published as San Marcos River Springflow at San Marcos (station 08170000) which is at same site but records of springflow only. Periodic measurements of springflow were made at this location outside period of record since Nov. 14, 1894, and are published as miscellaneous measurements.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 557.6/ ft above sea level. July 1915 to January 1916, nonrecording gage at site 0.5 mi upstream from Interstate Highway 35, and Mar. 13, 1916 to Sept. 7, 1921, water-stage recorder about 0.7 mi downstream from Interstate Highway 35; datum relations unknown.

REMARKS.--No estimated daily discharges. Records fair. Entire flow of river is from San Marcos Springs, located about 1.1 mi upstream from Interstate Highway 35, except during periods of local runoff. San Marcos Springs emerge from the Edwards and associated limestones in the Balcones Fault Zone.

EXTREMES FOR WATER YEAR 1995.--Maximum discharge, 158 ft³/s Sept. 30 (gage height, 5.24 ft); minimum daily, 122 ft³/s Oct. 3.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 550 ft³/s Aug. 24 (gage height, 6.84 ft); minimum daily, 76 ft³/s Aug. 15, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1994 TO SEPTEMBER 1995
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	123	140	148	168	146	142	168	150	218	206	179	162
2	123	140	149	168	144	144	166	150	215	204	181	162
3	122	140	147	168	143	146	165	150	212	203	180	160
4	122	142	146	166	142	147	175	150	211	205	177	158
5	123	146	146	166	142	148	187	150	210	197	175	155
6	123	142	147	166	141	149	176	150	210	193	174	156
7	131	142	147	163	141	150	179	151	209	194	171	162
8	140	143	147	164	141	148	176	161	209	194	171	158
9	124	143	146	165	149	148	172	150	208	192	170	157
10	125	144	144	164	145	148	168	150	208	189	169	156
11	125	145	144	165	143	149	166	149	218	188	168	156
12	125	145	143	165	143	150	165	150	209	187	169	156
13	126	145	144	164	145	167	163	150	209	187	168	158
14	127	146	151	162	145	153	164	150	210	186	167	159
15	127	146	154	162	146	160	162	149	209	186	167	160
16	127	147	149	161	149	157	162	150	209	185	168	160
17	127	149	147	162	147	157	163	149	212	183	167	160
18	129	151	146	164	147	158	161	149	210	183	166	157
19	128	151	145	160	147	159	161	147	212	182	165	155
20	129	152	146	159	145	160	161	147	211	181	165	234
21	129	150	149	156	146	160	160	146	210	180	164	153
22	129	150	147	154	145	161	159	145	209	180	163	150
23	129	148	146	153	146	160	158	146	207	179	164	149
24	129	150	146	153	144	159	157	147	207	178	164	148
25	178	152	145	151	152	161	157	146	204	178	163	145
26	138	152	144	153	147	162	157	146	203	177	162	144
27	138	151	146	152	151	162	155	148	203	178	168	145
28	139	149	173	150	144	163	155	146	203	177	165	145
29	139	148	170	147	---	166	156	146	207	177	164	146
30	139	147	170	147	---	167	153	228	205	177	164	146
31	139	---	169	147	---	168	---	204	---	177	178	---
TOTAL	4052	4396	4641	4945	4066	4829	4927	4750	6277	5783	5236	4712
MEAN	131	147	150	160	145	156	164	153	209	187	169	157
MAX	178	152	173	168	152	168	187	228	218	206	181	234
MIN	122	140	143	147	141	142	153	145	203	177	162	144
AC-FT	8040	8720	9210	9810	8060	9580	9770	9420	12450	11470	10390	9350

WTR YR 1995 TOTAL 58614 MEAN 161 MAX 234 MIN 122 AC-FT 116300

08170500 SAN MARCOS RIVER AT SAN MARCOS, TX--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	176	136	127	109	107	105	101	97	93	80	110
2	146	150	135	124	109	107	104	101	97	92	79	110
3	146	148	134	124	109	106	105	102	97	90	79	109
4	146	148	134	125	108	106	105	102	96	90	79	108
5	146	148	133	123	109	108	106	102	96	88	79	108
6	145	149	132	122	109	108	105	100	95	87	79	108
7	145	148	131	121	109	107	104	101	97	87	78	109
8	145	147	132	121	109	107	103	101	95	86	78	108
9	144	148	131	122	109	108	102	101	94	85	79	108
10	143	148	130	120	109	108	103	101	94	85	78	109
11	142	144	131	118	107	108	104	101	94	86	78	109
12	142	144	132	118	107	109	104	101	94	86	78	109
13	142	143	131	118	108	109	104	101	95	86	78	110
14	140	142	132	117	108	109	102	100	95	85	82	110
15	140	141	131	116	107	109	100	101	95	83	76	111
16	140	141	131	116	107	109	101	101	95	83	76	109
17	140	142	132	116	107	109	100	101	94	83	77	109
18	140	140	131	114	108	108	100	101	94	83	78	109
19	140	139	129	114	107	107	99	100	94	82	77	111
20	138	139	129	114	106	107	99	100	94	83	78	112
21	137	139	129	113	106	108	99	99	94	82	79	110
22	141	140	130	113	106	107	98	99	94	82	79	110
23	140	139	129	114	106	107	98	98	93	82	83	110
24	139	138	128	112	105	107	98	97	92	82	112	113
25	139	138	129	112	105	106	98	97	93	81	88	109
26	139	139	129	112	106	107	97	97	93	82	88	109
27	140	138	129	111	106	108	97	96	93	82	87	109
28	139	136	128	111	105	108	98	96	93	81	86	109
29	139	136	128	111	108	108	102	96	93	80	89	109
30	139	136	128	111	---	108	100	97	92	79	146	109
31	150	---	129	110	---	106	---	96	---	80	106	---
TOTAL	4399	4304	4053	3620	3114	3336	3040	3087	2832	2616	2609	3283
MEAN	142	143	131	117	107	108	101	99.6	94.4	84.4	84.2	109
MAX	150	176	136	127	109	109	106	102	97	93	146	113
MIN	137	136	128	110	105	106	97	96	92	79	76	108
AC-FT	8730	8540	8040	7180	6180	6620	6030	6120	5620	5190	5170	6510

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1996, BY WATER YEAR (WY)

MEAN	136	145	140	138	126	132	133	126	152	135	127	133
MAX	142	147	150	160	145	156	164	153	209	187	169	157
(WY)	1996	1995	1995	1995	1995	1995	1995	1995	1995	1995	1995	1995
MIN	131	143	131	117	107	108	101	99.6	94.4	84.4	84.2	109
(WY)	1995	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1995 - 1996	
ANNUAL TOTAL	58281		40293			
ANNUAL MEAN	160		110		135	
HIGHEST ANNUAL MEAN					161	1995
LOWEST ANNUAL MEAN					110	1996
HIGHEST DAILY MEAN	234	Sep 20	176	Nov 1	234	Sep 20 1995
LOWEST DAILY MEAN	128	Dec 24	76	Aug 15	76	Aug 15 1996
ANNUAL SEVEN-DAY MINIMUM	128	Dec 24	77	Aug 15	77	Aug 15 1996
INSTANTANEOUS PEAK FLOW			550	Aug 24	785	Sep 20 1995
INSTANTANEOUS PEAK STAGE			6.84	Aug 24	7.72	Sep 20 1995
INSTANTANEOUS LOW FLOW			74	Aug 14	74	Aug 14 1996
ANNUAL RUNOFF (AC-FT)	115600		79920		98020	
10 PERCENT EXCEEDS	203		140		176	
50 PERCENT EXCEEDS	155		108		140	
90 PERCENT EXCEEDS	138		83		94	

08171000 BLANCO RIVER AT WIMBERLEY, TX

LOCATION.--Lat 29°59'39", long 98°05'19", Hays County, Hydrologic Unit 12100203, on left bank at downstream side of highway, near left end of bridge on Ranch Road 12, 0.3 mi southeast of Wimberley, 2,200 ft downstream from Cypress Creek, and at mile 29.0.

DRAINAGE AREA.--355 mi².

PERIOD OF RECORD.--August 1924 to September 1926, June 1928 to current year.
Water-quality records.--Chemical analyses: April 1962 to December 1973. Chemical, biochemical, and pesticide analyses: January 1974 to September 1979, February 1988 to September 1993. Sediment analyses: November 1965 to April 1966.

REVISED RECORDS.--WSP 1562: 1929, 1930-31(M), 1935-36(M), 1938(M), 1941-42(M), 1947(M), 1949(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 797.23 ft above sea level. Aug. 6, 1924, to Sept. 30, 1926, nonrecording gage at site 1,030 ft upstream at datum 5.00 ft higher. Recording gage from June 6, 1928, to June 12, 1975, at site 1,000 ft upstream at datum 5.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. There are many small diversions above station. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1869 reached a stage of 25 ft, from information by local residents. Maximum stage since at least 1869, that of May 28, 1929.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	145	31	28	21	22	20	21	21	17	9.1	82
2	44	77	31	27	22	20	20	21	18	14	9.1	54
3	40	58	31	26	21	21	20	21	25	14	9.1	42
4	39	51	31	26	21	21	20	21	18	12	8.2	47
5	39	47	31	26	21	23	25	20	15	11	8.0	42
6	38	44	31	26	23	22	26	20	13	11	8.6	35
7	37	42	30	25	24	20	22	21	20	9.4	8.4	31
8	36	40	30	25	23	19	21	20	20	9.6	8.2	29
9	37	39	30	25	23	20	22	21	17	10	7.6	32
10	36	40	28	25	23	19	23	22	16	10	7.9	34
11	35	38	28	26	23	19	22	20	16	11	8.0	34
12	35	36	29	25	21	21	21	20	16	10	8.9	31
13	35	37	29	25	21	25	21	20	14	8.6	8.5	30
14	34	36	29	26	21	24	21	20	13	8.9	18	29
15	32	36	29	26	22	20	19	20	13	7.8	22	32
16	32	35	29	25	21	20	18	19	13	9.5	11	28
17	33	37	30	26	21	22	18	19	13	9.4	9.9	25
18	32	37	31	25	21	20	20	18	11	11	9.5	23
19	32	36	28	23	22	19	20	18	11	12	11	22
20	32	35	28	25	21	18	18	17	11	9.9	8.6	28
21	30	35	28	25	21	19	18	17	10	11	8.1	25
22	31	35	28	25	21	19	19	18	12	9.1	11	23
23	32	35	28	25	22	20	19	17	14	8.8	18	22
24	30	33	28	24	21	21	17	16	16	9.1	45	21
25	30	33	28	23	21	19	17	16	29	9.6	41	26
26	31	33	28	24	21	18	18	18	35	11	32	22
27	31	33	28	24	21	21	18	34	26	12	25	21
28	31	32	28	22	19	20	20	29	21	10	23	19
29	29	30	27	24	23	19	36	20	19	10	27	18
30	29	29	28	24	---	20	22	20	18	9.8	28	18
31	43	---	29	22	---	20	---	19	---	9.5	68	---
TOTAL	1069	1274	902	773	626	631	621	623	514	326.0	525.7	925
MEAN	34.5	42.5	29.1	24.9	21.6	20.4	20.7	20.1	17.1	10.5	17.0	30.8
MAX	44	145	31	28	24	25	36	34	35	17	68	82
MIN	29	29	27	22	19	18	17	16	10	7.8	7.6	18
AC-FT	2120	2530	1790	1530	1240	1250	1230	1240	1020	647	1040	1830

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1996h, BY WATER YEAR (WY)

MEAN	102	82.9	118	124	163	148	173	220	208	99.5	48.9	89.2
MAX	872	509	1364	1134	1401	977	953	1470	1950	935	201	1413
(WY)	1974	1947	1992	1968	1992	1992	1957	1929	1987	1973	1973	1952
MIN	6.24	7.41	7.87	6.66	8.13	5.93	5.19	12.5	3.44	1.70	2.89	6.93
(WY)	1941	1956	1956	1956	1956	1956	1956	1956	1956	1956	1956	1928

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1924 - 1996h	
ANNUAL TOTAL	45697		8809.7			
ANNUAL MEAN	125		24.1		131	
HIGHEST ANNUAL MEAN					566	1992
LOWEST ANNUAL MEAN					6.45	1956
HIGHEST DAILY MEAN	4290	May 30	145	Nov 1	36900	Sep 11 1952
LOWEST DAILY MEAN	27	Dec 29	7.6	Aug 9	.70	Jul 17 1956
ANNUAL SEVEN-DAY MINIMUM	28	Dec 23	8.1	Aug 5	.79	Aug 12 1956
INSTANTANEOUS PEAK FLOW			228	Nov 1	113000	May 28 1929
INSTANTANEOUS PEAK STAGE			4.42	Nov 1	33.30	May 28 1929
ANNUAL RUNOFF (AC-FT)	90640		17470		94680	
10 PERCENT EXCEEDS	215		36		270	
50 PERCENT EXCEEDS	88		22		52	
90 PERCENT EXCEEDS	31		10		12	

h See PERIOD OF RECORD paragraph.

08171300 BLANCO RIVER NEAR KYLE, TX

LOCATION.--Lat 29°58'45", long 97°54'35", Hays County, Hydrologic Unit 12100203, on left bank 800 ft downstream from Tarbutton Ranch House (Hatchett Ranch), 2.2 mi southwest of Kyle, 4.2 mi downstream from Halifax Creek, and 6.3 mi upstream from bridge on U.S. Highway 81.

DRAINAGE AREA.--412 mi².

PERIOD OF RECORD.--May 1956 to current year.

REVISED RECORDS.--WSP 1923: 1957-58, 1960(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 620.12 ft above sea level (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good. Small diversions above station for irrigation. Most of the low flow of the Blanco River enters the Edwards and associated limestones in the Balcones Fault Zone which crosses the basin upstream from this station and below the station at Wimberley. Rain gage at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 40 ft in May 1929, from information by local residents (discharge, 139,000 ft³/s). Flood of Sept. 11, 1952, reached a stage of 38.0 ft (discharge, 115,000 ft³/s).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	122	24	23	16	18	10	8.1	2.2	.00	.00	72
2	37	98	25	21	17	17	9.8	4.5	2.9	.00	.00	34
3	32	57	25	20	18	15	9.9	4.0	2.9	.00	.00	14
4	25	46	24	20	19	15	10	4.2	5.7	.00	.00	7.7
5	25	42	24	20	18	16	14	3.9	4.2	.00	.00	7.2
6	24	38	23	20	17	17	22	3.7	1.0	.00	.00	4.9
7	24	35	23	20	18	14	18	3.6	.77	.00	.00	1.4
8	24	32	23	19	19	12	12	3.8	1.8	.00	.00	.26
9	24	31	23	20	19	12	11	3.8	2.2	.00	.00	.49
10	23	30	22	20	18	13	10	3.6	1.1	.00	.00	6.5
11	23	30	21	21	16	13	9.8	4.1	.18	.00	.00	6.3
12	22	28	22	20	15	12	9.9	4.5	.01	.00	.00	3.4
13	21	27	23	20	14	13	9.5	3.4	.00	.00	.00	1.7
14	20	28	22	20	14	14	8.6	2.4	.00	.00	.00	.73
15	19	28	22	20	14	16	7.0	1.6	.00	.00	.00	.85
16	18	27	22	20	15	14	5.9	.96	.00	.00	.00	1.2
17	19	29	22	19	14	15	5.4	.49	.00	.00	.00	.75
18	19	33	23	20	14	14	5.7	.23	.00	.00	.00	.06
19	19	29	23	19	15	11	5.6	.12	.00	.00	.00	.00
20	18	28	21	18	15	10	6.3	.02	.00	.00	.00	.00
21	16	27	21	18	14	9.8	5.1	.08	.00	.00	.00	2.0
22	17	27	23	20	13	10	5.0	.02	.00	.00	.00	1.6
23	18	27	23	20	13	10	6.0	.00	.00	.00	.00	.34
24	18	26	22	19	12	11	5.8	.00	.00	.00	.00	.09
25	17	26	22	18	13	11	4.5	.00	.00	.00	.00	.14
26	17	26	21	18	12	9.7	3.8	.00	.00	.00	.00	.00
27	19	26	21	17	12	13	3.3	6.6	.37	.00	.00	.08
28	18	25	21	17	12	14	4.2	28	2.8	.00	.00	.00
29	16	24	21	17	14	13	15	17	.87	.00	.00	.00
30	17	24	22	18	---	13	18	7.6	.04	.00	.00	.00
31	23	---	23	17	---	11	---	3.5	---	.00	12	---
TOTAL	660	1076	697	599	440	406.5	271.1	123.82	29.04	0.00	12.00	167.69
MEAN	21.3	35.9	22.5	19.3	15.2	13.1	9.04	3.99	.97	.000	.39	5.59
MAX	37	122	25	23	19	18	22	28	5.7	.00	12	72
MIN	16	24	21	17	12	9.7	3.3	.00	.00	.00	.00	.00
AC-FT	1310	2130	1380	1190	873	806	538	246	58	.00	24	333
CFSM	.05	.09	.05	.05	.04	.03	.02	.01	.00	.00	.00	.01
IN.	.06	.10	.06	.05	.04	.04	.02	.01	.00	.00	.00	.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1996, BY WATER YEAR (WY)

MEAN	128	102	157	158	204	169	179	249	282	104	43.2	55.0
MAX	1078	387	1775	1319	1511	1078	906	1148	2091	828	196	348
(WY)	1974	1958	1992	1968	1992	1992	1977	1958	1987	1973	1973	1986
MIN	.000	.000	.000	.000	.000	10.0	9.04	1.96	.000	.000	.000	.000
(WY)	1964	1964	1964	1957	1990	1967	1996	1964	1956	1956	1956	1956

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1956 - 1996	
ANNUAL TOTAL	45722		4482.15			
ANNUAL MEAN	125		12.2		153	
HIGHEST ANNUAL MEAN					625	1992
LOWEST ANNUAL MEAN					4.65	1964
HIGHEST DAILY MEAN	3940	May 30	122	Nov 1	19000	Dec 21 1991
LOWEST DAILY MEAN	16	Oct 21	.00	May 23	.00	Jun 1 1956
ANNUAL SEVEN-DAY MINIMUM	17	Oct 20	.00	Jun 13	.00	Jun 1 1956
INSTANTANEOUS PEAK FLOW			206	Nov 1	98000	May 2 1958
INSTANTANEOUS PEAK STAGE			5.77	Nov 1	36.30	May 2 1958
ANNUAL RUNOFF (AC-FT)	90690		8890		111000	
ANNUAL RUNOFF (CFSM)	.30		.030		.37	
ANNUAL RUNOFF (INCHES)	4.13		.40		5.05	
10 PERCENT EXCEEDS	227		25		320	
50 PERCENT EXCEEDS	84		12		51	
90 PERCENT EXCEEDS	23		.00		3.3	

08172000 SAN MARCOS RIVER AT LULING, TX

LOCATION.--Lat 29°39'58", long 97°39'02", Caldwell County line, Hydrologic Unit 12100203, at downstream side of bridge on State Highway 80, 0.9 mi south of U.S. Post Office at Luling, and 9.5 mi upstream from Plum Creek.

DRAINAGE AREA.--838 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1939 to current year.

REVISED RECORDS.--WSP 958: 1940. WSP 1312: 1940(M), 1945(M), 1947(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 322.05 ft above sea level. Prior to Oct. 21, 1988, at site 390 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow is affected at times by discharge from the flood-detention pools of 18 floodwater-retarding structures with a combined detention capacity of 26,830 acre-ft. These structures control runoff from 105 mi² in the Town and York Creeks drainage basins. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1859, 40.4 ft in 1869 or 1870, from information by State Department of Highways and Public Transportation. Flood of May 29, 1929, reached a stage of 37.1 ft and is the second highest known.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	176	213	149	148	130	132	106	106	74	79	63	529
2	173	295	151	146	129	127	105	91	77	79	63	315
3	188	246	155	142	129	123	105	95	89	77	64	228
4	171	205	146	142	127	120	107	95	102	74	64	195
5	169	192	150	141	128	121	102	97	89	70	65	174
6	170	187	147	141	129	122	114	92	84	72	64	163
7	162	184	145	140	130	116	126	93	96	68	64	148
8	156	177	146	137	129	115	106	89	144	68	63	140
9	164	169	144	138	129	107	113	86	103	67	62	138
10	165	168	141	138	131	112	115	86	90	69	64	128
11	167	164	142	139	126	122	109	86	84	83	64	123
12	162	162	145	138	124	111	106	89	79	84	63	121
13	160	160	147	138	123	118	105	91	79	77	63	120
14	157	163	146	139	125	119	106	89	76	73	67	119
15	156	161	151	138	126	107	100	85	76	72	68	144
16	153	159	151	138	119	113	97	80	77	74	92	139
17	151	161	156	138	120	112	97	80	77	71	69	120
18	149	162	158	136	124	112	93	79	73	66	64	119
19	152	163	148	140	126	109	92	76	71	66	67	686
20	144	161	149	128	126	109	93	79	73	65	66	686
21	144	160	139	145	123	106	92	80	69	62	64	745
22	145	157	144	129	119	103	91	78	77	63	65	372
23	147	155	145	136	121	108	93	78	92	64	73	189
24	145	155	145	145	118	109	91	75	89	66	148	154
25	142	156	144	132	119	108	94	72	105	74	392	529
26	143	154	145	132	117	106	90	73	88	80	675	338
27	144	156	147	127	119	116	89	75	91	66	202	211
28	142	154	142	129	117	115	88	84	82	68	136	154
29	140	152	144	132	122	107	120	86	82	69	112	130
30	145	149	148	134	---	110	142	79	81	67	214	120
31	150	---	149	128	---	107	---	74	---	65	729	---
TOTAL	4832	5200	4559	4254	3605	3522	3087	2618	2569	2198	4129	7477
MEAN	156	173	147	137	124	114	103	84.5	85.6	70.9	133	249
MAX	188	295	158	148	131	132	142	106	144	84	729	745
MIN	140	149	139	127	117	103	88	72	69	62	62	119
AC-FT	9580	10310	9040	8440	7150	6990	6120	5190	5100	4360	8190	14830

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1996, BY WATER YEAR (WY)

MEAN	323	316	376	374	449	388	463	550	587	288	200	278
MAX	1941	1404	3520	2286	3358	2438	1853	2054	4850	1203	515	1577
(WY)	1974	1975	1992	1968	1992	1992	1977	1975	1987	1973	1992	1952
MIN	59.7	63.1	82.1	77.5	81.0	73.8	78.5	84.5	58.5	58.9	63.7	64.4
(WY)	1956	1956	1955	1957	1952	1956	1956	1996	1956	1956	1984	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1939 - 1996	
ANNUAL TOTAL	126011		48050			
ANNUAL MEAN	345		131		384	
HIGHEST ANNUAL MEAN					1482	1992
LOWEST ANNUAL MEAN					75.3	1956
HIGHEST DAILY MEAN	7810	May 31	745	Sep 21	34800	Dec 22 1991
LOWEST DAILY MEAN	139	Dec 21	62	Jul 21	43	Aug 12 1951
ANNUAL SEVEN-DAY MINIMUM	143	Oct 24	63	Aug 7	53	Jun 2 1956
INSTANTANEOUS PEAK FLOW			1400	Aug 26	57000	Sep 12 1952
INSTANTANEOUS PEAK STAGE			9.98	Aug 26	34.95	Sep 12 1952
ANNUAL RUNOFF (AC-FT)	249900		95310		278000	
10 PERCENT EXCEEDS	529		164		679	
50 PERCENT EXCEEDS	246		121		202	
90 PERCENT EXCEEDS	149		69		90	

08172000 SAN MARCOS RIVER AT LULING, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1944 to February 1959, September 1961 to April 1966, November 1968 to current year. Pesticide analyses: June 1986 to current year. Sediment analyses: October 1960 to April 1966.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT 26...	1343	144	562	8.0	21.0	8.6	99	260	41	75
JAN 17...	1300	137	545	8.3	17.0	11.1	119	260	19	73
MAR 21...	1140	109	536	8.4	17.0	9.5	101	240	31	67
MAY 10...	1255	85	577	8.1	25.0	7.5	93	260	22	74
JUL 09...	1220	67	473	7.9	30.5	7.1	97	200	2	52
SEP 04...	1220	195	365	7.9	26.5	7.0	87	160	20	50

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 26...	18	16	0.4	2.0	220	26	25	0.20	7.4	302
JAN 17...	18	16	0.4	1.9	240	25	25	0.30	3.8	305
MAR 21...	18	18	0.5	1.8	210	28	27	0.20	5.2	179
MAY 10...	18	18	0.5	1.9	240	29	27	0.30	12	322
JUL 09...	17	19	0.6	1.9	200	28	28	0.30	14	279
SEP 04...	8.0	13	0.5	4.5	140	26	15	0.20	14	213

DATE	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-SYSTON TOTAL (UG/L)
OCT 26...	--	--	--	--	--	--	--	--	--	--
JAN 17...	--	--	--	--	--	--	--	--	--	--
MAR 21...	--	--	--	--	--	--	--	--	--	--
MAY 10...	--	--	--	--	--	--	--	--	--	--
JUL 09...	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01	<0.010	<0.01
SEP 04...	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
OCT 26...	--	--	--	--	--	--	--	--	--	--
JAN 17...	--	--	--	--	--	--	--	--	--	--
MAR 21...	--	--	--	--	--	--	--	--	--	--
MAY 10...	--	--	--	--	--	--	--	--	--	--
JUL 09...	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01
SEP 04...	--	--	--	--	--	--	--	--	--	--

08172000 SAN MARCOS RIVER AT LULING, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
OCT									
26...	--	--	--	--	--	--	--	--	--
JAN									
17...	--	--	--	--	--	--	--	--	--
MAR									
21...	--	--	--	--	--	--	--	--	--
MAY									
10...	--	--	--	--	--	--	--	--	--
JUL									
09...	<0.01	<0.1	<0.01	<0.01	<1	<0.01	<0.01	<0.01	<0.01
SEP									
04...	--	--	--	--	--	--	--	--	--

08172400 PLUM CREEK AT LOCKHART, TX

LOCATION.--Lat 29°55'22", long 97°40'44", Caldwell County, Hydrologic Unit 12100203, on right bank 548 ft upstream from bridge on U.S. Highway 183, 2.7 mi north of Lockhart, 3.7 mi upstream from Town Creek, 5.0 mi downstream from Brushy Creek, and 30.4 mi upstream from mouth.

DRAINAGE AREA.--112 mi².

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

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 431.19 ft above sea level. Apr. 30, 1959, to July 25, 1968, at site 548 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. No known diversion above station. Flow is affected at times by discharge from the flood-detention pools of 17 floodwater-retarding structures with a combined capacity of 24,850 acre-ft. These structures control runoff from 67.8 mi² above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1905, 22 ft in June 1936 at present site; flood in 1951 reached a stage of 20 ft at present site, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.02	3.2	.00	.00	.00	30
2	.00	.00	.00	.00	.00	.00	.01	.75	.00	.00	.00	11
3	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	1.5
4	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.09
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	15
11	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	2.6
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.24
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.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	112
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	61
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	20
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	12
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.3
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	23
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	19
27	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00	12
28	.00	.00	.00	.00	.00	.56	.00	.00	.00	.00	.00	7.5
29	.00	.00	.00	.00	.00	.98	138	.00	.00	.00	.00	4.6
30	.00	.00	.00	.00	---	1.0	11	.00	.00	.00	.00	2.8
31	.00	---	.00	.00	---	.13	---	.00	---	.00	9.5	---
TOTAL	0.00	0.00	0.00	0.00	0.00	2.83	149.43	4.11	0.00	0.00	9.50	342.64
MEAN	.000	.000	.000	.000	.000	.091	4.98	.13	.000	.000	.31	11.4
MAX	.00	.00	.00	.00	.00	1.0	138	3.2	.00	.00	9.5	112
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	5.6	296	8.2	.00	.00	19	680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1996, BY WATER YEAR (WY)

MEAN	43.9	44.0	56.8	47.4	67.4	37.4	45.2	107	97.5	11.5	4.32	10.2
MAX	595	590	605	416	815	332	343	595	905	151	118	142
(WY)	1961	1986	1992	1968	1992	1992	1976	1975	1981	1985	1974	1974
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1964	1964	1964	1964	1989	1964	1967	1971	1963	1963	1962	1959

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1959 - 1996	
ANNUAL TOTAL	15203.62		508.51			
ANNUAL MEAN	41.7		1.39		48.0	
HIGHEST ANNUAL MEAN					238	1992
LOWEST ANNUAL MEAN					.10	1978
HIGHEST DAILY MEAN	2810	Mar 13	138	Apr 29	10100	Oct 29 1960
LOWEST DAILY MEAN	.00	Jul 13	.00	Oct 1	.00	Jun 23 1959
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 13	.00	Oct 1	.00	Jul 9 1959
INSTANTANEOUS PEAK FLOW			534	Apr 29	27700	Nov 24 1985
INSTANTANEOUS PEAK STAGE			10.13	Apr 29	20.89	Nov 24 1985
ANNUAL RUNOFF (AC-FT)	30160		1010		34750	
10 PERCENT EXCEEDS	38		.01		56	
50 PERCENT EXCEEDS	1.0		.00		.50	
90 PERCENT EXCEEDS	.00		.00		.00	

08175000 SANDIES CREEK NEAR WESTHOFF, TX

LOCATION.--Lat 29°12'54", long 97°26'57", De Witt County, Hydrologic Unit 12100202, on left bank 100 ft downstream from bridge on county highway, 1.9 mi upstream from Birds Creek, 2.0 mi northeast of Westhoff, and 20.4 mi upstream from mouth.

DRAINAGE AREA.--549 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1930 to November 1934, August 1959 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 178.27 ft above sea level. Prior to Nov. 9, 1934, water-stage recorder at site 150 ft upstream at datum 0.86 ft higher. Aug. 10, 1959, to Feb. 2, 1960, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. No known diversion above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1864, 92,700 ft³/s July 2, 1936 (gage height, 33.1 ft, from floodmarks), on basis of computation of peak flow, at present site and datum. Flood in October 1913 reached a stage of 26.0 ft, present site and datum, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 10	1000	3,120	20.81	Sept. 21	1600	2,980	20.63

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	4.6	6.2	8.9	5.8	15	7.2	4.9	1.3	4.4	1.6	700
2	3.7	5.5	6.0	9.1	5.9	15	6.9	4.7	1.5	3.2	1.3	318
3	5.6	4.5	6.1	9.1	6.3	12	6.9	4.6	1.8	2.3	1.2	275
4	21	3.8	6.9	8.8	6.5	10	7.3	4.6	4.7	1.5	1.1	154
5	25	3.2	7.4	7.7	6.4	8.7	6.8	4.2	7.4	1.2	1.1	47
6	15	3.5	7.7	6.3	6.4	8.0	6.7	4.2	4.3	.91	1.0	26
7	13	3.7	7.6	6.5	6.8	7.9	5.8	4.3	2.7	.79	.95	23
8	6.8	3.6	7.1	6.5	6.9	7.8	5.8	4.2	2.9	.66	1.1	510
9	4.1	3.4	6.7	6.7	6.5	6.6	5.9	4.1	2.6	.56	1.4	1220
10	3.0	3.6	6.7	6.7	7.4	5.7	6.1	3.5	1.9	27	1.4	2830
11	2.6	3.5	6.4	7.1	7.5	5.3	6.1	3.2	1.6	14	1.3	1460
12	2.3	3.3	6.7	7.4	8.2	5.3	6.5	3.0	1.3	4.1	1.2	321
13	2.2	3.2	7.6	7.6	7.3	5.6	6.6	2.7	1.1	1.8	1.3	81
14	1.5	3.2	7.8	8.0	6.3	5.6	5.7	2.4	1.4	1.1	1.3	40
15	1.4	3.3	8.1	8.1	5.4	6.6	4.2	2.2	.98	.85	1.5	68
16	1.5	3.8	9.5	8.5	4.7	6.7	3.9	1.9	.54	.80	1.7	266
17	1.5	5.5	18	8.7	4.3	6.6	3.8	1.3	.89	.71	2.4	218
18	1.6	7.4	29	8.2	5.6	6.0	3.8	.70	.37	.67	2.4	93
19	1.7	13	170	7.3	4.6	6.2	3.7	.84	.30	.59	1.8	50
20	1.6	14	204	7.0	4.6	5.7	3.9	1.1	.39	.52	1.7	1390
21	1.4	12	173	6.9	4.7	5.5	3.5	1.2	.55	.57	1.4	2650
22	1.4	10	75	6.3	5.0	5.7	3.0	1.3	.54	.86	3.3	2170
23	1.3	9.7	49	6.3	4.9	5.8	3.7	.94	.85	.95	7.6	844
24	1.1	8.1	38	6.5	5.0	6.3	3.2	.81	.98	.96	31	150
25	.95	7.4	29	6.3	4.8	6.7	2.9	1.0	155	.95	162	81
26	1.1	7.0	24	6.4	4.6	6.3	2.7	1.2	202	59	127	62
27	1.4	6.0	18	6.2	4.5	6.6	2.8	1.0	50	82	133	46
28	2.3	5.8	13	6.6	4.0	6.8	2.7	.83	12	22	169	51
29	2.7	6.0	11	6.4	7.7	6.2	3.3	.92	8.8	12	110	28
30	3.1	6.0	10	6.5	---	6.9	3.9	.91	5.4	4.4	164	17
31	2.9	---	10	5.9	---	7.1	---	.97	---	2.7	470	---
TOTAL	137.25	177.6	985.5	224.5	168.6	226.2	145.3	73.72	476.09	254.05	1407.05	16189
MEAN	4.43	5.92	31.8	7.24	5.81	7.30	4.84	2.38	15.9	8.20	45.4	540
MAX	25	14	204	9.1	8.2	15	7.3	4.9	202	82	470	2830
MIN	.95	3.2	6.0	5.9	4.0	5.3	2.7	.70	.30	.52	.95	17
AC-FT	272	352	1950	445	334	449	288	146	944	504	2790	32110
CFSM	.01	.01	.06	.01	.01	.01	.01	.00	.03	.01	.08	.98
IN.	.01	.01	.07	.02	.01	.02	.01	.00	.03	.02	.10	1.10

08175000 SANDIES CREEK NEAR WESTHOFF, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1996h, BY WATER YEAR (WY)

MEAN	108	66.3	63.8	121	147	69.0	153	261	285	30.6	22.7	211
MAX	1719	470	969	778	1485	418	1361	2062	2820	139	248	4060
(WY)	1961	1961	1977	1974	1992	1969	1977	1972	1987	1961	1933	1967
MIN	.26	1.19	1.85	4.08	4.05	2.66	3.26	.88	.32	.23	.071	.26
(WY)	1964	1932	1989	1967	1967	1967	1963	1963	1934	1964	1962	1959

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1930 - 1996h	
ANNUAL TOTAL	21124.95		20464.86			
ANNUAL MEAN	57.9		55.9		130	
HIGHEST ANNUAL MEAN					532	1992
LOWEST ANNUAL MEAN					8.71	1988
HIGHEST DAILY MEAN	2740	Mar 15	2830	Sep 10	67900	Sep 22 1967
LOWEST DAILY MEAN	.95	Oct 25	.30	Jun 19	.00	Aug 11 1932
ANNUAL SEVEN-DAY MINIMUM	1.2	Oct 21	.51	Jun 16	.00	Aug 18 1959
INSTANTANEOUS PEAK FLOW			3120	Sep 10	c79700	Sep 22 1967
INSTANTANEOUS PEAK STAGE			20.81	Sep 10	32.34	Sep 22 1967
ANNUAL RUNOFF (AC-FT)	41900		40590		94220	
ANNUAL RUNOFF (CFSM)	.11		.10		.24	
ANNUAL RUNOFF (INCHES)	1.43		1.39		3.22	
10 PERCENT EXCEEDS	99		53		117	
50 PERCENT EXCEEDS	9.7		5.7		9.0	
90 PERCENT EXCEEDS	2.7		1.0		1.3	

c From rating curve extended above 21,000 ft³/s on basis of slope-area measurement of 92,700 ft³/s.
h See PERIOD OF RECORD paragraph.

08175000 SANDIES CREEK NEAR WESTHOFF, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1962 to current year. Sediment analyses: November 1965 to May 1966. Pesticide analyses October 1992 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT										
25...	1350	1.3	1400	7.9	19.5	3.8	41	110	0	35
FEB										
13...	0930	8.7	1430	8.4	11.5	9.3	84	130	0	42
MAY										
07...	0840	4.0	2150	8.1	25.0	7.8	97	130	0	39
AUG										
02...	1023	1.6	1050	7.9	27.5	7.0	--	72	0	23
14...	1500	1.8	1930	8.1	29.0	3.7	49	95	0	30
SEP										
12...	1445	217	170	7.3	26.5	5.2	65	39	0	12

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT										
25...	6.3	250	10	13	300	38	200	0.60	19	739
FEB										
13...	7.1	240	9	12	320	58	220	0.80	11	780
MAY										
07...	7.1	410	16	13	490	35	390	1.2	14	1200
AUG										
02...	3.6	190	10	11	270	36	140	0.80	18	584
14...	4.8	380	17	14	460	26	330	1.4	19	1080
SEP										
12...	2.1	16	1	7.0	50	11	10	0.10	19	107

08175800 GUADALUPE RIVER AT CUERO, TX

LOCATION.--Lat 29°03'57", long 97°19'16", De Witt County, Hydrologic Unit 12100204, on left bank at downstream side of bridge on U.S. Highways 77A, 87, and 183, 2.1 mi upstream from Gohlke Creek, 2.4 mi southwest of Cuero, 4.2 mi downstream from Sandies Creek, and at mile 100.6.

DRAINAGE AREA.--4,934 mi², of which 1,432 mi² is above Canyon Dam.

PERIOD OF RECORD.--December 1902 to December 1906, August 1916 to December 1935, and January 1964 to current year. Published as "near Cuero" 1902-6, and as "below Cuero" 1916-35. Gage-height records collected at site 7.1 mi upstream from Sandies Creek from 1941 to 1966 (published in reports of the National Weather Service) and at present site since June 12, 1968.
Water-quality records.--Chemical analyses: March 1968 to September 1985.

REVISED RECORDS.--WRD TX-68-1, TX-69-1: Drainage areas at all sites.

GAGE.--Water-stage recorder. Datum of gage is 128.64 ft above sea level. From Dec. 26, 1902, to June 1903, nonrecording gage at site 7.1 mi upstream at different datum (gage heights adjusted to site 3.3 mi upstream from present site before computation); from July 1903 to December 1906, nonrecording gage 3.3 mi upstream at different datum; and Aug. 19, 1916, to Dec. 16, 1935, water-stage recorder at site 5.0 mi downstream at datum 3.19 ft lower.

REMARKS.--No estimated daily discharges. Records good. Since July 21, 1962, flow regulated by Canyon Lake (station 08167700) 202.4 mi upstream. Flow below New Braunfels is partly regulated by a series of small power dams, combined capacity of six largest dams 33,550 acre-ft. Flow is affected at times by discharge from the flood-detention pools of 53 floodwater-retarding structures with a combined detention capacity of 87,200 acre-ft. These structures control runoff from 302 mi² in the Comal, San Marcos, and Plum Creek drainage basins. Many small diversions above station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--20 years (water years 1904-6, 1917, 1918, 1921-35) prior to regulation by Canyon Lake, 1,303 ft³/s (944,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1904-6, 1917-18, 1921-35).--Maximum discharge, 101,000 ft³/s May 30, 1929 (gage height, 35.2 ft), from rating curve extended above 44,700 ft³/s: minimum daily, 165 ft³/s Nov. 4, 1917. The maximum stage since at least 1900 occurred on Mar. 1, 1903, at 43.0 ft (at different site and datum), but discharge was not determined. Other floods occurred on Oct. 20, 1919, 32.2 ft (site and datum then in use), and May 30, 1929, 35.2 ft (site and datum then in use), from information by local residents.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 probably occurred July 2, 1936, 44.33 ft, present site and datum, from information by State Department of Highways and Public Transportation. Other floods at this station occurred Oct. 4, 1913, 37.57 ft, at different site and datum; Dec. 6, 1913, 34.57 ft, at different site and datum; June 21, 1961, 37.0 ft, present site and datum; all from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	571	457	678	620	667	602	614	520	343	280	125	1700
2	554	627	686	665	666	615	812	733	351	232	158	2120
3	677	595	685	713	577	623	818	557	318	315	148	1540
4	685	823	661	738	644	665	469	371	283	195	92	1380
5	726	763	798	618	743	636	355	397	298	230	96	661
6	691	869	668	620	759	460	358	470	297	224	88	481
7	598	624	827	678	657	583	499	422	251	224	164	387
8	637	717	604	697	552	573	520	476	240	174	127	1620
9	630	911	693	665	450	621	581	430	251	82	100	3040
10	469	578	744	596	553	536	627	483	416	76	78	2710
11	655	668	770	665	631	535	531	377	319	113	78	3120
12	625	735	569	659	628	521	584	415	311	102	71	2160
13	647	588	767	691	550	771	501	378	284	139	46	680
14	561	664	628	651	620	659	483	401	254	203	40	528
15	469	593	642	597	585	418	465	555	229	97	41	465
16	433	686	741	637	566	467	420	495	239	73	40	733
17	440	603	770	773	596	496	532	437	234	74	41	761
18	625	852	968	691	606	456	636	393	330	111	40	587
19	511	693	1070	582	555	602	340	304	383	136	88	547
20	377	615	1000	671	559	740	364	413	301	176	162	3740
21	450	792	1100	587	618	499	397	430	126	92	62	10600
22	587	675	824	571	702	514	443	318	207	93	73	8900
23	417	708	811	596	651	556	429	343	214	209	165	5090
24	577	665	620	669	639	598	452	314	157	209	170	1950
25	465	636	561	595	621	495	515	318	117	88	181	887
26	536	710	676	622	587	609	343	302	354	86	744	768
27	563	585	696	672	500	608	374	291	457	107	1130	911
28	368	732	685	649	616	462	468	213	362	154	1290	883
29	543	684	732	642	571	426	445	131	341	119	788	750
30	497	615	649	558	---	463	537	294	331	105	1200	460
31	520	---	675	644	---	546	---	360	---	165	1330	---
TOTAL	17104	20463	22998	20032	17669	17355	14912	12341	8598	4683	8956	60159
MEAN	552	682	742	646	609	560	497	398	287	151	289	2005
MAX	726	911	1100	773	759	771	818	733	457	315	1330	10600
MIN	368	457	561	558	450	418	340	131	117	73	40	387
AC-FT	33930	40590	45620	39730	35050	34420	29580	24480	17050	9290	17760	119300

08175800 GUADALUPE RIVER AT CUERO, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1996#, BY WATER YEAR (WY)

MEAN	1458	1564	1772	1926	2211	1826	2221	3160	3276	1419	1138	1748
MAX	9585	5023	10500	10830	16740	10370	11100	12270	21470	6342	4149	11210
(WY)	1974	1977	1992	1992	1992	1992	1977	1972	1987	1987	1987	1981
MIN	242	411	432	397	403	504	381	309	242	95.7	112	124
(WY)	1990	1990	1990	1990	1990	1967	1971	1984	1984	1984	1984	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1964 - 1996#	
ANNUAL TOTAL	490636		225270			
ANNUAL MEAN	1344		615		2008	
HIGHEST ANNUAL MEAN					6885	1992
LOWEST ANNUAL MEAN					435	1984
HIGHEST DAILY MEAN	13500	Jun 3	10600	Sep 21	112000	Sep 1 1981
LOWEST DAILY MEAN	368	Oct 28	40	Aug 14	28	Jul 22 1984
ANNUAL SEVEN-DAY MINIMUM	459	Aug 23	46	Aug 12	45	Jul 18 1984
INSTANTANEOUS PEAK FLOW			11900	Sep 21	132000	Sep 1 1981
INSTANTANEOUS PEAK STAGE			18.36	Sep 21	41.83	Sep 1 1981
INSTANTANEOUS LOW FLOW			38	Aug 16		
ANNUAL RUNOFF (AC-FT)	973200		446800		1454000	
10 PERCENT EXCEEDS	2100		789		3440	
50 PERCENT EXCEEDS	979		557		1040	
90 PERCENT EXCEEDS	535		134		460	

Period of regulated streamflow.

08176500 GUADALUPE RIVER AT VICTORIA, TX

LOCATION.--Lat 28°47'34", long 97°00'46", Victoria County, Hydrologic Unit 12100204, on left bank near left downstream corner of downstream bridge of two bridges on U.S. Highway 59 in Victoria, 1,200 ft upstream from Southern Pacific Railroad Co. bridge, 15 mi upstream from Coleto Creek, and at mile 50.7.

DRAINAGE AREA.--5,198 mi², of which 1,432 mi² is above Canyon Dam.

PERIOD OF RECORD.--November 1934 to current year. Gage-height records collected in this vicinity since 1904 are contained in reports of the National Weather Service.
Water-quality records.--Chemical analyses: August 1945 to August 1994. Chemical and biochemical analyses: January 1968 to August 1994. Pesticide analyses: February 1974 to August 1981. Sediment analyses: April 1959, August 1973 to August 1994. Specific conductance: October 1945 to September 1981. Water temperature: November 1950 to September 1981.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 29.15 ft above sea level. Nov. 1, 1934, to July 27, 1992, at site just upstream from pier on left bank of upstream bridge at same datum.

REMARKS.--No estimated daily discharges. Records good. Since July 21, 1962, flow partially regulated by Canyon Lake (station 08167700) 252.3 mi upstream. There are many diversions above station. Records provided by the city of Victoria show that during the current year about 7,350 acre-ft of wastewater effluent was released into the river below this station. For statement regarding regulation by Soil Conservation Service flood-water-retarding structures, see station 08175000. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--27 years (water years 1936-62) prior to regulation by Canyon Lake, 1,626 ft³/s (1,178,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1936-62).--Maximum discharge, 179,000 ft³/s July 3, 1936 (gage height, 31.22 ft); minimum daily, 14 ft³/s Aug. 20, 1956. Maximum stage since at least 1833, that of July 3, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1929, reached a stage of 30.2 ft, present site and datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	686	594	631	669	619	537	537	492	338	320	106	1200
2	616	529	682	626	625	564	562	497	343	297	158	1620
3	685	641	685	661	640	566	722	636	354	231	121	1740
4	729	648	699	706	574	588	706	532	326	236	155	1350
5	752	789	653	696	628	615	486	379	301	250	143	1170
6	760	761	766	618	704	577	380	385	274	209	101	651
7	744	833	688	636	708	455	374	461	290	216	93	493
8	631	626	767	664	633	502	470	422	267	216	99	845
9	699	762	617	677	560	520	505	456	229	211	155	2800
10	659	817	655	607	479	564	542	424	231	151	132	2710
11	534	598	702	604	557	513	582	453	361	110	104	2650
12	688	673	735	661	615	514	510	387	313	107	83	2650
13	682	648	611	648	609	510	550	396	309	122	73	1510
14	690	630	723	673	556	665	478	361	293	113	88	739
15	618	684	643	638	604	598	474	362	271	165	64	554
16	527	615	636	589	574	433	456	498	239	175	47	527
17	489	747	858	619	554	456	400	464	242	109	46	781
18	504	680	798	726	576	480	479	402	248	89	47	786
19	679	851	914	654	587	442	545	377	264	85	39	596
20	560	688	1020	579	546	586	375	327	374	108	38	618
21	420	648	899	650	542	637	354	335	311	172	68	6130
22	496	784	1030	592	590	490	376	391	250	142	150	9470
23	632	684	796	578	658	497	420	361	210	103	99	7100
24	489	719	769	597	618	540	406	255	248	100	182	3910
25	610	658	641	641	611	557	421	333	285	240	265	1570
26	523	664	591	594	586	485	454	299	442	161	251	1170
27	591	708	654	611	555	587	360	285	582	104	826	909
28	589	609	668	635	487	583	338	271	489	118	1110	969
29	453	709	667	629	557	479	461	255	384	131	1160	934
30	632	699	734	629	---	441	438	171	339	140	903	743
31	557	---	654	559	---	457	---	192	---	121	1310	---
TOTAL	18924	20696	22586	19666	17152	16438	14161	11859	9407	5052	8216	58895
MEAN	610	690	729	634	591	530	472	383	314	163	265	1963
MAX	760	851	1030	726	708	665	722	636	582	320	1310	9470
MIN	420	529	591	559	479	433	338	171	210	85	38	493
AC-FT	37540	41050	44800	39010	34020	32600	28090	23520	18660	10020	16300	116800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1996, BY WATER YEAR (WY)

MEAN	1527	1566	1767	1975	2253	1898	2278	3207	3401	1519	1148	1804
MAX	10550	5101	9753	10650	17250	10600	10320	12230	23750	6759	4473	11340
(WY)	1974	1977	1992	1992	1992	1992	1977	1972	1987	1987	1987	1981
MIN	213	398	452	420	421	512	430	367	280	111	105	125
(WY)	1964	1990	1990	1990	1990	1967	1971	1971	1967	1984	1984	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1963 - 1996	
ANNUAL TOTAL	502304		223052			
ANNUAL MEAN	1376		609		2024	
HIGHEST ANNUAL MEAN					6993	1992
LOWEST ANNUAL MEAN					479	1984
HIGHEST DAILY MEAN	11200	Jun 4	9470	Sep 22	86900	Sep 3 1981
LOWEST DAILY MEAN	420	Oct 21	38	Aug 20	38	Aug 20 1996
ANNUAL SEVEN-DAY MINIMUM	525	Oct 16	50	Aug 15	50	Aug 15 1996
INSTANTANEOUS PEAK FLOW			9760	Sep 22	105000	Sep 2 1981
INSTANTANEOUS PEAK STAGE			22.71	Sep 22	31.10	Sep 2 1981
INSTANTANEOUS LOW FLOW			36	Aug 21	36	Aug 21 1996
ANNUAL RUNOFF (AC-FT)	996300		442400		1467000	
10 PERCENT EXCEEDS	2050		787		3790	
50 PERCENT EXCEEDS	1030		557		1070	
90 PERCENT EXCEEDS	607		151		465	

08176550 FIFTEENMILE CREEK NEAR WESER, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 28°53'51", long 97°21'17", De Witt County, Hydrologic Unit 12100204, at DeWitt-Goliad County line, on left downstream end of bridge on U.S. Highway 183, and 2.4 mi northeast of Weser.

DRAINAGE AREA.--167 mi².

PERIOD OF RECORD.--October 1984 to September 1989 (daily mean discharge), October 1989 to current year (peak discharges greater than base discharge).

GAGE.--Water-stage recorder. Datum of gage is 158.40 ft above sea level.

REMARKS.--Records poor. No known diversions above station.

AVERAGE DISCHARGE.--5 years (water years 1985-89), 18.7 ft³/s (13,550 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,560 ft³/s Apr. 17, 1992 (gage height, 17.41 ft), from rating curve extended above 1,480 ft³/s; minimum daily, no flow for several days in 1989.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

08176900 COLETO CREEK AT ARNOLD ROAD CROSSING NEAR SCHROEDER, TX

LOCATION.--Lat 28°51'41", long 97°13'34", Goliad County, Hydrologic Unit 12100204, on right bank at downstream side of Arnold Road Crossing, 0.7 mi downstream from confluence of Twelvemile and Fifteenmile Creeks, 3.2 mi north of Schroeder, 12.8 mi upstream from Coleto Creek Reservoir, and 26.0 mi upstream from mouth.

DRAINAGE AREA.--357 mi².

PERIOD OF RECORD.--October 1978 to current year. Records equivalent for January 1930 to December 1933 and October 1952 to September 1979, published as "near Schroeder".

GAGE.--Water-stage recorder. Datum of gage is 100.43 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. No known diversions above station. Radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharges since at least 1872 at site 3.5 mi downstream, 122,000 ft³/s Sept. 21, 1967 (slope-area measurement of peak flow), 63,700 ft³/s Oct. 16, 1946, and 46,700 ft³/s in October 1925, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.02	.38	3.3	2.8	3.0	2.8	.95	.00	2.1	.00	.00
2	.17	.03	.40	3.3	2.8	3.1	2.6	.89	.00	1.8	.00	.00
3	.18	.09	.40	3.1	2.8	3.1	2.4	.85	.00	1.4	.00	.00
4	.17	.13	.40	2.8	2.8	3.1	2.3	.78	.00	1.1	.00	.00
5	.15	.15	.40	2.8	2.8	3.1	2.1	.70	.00	.88	.00	.00
6	.13	.16	.40	2.7	2.8	3.1	2.1	.69	.00	.64	.00	.00
7	.11	.22	.38	2.7	2.9	2.9	2.1	.63	.00	.45	.00	.00
8	.10	.22	.37	2.7	2.9	2.7	2.0	.57	.00	.28	.00	.04
9	.10	.23	.37	2.8	2.8	2.7	1.9	.52	.00	.20	.00	.26
10	.09	.25	.39	2.7	2.9	2.7	1.9	.45	.00	.13	.00	5.5
11	.07	.25	.41	2.9	2.9	2.7	1.8	.39	.00	.08	.00	13
12	.07	.26	.42	2.8	2.8	2.7	1.8	.35	.00	.04	.00	6.4
13	.07	.27	.42	2.8	2.7	2.8	1.7	.29	.00	.01	.00	4.3
14	.07	.26	.42	2.8	2.7	2.8	1.7	.23	.00	.00	.00	3.2
15	.05	.26	.41	2.8	2.7	2.7	1.5	.18	.00	.00	.00	2.5
16	.04	.26	.43	2.8	2.6	2.7	1.4	.15	.00	.00	.00	2.0
17	.02	.36	8.0	2.8	2.5	2.7	1.4	.12	.00	.00	.00	1.8
18	.02	.41	12	2.8	2.6	2.7	1.3	.09	.00	.00	.00	1.5
19	.02	.43	5.9	2.8	2.6	2.6	1.3	.07	.00	.00	.00	1.5
20	.01	.44	4.4	2.8	2.6	2.5	1.2	.05	.00	.00	.00	236
21	.00	.43	4.4	2.8	2.5	2.5	1.1	.03	.00	.00	.00	486
22	.00	.40	5.5	2.8	2.6	2.5	1.1	.01	.00	.00	.00	215
23	.00	.40	4.7	2.9	2.6	2.4	1.1	.00	.00	.00	.00	57
24	.00	.39	4.1	2.8	2.6	2.5	.96	.00	.00	.00	.00	22
25	.00	.40	3.8	2.8	2.6	2.5	.89	.00	.00	.00	.00	14
26	.00	.40	3.6	2.9	2.6	2.5	.88	.00	7.8	.00	.00	10
27	.00	.40	3.4	2.9	2.6	2.5	.84	.00	22	.00	.00	7.6
28	.00	.38	3.4	2.8	2.6	2.7	.79	.00	5.6	.00	.00	5.9
29	.02	.38	3.3	2.9	2.8	2.9	.92	.00	3.6	.00	.00	5.0
30	.04	.38	3.4	3.0	---	3.7	.96	.00	2.6	.00	.00	4.3
31	.02	---	3.4	2.9	---	3.2	---	.00	---	.00	.00	---
TOTAL	1.92	8.66	79.70	88.5	78.5	86.3	46.84	8.99	41.60	9.11	0.00	1104.80
MEAN	.062	.29	2.57	2.85	2.71	2.78	1.56	.29	1.39	.29	.000	36.8
MAX	.20	.44	12	3.3	2.9	3.7	2.8	.95	22	2.1	.00	486
MIN	.00	.02	.37	2.7	2.5	2.4	.79	.00	.00	.00	.00	.00
AC-FT	3.8	17	158	176	156	171	93	18	83	18	.00	2190

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1996, BY WATER YEAR (WY)

MEAN	69.1	43.3	44.1	59.6	76.0	48.2	102	134	143	28.6	24.2	26.3
MAX	648	357	301	400	486	153	765	608	765	114	309	183
(WY)	1995	1983	1987	1979	1992	1984	1992	1979	1987	1990	1981	1981
MIN	.046	.049	.94	2.62	2.71	2.78	1.56	.29	.73	.14	.000	.000
(WY)	1989	1990	1990	1990	1996	1996	1996	1996	1990	1989	1996	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1979 - 1996	
ANNUAL TOTAL	4064.79		1554.92			
ANNUAL MEAN	11.1		4.25		66.3	
HIGHEST ANNUAL MEAN					172	1992
LOWEST ANNUAL MEAN					2.47	1989
HIGHEST DAILY MEAN	450	Jan 13	486	Sep 21	11700	Oct 18 1994
LOWEST DAILY MEAN	.00	Oct 21	.00	Oct 21	.00	Aug 20 1989
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 21	.00	Oct 21	.00	Aug 20 1989
INSTANTANEOUS PEAK FLOW			772	Sep 20	32500	Aug 31 1981
INSTANTANEOUS PEAK STAGE			8.43	Sep 20	24.13	Oct 18 1994
ANNUAL RUNOFF (AC-FT)	8060		3080		48030	
10 PERCENT EXCEEDS	20		3.3		59	
50 PERCENT EXCEEDS	2.5		.43		11	
90 PERCENT EXCEEDS	.17		.00		.89	

08177300 PERDIDO CREEK AT FARM ROAD 622 NEAR FANNIN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 28°45'05", long 97°19'01", Goliad County, Hydrologic Unit 12100204, at right downstream end of bridge on Farm Road 622, 1.2 mi downstream from Farmer Creek, 3.1 mi upstream from Kilgore Creek, and 6.1 mi northwest of Fannin.

DRAINAGE AREA.--28.0 mi^2.

PERIOD OF RECORD.--June 1978 to September 1991 (daily mean discharge); October 1991 to current year (peak discharges greater than base discharge).

GAGE.--Water-stage recorder. Datum of gage is 134.66 ft above sea level.

REMARKS.--Records good. No known diversion above gage. Radio telemeter at station.

AVERAGE DISCHARGE.--13 years (water years 1979-91), 5.05 ft^3/s (2.45 in/yr), 3,660 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,100 ft^3/s Oct. 18, 1994 (gage height, 16.37 ft), from rating curve extended above 2,300 ft^3/s; no flow for many days in 1986, 1988, 1990, and 1991.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 20, 1976, reached a stage of 26.28 ft, and flood of Sept. 15, 16, 1967, reached a stage of 26.08 ft, from information by the State Department of Highways and Public Transportation.

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)
June 26	1030	1,060	7.87	Sept. 20	0930	4,560	10.95

08177400 COLETO CREEK RESERVOIR NEAR VICTORIA, TX

LOCATION.--Lat 28°43'51", long 97°09'53", Victoria County, Hydrologic Unit 12100204, on right bank 175 ft upstream from right end of spillway of dam on Coleto Creek, 1.6 mi upstream from U.S. Highway 59, 11.6 mi west of Victoria, and 12.8 mi upstream from mouth.

DRAINAGE AREA.--494 mi².

PERIOD OF RECORD.--February 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 80.00 ft above sea level.
Supplementary gage (Turkey Creek Arm).--Water-stage recorder 2.7 mi upstream at datum 90.00 ft above sea level.
Coleto Creek Reservoir (Turkey Creek Arm) near Schroeder (station 08177240) is locally known as Dike No. 2.
Supplementary gage (Sulphur Creek Arm).--Water-stage recorder 2.8 mi upstream at datum 90.00 ft above sea level.
Coleto Creek Reservoir (Sulphur Creek Arm) near Fannin (station 08177380) is locally known as Dike No. 1.

REMARKS.--The reservoir system consists of the main reservoir (station 08177400), Turkey Creek Arm (station 08177240), and Sulphur Creek Arm (station 08177380). Figures shown below are the combined contents of the three stations. Cooling water is diverted from the main reservoir through the Central Power and Light coal-fired generating plant, through a canal to the Sulphur Creek Arm, and then through a canal to Turkey Creek Arm where it is released back into the main reservoir. The system was built for the Guadalupe-Blanco River Authority, and storage began in February 1980.

The main reservoir is formed by a compacted earthfill dam 20,800 ft long, including a 2,000-foot uncontrolled spillway and a 403-foot wide concrete outlet structure with seven 40- x 28-foot spillway gates. Low-flow releases are made through the dam by a controlled 8-inch pipe. Turkey Creek Arm is formed by a compacted earthfill dam 2,250 ft long, including a 186-foot wide concrete outlet structure with two 40- x 11-foot spillway gates. Sulphur Creek Arm is formed by a compacted earthfill dam 1,030 ft long, including a 186-foot wide concrete outlet structure with two 40- by 11-foot spillway gates. Data regarding the dams and reservoirs are given in the following table:

	Coleto Creek Reservoir		Turkey Creek Arm		Sulphur Creek Arm	
	Gage height (feet)	Contents (acre-feet)	Gage height (feet)	Contents (acre-feet)	Gage height (feet)	Contents (acre-feet)
Top of dam.....	39.0	140,200	17.0	7,330	17.0	2,550
Spillway.....	27.3	63,560	--	--	--	--
Top of spillway gates...	19.0	34,000	12.9	4,950	12.9	1,640
Crest of spillway.....	-9.0	954	1.89	1,400	1.91	306

COOPERATION.--Elevations and capacity tables were provided by Forrest and Cotton Engineers, Consulting Engineers for the Guadalupe-Blanco River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 40,550 acre-ft May 5, 1993; minimum since reservoir was first filled in May 1980, 22,790 acre-ft Aug. 20, 21, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,940 acre-ft Sept. 25; minimum, 22,790 acre-ft Aug. 20, 21.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28810	27300	26260	26430	25520	24610	23660	23420	23280	24030	23110	24430
2	28830	27280	26220	26350	25460	24550	23660	23440	23320	24000	23090	24470
3	28770	27120	26230	26270	25410	24540	23660	23440	23440	23990	22980	24450
4	28700	27020	26200	26260	25320	24560	23600	23460	23490	23970	22940	24500
5	28590	27000	26210	26230	25360	24590	23570	23500	23450	23950	22910	24530
6	28470	26930	26180	26130	25360	24450	23570	23520	23420	23930	22890	24510
7	28390	26900	26070	26100	25340	24390	23500	23540	23440	23930	22870	24560
8	28350	26860	26140	26070	25310	24330	23500	23530	23390	23920	23030	24800
9	28260	26820	25990	26070	25350	24280	23490	23530	23390	23860	23000	25260
10	28180	26820	25900	26070	25350	24180	23470	23530	23330	23820	22980	25180
11	28190	26710	25870	26050	25290	23980	23470	23720	23330	23760	22970	25200
12	28120	26630	25890	26000	25290	24010	23470	23710	23290	23720	22940	25200
13	28110	26590	25890	25990	25230	24010	23470	23710	23280	23680	22960	25200
14	27960	26590	25860	25970	25290	24000	23460	23690	23270	23650	22930	25180
15	27890	26540	25890	25990	25240	24000	23440	23650	23250	23630	22940	25240
16	27820	26520	25890	25940	25120	24040	23430	23670	23230	23580	22910	25320
17	27760	26690	26340	25850	25100	24030	23430	23650	23230	23560	22860	25320
18	27700	26670	26470	25860	25040	24000	23130	23610	23210	23520	22840	25340
19	27690	26680	26390	25740	25070	23960	23140	23580	23190	23480	22850	25380
20	27570	26650	26310	25790	25030	23920	23160	23560	23190	23460	22790	27960
21	27500	26580	26460	25760	25010	23860	23160	23580	23160	23430	22790	29020
22	27440	26570	26490	25770	24980	23840	23240	23540	23180	23370	22820	29440
23	27400	26540	26440	25800	24950	23810	23220	23490	23190	23350	23060	29590
24	27300	26480	26410	25750	24910	23860	23220	23490	23200	23310	23260	29910
25	27270	26440	26400	25710	24860	23830	23220	23470	23630	23310	23320	29940
26	27260	26410	26350	25700	24840	23780	23220	23430	23910	23280	23400	29920
27	27200	26410	26350	25620	24830	23780	23270	23430	23970	23250	23550	29860
28	27120	26300	26320	25620	24690	23880	23250	23450	24010	23210	23650	29720
29	27290	26230	26300	25650	24630	23880	23330	23430	24030	23210	23720	29720
30	27310	26230	26380	25640	---	23920	23340	23340	24050	23150	24320	29720
31	27290	---	26410	25540	---	23820	---	23300	---	23130	24450	---
MAX	28830	27300	26490	26430	25520	24610	23660	23720	24050	24030	24450	29940
MIN	27120	26230	25860	25540	24630	23780	23130	23300	23160	23130	22790	24430
(@)	-1570	-1060	+180	-870	-910	-810	-480	-40	+750	-920	+1320	+5270

CAL YR 1995 MAX 31390 MIN 25860 (@) -9870
WTR YR 1996 MAX 29940 MIN 22790 (@) +860

(@) Change in contents, in acre-feet.

08177500 COLETO CREEK NEAR VICTORIA, TX

LOCATION.--Lat 28°43'51", long 97°08'18", Victoria County, Hydrologic Unit 12100204, on left bank at downstream side of westbound bridge on U.S. Highway 59, 1.6 mi downstream from Coleto Creek dam, 9.0 mi southwest of Victoria, and 11.2 mi upstream from mouth.

DRAINAGE AREA.--514 mi².

PERIOD OF RECORD.--June 1939 to September 1954, June 1978 to current year.

REVISED RECORDS.--WSP 1562: 1939-40. WSP 1732: 1941.

GAGE.--Water-stage recorder. Datum of gage is 44.18 ft above sea level. Prior to Jan. 17, 1955, at datum 5.0 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since Feb. 21, 1980, flow almost completely regulated by Coleto Creek Reservoir, 1.6 mi upstream. Beginning on Mar. 6, 1980, water is diverted from the Guadalupe River basin to the Coleto Creek basin upstream from Coleto Creek Reservoir. There are no other large diversions above station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--16 years (water years 1940-54, 1979) prior to regulation by Coleto Creek Reservoir, 92.7 ft³/s (67,160 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1940-54, 1979-80).--Maximum discharge, 89,000 ft³/s Oct. 16, 1946 (gage height, 36.64 ft, present datum, from floodmark), on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1875, 236,000 ft³/s Sept. 22, 1967 (gage height, 42.0 ft, from floodmark), present site and datum, on basis of slope-area measurement of peak flow. Flood of Apr. 20, 1976, reached a stage of 37.85 ft, at site 0.2 mi upstream at present datum. Flood of July 1, 1936, reached a stage of 32.2 ft, present site and datum, from information by railroad company.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.7	2.0	1.9	2.1	2.4	2.0	2.3	2.1	1.7	1.2	4.8
2	1.5	1.8	1.8	1.9	2.3	2.2	2.1	2.2	2.3	1.6	1.3	2.2
3	1.6	1.9	1.7	2.0	2.2	2.1	2.0	e2.1	3.4	1.5	1.3	2.3
4	1.5	2.1	1.7	2.0	2.2	2.0	1.9	e2.0	4.0	1.5	1.3	2.2
5	1.5	2.2	1.7	2.0	2.2	1.9	2.1	e1.9	3.0	1.4	e1.3	1.9
6	1.7	2.9	1.7	2.1	2.0	1.8	2.3	e2.0	2.3	1.4	e1.2	1.8
7	1.7	2.5	1.9	2.2	1.8	2.0	2.2	e2.0	e2.2	1.3	1.2	1.7
8	1.7	1.9	2.0	2.3	1.9	2.1	2.1	2.2	e2.1	1.3	1.2	1.8
9	1.7	1.9	2.1	2.2	1.8	2.1	2.0	e2.3	e2.0	e1.3	1.3	2.3
10	1.8	1.7	2.2	2.1	1.8	2.1	2.0	e2.4	e1.9	e1.3	e1.2	2.6
11	1.8	1.8	2.2	2.0	1.8	2.1	2.0	e2.4	1.8	e1.3	e1.2	2.0
12	1.8	2.0	2.0	2.0	2.0	2.0	2.1	e2.7	1.8	e1.3	e1.1	1.7
13	1.7	1.8	1.8	2.0	2.0	1.9	2.0	e2.2	1.7	1.3	e1.2	1.6
14	1.7	1.8	1.8	2.0	2.0	1.9	1.9	e2.1	1.7	1.3	1.2	1.7
15	1.6	1.8	1.8	1.9	1.9	1.8	2.0	e2.1	1.7	1.2	1.6	1.6
16	1.5	1.8	1.9	1.9	2.0	1.9	2.1	e2.1	1.6	1.2	1.2	1.6
17	1.5	2.4	3.8	2.0	2.3	1.9	2.0	e2.1	1.7	1.2	.98	1.6
18	1.6	2.4	4.0	2.0	2.1	2.0	2.0	e2.0	1.7	1.2	.90	1.6
19	1.6	2.1	2.8	2.0	2.0	2.0	1.9	e1.9	1.6	1.3	.88	1.6
20	1.5	2.0	2.2	1.9	1.9	2.1	1.9	e1.8	1.5	1.2	.86	2.5
21	1.6	2.0	2.3	1.7	1.9	2.2	1.9	1.8	1.7	1.2	.87	2.5
22	1.6	2.0	2.8	1.7	1.9	2.1	2.0	1.9	1.7	1.2	e.88	2.0
23	1.5	1.9	2.4	1.7	1.8	2.1	2.2	2.0	1.8	1.2	e.88	1.7
24	1.5	1.9	2.2	1.8	1.9	2.0	2.1	2.0	2.4	1.2	e.88	1.7
25	1.5	2.0	2.0	1.7	1.9	2.1	2.1	1.9	5.4	1.2	e.80	2.2
26	1.5	2.0	2.1	1.5	1.9	2.2	2.0	2.0	6.5	1.3	e.80	1.9
27	1.5	1.9	2.1	1.7	1.8	2.3	2.0	2.0	4.1	1.3	e.80	1.6
28	1.4	2.0	2.0	2.0	1.9	2.2	2.1	2.0	2.7	1.3	5.6	1.6
29	1.5	2.1	2.1	1.8	2.2	2.1	2.6	2.1	2.1	1.3	11	1.6
30	2.0	2.1	2.3	1.7	---	1.9	2.5	2.1	1.9	1.3	7.3	1.6
31	1.7	---	2.1	2.0	---	2.0	---	2.1	---	1.3	13	---
TOTAL	49.8	60.4	67.5	59.7	57.5	63.5	62.1	64.7	72.4	40.6	66.43	59.5
MEAN	1.61	2.01	2.18	1.93	1.98	2.05	2.07	2.09	2.41	1.31	2.14	1.98
MAX	2.0	2.9	4.0	2.3	2.3	2.4	2.6	2.7	6.5	1.7	13	4.8
MIN	1.4	1.7	1.7	1.5	1.8	1.8	1.9	1.8	1.5	1.2	.80	1.6
AC-FT	99	120	134	118	114	126	123	128	144	81	132	118

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1996#, BY WATER YEAR (WY)

MEAN	131	53.0	52.0	40.5	126	74.6	137	167	250	65.9	10.4	19.0
MAX	1074	338	434	347	961	292	956	940	1426	397	89.3	245
(WY)	1995	1983	1992	1992	1992	1985	1992	1993	1993	1990	1981	1981
MIN	1.61	2.01	2.18	1.93	1.98	2.05	2.07	2.09	1.82	1.31	1.06	1.56
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1990	1996	1989	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1981 - 1996#	
ANNUAL TOTAL	6425.2		724.13			
ANNUAL MEAN	17.6		1.98		93.4	
HIGHEST ANNUAL MEAN					268	1992
LOWEST ANNUAL MEAN					1.98	1996
HIGHEST DAILY MEAN	1310	Jan 13	13	Aug 31	16600	Oct 19 1994
LOWEST DAILY MEAN	1.4	Sep 29	.80	Aug 25	.00	May 6 1981
ANNUAL SEVEN-DAY MINIMUM	1.5	Sep 26	.84	Aug 21	.66	Mar 3 1994
INSTANTANEOUS PEAK FLOW			23	Aug 30	44700	Oct 18 1994
INSTANTANEOUS PEAK STAGE			4.95	Aug 30	28.41	Oct 18 1994
ANNUAL RUNOFF (AC-FT)	12740		1440		67680	
10 PERCENT EXCEEDS	8.3		2.3		20	
50 PERCENT EXCEEDS	4.0		1.9		5.0	
90 PERCENT EXCEEDS	1.7		1.3		2.0	

e Estimated
Period of regulated streamflow.

08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°29'56", long 98°30'36", Bexar County, Hydrologic Unit 12100301, on right bank 30 ft downstream from low-water bridge on Dresden Drive at San Antonio, 0.15 mi west of intersection of Blanco Road and Dresden Drive, and 4.0 mi upstream from Olmos Dam.

DRAINAGE AREA.--21.2 mi².

PERIOD OF RECORD.--June 1968 to September 1981 (daily mean discharge), October 1982 to September 1995 (peak discharges greater than base discharge).
Water-quality records.--Chemical, biochemical, and pesticide analyses: November 1968 to April 1995. Sediment analyses: October 1972 to September 1973. Water temperatures: November 1968 to April 1995. Bacteria analyses: April 1976 to April 1995.

GAGE.--Water-stage recorder. Datum of gage is 726.10 ft above sea level.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--13 years (water years 1968-81), 4.34 ft³/s (2.78 in/yr), 3,140 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,700 ft³/s Apr. 5, 1991 (gage height, 14.38 ft, from floodmark); maximum gage height, 14.82 ft (from floodmark) Sept. 13, 1978; no flow at times.
Maximum stage since 1935, that of Sept. 13, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in September and November 1947 reached a stage of 8.5 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 27	0930	1,470	5.67	Sept. 15	0600	1,700	5.89
July 25	1915	1,810	5.98	Sept. 24	1930	1,860	6.03
Sept. 1	0330	1,240	5.43				

08178000 SAN ANTONIO RIVER AT SAN ANTONIO, TX

LOCATION.--Lat 29°24'34", long 98°29'41", Bexar County, Hydrologic Unit 12100301, on left bank 193 ft downstream from South Alamo Street Bridge in San Antonio, 2.1 mi upstream from San Pedro Creek, and 230.6 mi upstream from mouth.

DRAINAGE AREA.--41.8 mi². Flow of river comes from intermittent spring flow and from artesian wells; drainage area of streams not applicable.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1895 to June 1906 (periodic discharge measurements only), January 1915 to November 1929, February 1939 to current year. Ground-water discharge into river is discussed by Petit and George, Texas Board of Water Engineers Bull. 5608, vol. 1 (1956, p. 45).

REVISED RECORDS.--WSP 1312: 1917. WSP 1923: Drainage area. WRD TX-72-1: 1971(m).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 605.26 ft above sea level. Jan. 26, 1915, to Feb. 27, 1916, nonrecording gage at site 1.3 mi upstream at different datum. Feb. 28, 1916, to Apr. 7, 1920, nonrecording gage at site 1.1 mi upstream at different datum. Apr. 8, 1920, to Nov. 16, 1929, Feb. 15, 1939, to Apr. 25, 1967, water-stage recorder in vicinity of South Alamo Street Bridge at 7.00-foot higher datum. Apr. 25, 1967, to May 13, 1969, water-stage recorder at site 307 ft downstream at same datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flood flow is regulated by Olmos flood-control reservoir (capacity, 14,240 acre-ft), about 8.5 mi upstream. Olmos Dam was completed in 1926 and rebuilt in 1980. Springs emerge intermittently from the Edwards and associated limestones along the Balcones Fault Zone upstream from station. No flow at times due to regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 5, 1819, equaled or exceeded that of Sept. 10, 1921.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	22	13	13	e14	e11	45	10	25	7.0	4.5	59
2	15	13	13	15	e13	e12	e10	11	13	7.0	4.4	.42
3	13	12	13	14	e14	e11	e10	10	29	7.2	4.3	1.9
4	14	13	15	14	e12	e11	e7.2	9.6	7.8	7.0	3.9	8.3
5	14	13	14	e12	e12	e12	e7.3	9.6	7.7	6.9	3.7	5.5
6	14	13	17	e13	e14	e14	e24	9.5	7.5	6.8	3.9	4.9
7	14	13	14	e14	e13	e12	e8.4	9.8	8.5	6.4	4.3	5.1
8	13	13	17	e15	e12	e11	e8.8	10	7.5	6.5	4.5	19
9	14	13	13	e15	e11	e11	e10	10	7.3	7.1	4.8	70
10	14	13	14	e14	e11	e11	e9.4	9.5	7.1	6.7	5.3	.42
11	15	13	18	e12	e10	e11	e8.8	32	6.8	4.4	5.2	1.2
12	15	13	17	e12	e17	e11	e8.0	9.9	7.3	4.3	9.2	4.7
13	14	14	16	e13	e60	e12	e8.4	8.7	7.5	4.3	11	6.6
14	14	13	16	e12	e11	e11	e8.2	9.0	7.6	4.1	6.7	5.4
15	14	14	15	e12	e12	e11	e8.1	9.1	7.6	4.3	7.7	287
16	15	13	16	e12	e12	e11	e8.6	9.1	7.7	4.3	7.7	.42
17	14	95	37	e30	e11	e11	e8.3	9.1	7.7	4.3	7.5	.59
18	14	20	37	e11	e12	e11	e7.8	8.7	7.9	4.2	7.8	5.2
19	16	12	14	e8.0	e11	e11	e8.0	8.7	8.0	4.4	6.5	5.4
20	14	14	12	e12	e12	e11	e8.2	8.7	7.8	4.4	4.8	11
21	14	14	16	e11	e12	e9.2	e7.4	8.7	7.1	4.5	4.9	7.4
22	15	13	16	e13	e12	e9.2	e12	8.2	8.9	4.3	9.8	59
23	15	13	12	e11	e12	e10	e8.4	7.5	7.6	4.2	5.8	7.0
24	12	13	12	12	e12	e9.0	e8.4	7.5	7.5	4.2	5.4	103
25	12	13	12	e13	e13	e11	e9.0	7.0	78	44	4.7	167
26	12	13	12	11	e12	e11	e8.6	7.1	.25	88	4.9	11
27	12	14	12	e12	e11	e17	e7.8	192	4.5	9.1	5.5	6.8
28	12	13	13	e14	e11	e16	e30	.30	7.5	8.3	12	6.0
29	17	14	12	e13	e11	e10	e68	6.2	6.9	7.5	5.8	5.4
30	18	14	14	e12	---	e10	e10	7.8	7.4	7.0	16	5.3
31	20	---	13	e12	---	e11	---	7.9	---	5.8	149	---
TOTAL	444	493	485	407.0	400	350.4	392.1	472.20	331.95	298.5	341.5	879.95
MEAN	14.3	16.4	15.6	13.1	13.8	11.3	13.1	15.2	11.1	9.63	11.0	29.3
MAX	20	95	37	30	60	17	68	192	78	88	149	287
MIN	12	12	12	8.0	10	9.0	7.2	.30	.25	4.1	3.7	.42
AC-FT	881	978	962	807	793	695	778	937	658	592	677	1750
CFSM	.34	.39	.37	.31	.33	.27	.31	.36	.26	.23	.26	.70
IN.	.40	.44	.43	.36	.36	.31	.35	.42	.30	.27	.30	.78

08178000 SAN ANTONIO RIVER AT SAN ANTONIO, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 1996h, BY WATER YEAR (WY)

MEAN	58.3	54.9	56.2	57.0	59.2	55.9	61.3	76.6	66.0	47.2	41.7	56.8
MAX	295	233	208	258	252	272	251	358	350	206	222	278
(WY)	1920	1920	1920	1920	1992	1992	1977	1993	1992	1992	1915	1973
MIN	7.49	9.52	8.28	7.63	8.06	7.07	6.93	12.2	7.67	7.29	8.28	8.65
(WY)	1956	1919	1956	1956	1984	1956	1956	1967	1956	1984	1957	1955

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1915 - 1996h	
ANNUAL TOTAL	11644.33		5295.60			
ANNUAL MEAN	31.9		14.5		57.0	
HIGHEST ANNUAL MEAN					200	1992
LOWEST ANNUAL MEAN					9.23	1956
HIGHEST DAILY MEAN	867	Jun 29	287	Sep 15	3190	Sep 10 1921
LOWEST DAILY MEAN	.41	May 9	.25	Jun 26	.06	May 23 1971
ANNUAL SEVEN-DAY MINIMUM	8.7	Jun 21	4.1	Aug 1	4.1	Feb 10 1957
INSTANTANEOUS PEAK FLOW			3050	May 27	c15300	Sep 10 1921
INSTANTANEOUS PEAK STAGE			12.49	May 27	d20.14	Sep 10 1921
ANNUAL RUNOFF (AC-FT)	23100		10500		41310	
ANNUAL RUNOFF (CFSM)	.76		.35		1.36	
ANNUAL RUNOFF (INCHES)	10.36		4.71		18.54	
10 PERCENT EXCEEDS	43		16		130	
50 PERCENT EXCEEDS	14		11		27	
90 PERCENT EXCEEDS	9.6		4.9		11	

e Estimated
c At former site and datum, from rating curve extended above 2,000 ft^3/s on basis of slope-area measurement of peak flow.
d Maximum stage since at least 1819.
h See PERIOD OF RECORD paragraph.

08178000 SAN ANTONIO RIVER AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: December 1991 to August 1992, January 1996 to August 1996(discontinued). Bacteria analyses: December 1991 to August 1992, January 1996 to August 1996(discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
JAN 22...	1445	11	620	6.4	10.5	--	--	0.9	70	51	260	55
AUG 31...	1225	791	475	7.2	26.0	5.6	70	--	61000	54000	170	38

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)
JAN 22...	73	19	28	0.8	2.0	210	27	46	337	334	7
AUG 31...	50	11	27	0.9	2.8	130	28	47	460	249	2

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
JAN 22...	1.40	1.40	1.40	0.040	--	--	--	<0.20	<0.20	0.090	0.060
AUG 31...	0.530	0.530	0.530	0.160	1.0	0.34	1.0	1.2	0.50	0.110	0.500

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	ARSENIC TOTAL (UG/L AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)
JAN 22...	2.2	<0.010	1	<1	<10	<1	1	7	2	<0.10	1
AUG 31...	17	<0.010	3	3	<10	<1	9	23	43	<0.10	4

DATE	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)
JAN 22...	<1	<1	30	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
AUG 31...	<1	<1	110	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00

08178050 SAN ANTONIO RIVER AT MITCHELL ST., SAN ANTONIO, TX

LOCATION.--Lat 29°23'34", long 98°29'40", Bexar County, Hydrologic Unit 12100301, on left bank 15 ft upstream from Mitchell Street Bridge in San Antonio, 0.2 mi upstream from San Pedro Creek, and 228.7 mi upstream from mouth.

DRAINAGE AREA.--42.4 mi². Flow of river comes from intermittent spring flow and from artesian wells; drainage area of streams not applicable.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1992 to current year. Ground-water discharge into river is discussed by Petit and George, Texas Board of Water Engineers Bull. 5608, vol. 1 (1956, p. 45).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 585.07 ft above sea level.

REMARKS.--Records fair. Flood flow is regulated by Olmos flood-control reservoir (capacity, 14,240 acre-ft), about 10.6 mi upstream. Olmos Dam was completed in 1926 and rebuilt in 1980. Springs emerge intermittently from the Edwards and associated limestones along the Balcones Fault Zone upstream from station. No flow at times due to regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 5, 1819, equaled or exceeded that of Sept. 10, 1921.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	19	12	17	16	35	66	8.6	27	6.3	5.2	95
2	14	12	12	18	13	20	e11	8.4	16	6.3	5.7	1.3
3	12	13	11	17	12	17	10	8.7	37	6.5	6.7	1.5
4	12	13	12	15	12	12	7.2	8.0	8.1	6.2	6.5	6.1
5	12	13	13	13	14	13	7.3	7.7	7.5	5.9	5.6	4.3
6	13	13	13	14	13	14	23	8.3	7.5	6.0	6.6	3.8
7	13	12	14	14	13	13	8.6	9.1	9.1	6.1	5.8	3.5
8	12	11	15	15	13	12	9.1	10	7.8	5.8	5.8	17
9	12	12	13	16	13	11	10	9.9	7.4	5.9	6.1	85
10	12	12	13	14	11	11	9.4	9.6	6.8	5.6	7.0	1.5
11	12	13	15	13	13	11	8.8	38	7.1	3.8	7.2	1.1
12	12	12	14	13	18	11	8.0	11	7.3	4.0	6.7	3.5
13	12	13	13	14	56	12	8.4	9.1	7.5	3.8	16	4.8
14	12	13	12	13	e11	11	8.2	9.5	7.7	3.7	9.3	3.9
15	12	14	12	13	e10	11	8.3	9.3	7.6	3.5	11	356
16	12	12	12	13	11	11	8.9	14	7.3	4.0	9.5	1.9
17	12	124	29	34	12	11	8.5	8.7	7.3	3.8	8.3	1.2
18	11	24	33	2.9	11	11	8.2	8.5	7.5	3.5	10	3.5
19	12	13	16	12	12	11	8.3	8.1	7.7	3.6	9.4	4.2
20	11	13	14	13	12	11	8.6	8.1	6.7	3.6	9.5	7.4
21	12	14	20	13	12	9.8	7.7	8.0	6.5	3.7	7.1	5.9
22	11	13	25	13	12	9.7	12	7.5	9.5	3.0	4.1	56
23	12	13	16	12	12	11	8.3	7.0	7.0	3.8	6.5	5.2
24	11	13	16	13	12	9.7	8.4	6.9	7.2	3.4	4.2	131
25	9.8	12	15	14	13	11	9.1	6.9	124	13	4.4	290
26	9.0	13	14	13	12	11	8.6	6.5	3.6	184	3.7	9.1
27	10	13	14	15	11	18	7.9	274	3.9	5.1	3.8	5.8
28	11	12	15	15	13	16	26	3.0	7.0	8.5	8.4	4.3
29	14	13	14	13	158	10	78	5.5	6.7	6.2	4.3	4.2
30	16	14	23	13	---	10	9.3	7.8	6.8	8.2	17	4.2
31	19	---	17	15	---	11	---	8.3	---	7.8	176	---
TOTAL	376.8	511	487	442.9	551	396.2	421.1	554.0	390.1	344.6	397.4	1122.2
MEAN	12.2	17.0	15.7	14.3	19.0	12.8	14.0	17.9	13.0	11.1	12.8	37.4
MAX	19	124	33	34	158	35	78	274	124	184	176	356
MIN	9.0	11	11	2.9	10	9.7	7.2	3.0	3.6	3.0	3.7	1.1
AC-FT	747	1010	966	878	1090	786	835	1100	774	684	788	2230

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1996, BY WATER YEAR (WY)

MEAN	98.7	80.5	84.3	75.7	77.7	82.1	64.6	151	84.0	39.7	20.9	45.0
MAX	157	203	209	185	209	172	149	369	228	115	29.6	58.5
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1994
MIN	12.2	17.0	15.7	14.3	19.0	12.8	14.0	17.9	13.0	11.1	12.8	33.7
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1993

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1993 - 1996	
ANNUAL TOTAL	12850.7		5994.3			
ANNUAL MEAN	35.2		16.4		75.4	
HIGHEST ANNUAL MEAN					172	1993
LOWEST ANNUAL MEAN					16.4	1996
HIGHEST DAILY MEAN	885	Jun 29	356	Sep 15	1900	May 6 1993
LOWEST DAILY MEAN	2.8	May 9	1.1	Sep 11	1.1	Sep 11 1996
ANNUAL SEVEN-DAY MINIMUM	10	Jun 3	3.5	Jul 18	3.5	Jul 18 1996
INSTANTANEOUS PEAK FLOW			2220	May 27	5090	Oct 8 1994
INSTANTANEOUS PEAK STAGE			4.80	May 27	7.98	Oct 8 1994
ANNUAL RUNOFF (AC-FT)	25490		11890		54660	
10 PERCENT EXCEEDS	45		17		178	
50 PERCENT EXCEEDS	14		11		32	
90 PERCENT EXCEEDS	11		4.3		8.6	

e Estimated

08178050 SAN ANTONIO RIVER AT MITCHELL ST., SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: December 1991 to current year. Bacteria analyses: December 1991 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
JAN												
22...	1600	12	594	7.9	17.0	--	--	1.0	350	95	260	49
MAY												
27...	1054	564	270	7.6	23.0	6.8	81	--	37000	85000	100	20
AUG												
31...	1225	1830	360	7.8	26.0	5.2	65	--	28000	110000	140	12

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)
JAN											
22...	70	20	27	0.7	2.2	210	27	41	333	326	6
MAY											
27...	31	6.4	9.4	0.4	2.5	84	16	15	162	161	932
AUG											
31...	40	9.1	13	0.5	2.7	120	18	21	200	189	656

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
JAN											
22...	1.30	1.30	1.30	0.030	1.6	0.27	--	<0.20	0.30	0.060	0.050
MAY											
27...	0.770	0.770	0.770	0.490	6.1	4.8	0.61	1.1	5.3	1.40	<0.010
AUG											
31...	0.430	0.430	0.430	0.130	3.0	2.5	0.22	0.35	2.6	0.990	0.090

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	ARSENIC TOTAL (UG/L AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)
JAN											
22...	3.2	<0.010	<1	<1	<10	<1	1	4	1	<0.10	5
MAY											
27...	53	<0.010	1	6	<10	2	30	90	190	<0.10	12
AUG											
31...	28	<0.010	3	5	<10	<1	15	27	110	<0.10	10

DATE	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)
JAN											
22...	<1	<1	10	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
MAY											
27...	<1	<1	430	<0.040	0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
AUG											
31...	<1	<1	180	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX

LOCATION.--Lat 29°19'19", long 98°27'00", Bexar County, Hydrologic Unit 12100301, on right bank between westbound bridges on Interstate Highway 410 in San Antonio, 4.5 mi upstream from Salado Creek, and 222.3 mi upstream from mouth.

DRAINAGE AREA.--125 mi². Flow of river comes from intermittent springflow and from artesian wells; drainage area of streams not applicable.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 488.11 ft above sea level. Dec. 20, 1986, to Aug. 15, 1989, at site 0.2 mi downstream at Camino Coahuilteca crossing at same datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	41	22	24	21	66	38	14	64	7.9	6.0	493
2	57	26	23	23	21	23	6.8	13	26	6.5	5.6	20
3	37	19	22	22	21	19	6.1	15	71	5.8	5.4	5.5
4	30	18	21	21	20	16	12	14	14	6.6	5.6	67
5	23	18	22	21	21	17	9.9	12	8.8	7.1	7.0	17
6	20	20	20	19	22	18	76	12	8.1	7.3	5.5	12
7	20	20	22	19	22	18	22	11	58	10	4.8	8.3
8	20	19	25	20	23	17	14	11	14	7.7	3.9	294
9	19	19	28	21	24	16	13	14	8.3	7.7	4.7	356
10	20	20	21	23	26	16	12	13	6.6	5.6	5.0	30
11	19	19	20	23	25	14	13	103	5.8	9.8	5.6	9.0
12	18	19	22	21	24	17	13	29	6.3	11	5.8	4.9
13	18	19	20	21	49	17	13	14	6.9	7.1	31	6.7
14	18	18	21	21	10	17	14	12	6.6	5.6	7.6	8.7
15	16	21	21	21	7.7	16	13	12	6.3	5.7	4.4	671
16	16	19	20	21	8.7	15	13	16	6.6	5.4	4.3	35
17	16	322	84	36	18	14	14	12	6.5	3.3	3.9	12
18	16	122	113	15	19	12	15	11	5.7	4.8	3.7	7.5
19	17	29	35	16	27	12	16	12	5.6	5.5	4.6	4.3
20	15	26	21	20	20	13	19	12	7.1	4.9	15	18
21	16	27	22	20	19	13	17	11	7.6	4.6	11	22
22	16	21	71	21	20	13	42	12	19	5.1	13	44
23	16	20	26	21	20	14	24	12	19	5.7	26	13
24	15	25	22	20	20	15	12	12	8.3	3.7	16	154
25	15	21	22	20	20	14	12	13	265	182	19	268
26	16	21	22	23	20	12	14	13	73	221	39	25
27	15	23	21	20	19	33	13	375	57	13	28	15
28	15	21	22	22	18	29	14	34	16	16	49	8.4
29	17	18	23	30	265	16	255	11	11	18	15	6.3
30	23	21	26	21	---	16	19	13	8.7	8.5	19	5.8
31	38	---	25	15	---	16	---	12	---	8.4	405	---
TOTAL	658	1052	905	661	850.4	564	774.8	880	826.8	621.3	779.4	2641.4
MEAN	21.2	35.1	29.2	21.3	29.3	18.2	25.8	28.4	27.6	20.0	25.1	88.0
MAX	57	322	113	36	265	66	255	375	265	221	405	671
MIN	15	18	20	15	7.7	12	6.1	11	5.6	3.3	3.7	4.3
AC-FT	1310	2090	1800	1310	1690	1120	1540	1750	1640	1230	1550	5240

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1996, BY WATER YEAR (WY)

MEAN	110	97.1	165	123	159	142	133	278	210	162	74.8	101
MAX	232	294	479	263	483	420	345	937	622	692	263	262
(WY)	1987	1993	1992	1993	1992	1992	1992	1992	1987	1990	1992	1992
MIN	21.2	21.7	19.6	21.3	29.3	18.2	25.8	27.6	27.6	19.6	18.0	25.6
(WY)	1996	1992	1991	1996	1996	1996	1996	1989	1996	1994	1989	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1987 - 1996	
ANNUAL TOTAL	23430		11214.1			
ANNUAL MEAN	64.2		30.6		146	
HIGHEST ANNUAL MEAN					353	1992
LOWEST ANNUAL MEAN					30.6	1996
HIGHEST DAILY MEAN	2860	Jun 29	671	Sep 15	12100	Jul 16 1990
LOWEST DAILY MEAN	11	Jul 26	3.3	Jul 17	3.3	Jul 17 1996
ANNUAL SEVEN-DAY MINIMUM	13	Jul 22	4.8	Jul 16	4.8	Jul 16 1996
INSTANTANEOUS PEAK FLOW			4150	Sep 15	c64300	Jul 15 1990
INSTANTANEOUS PEAK STAGE			15.07	Sep 15	a32.20	Jul 15 1990
ANNUAL RUNOFF (AC-FT)	46470		22240		105900	
10 PERCENT EXCEEDS	75		38		271	
50 PERCENT EXCEEDS	28		18		48	
90 PERCENT EXCEEDS	16		6.1		16	

a From floodmark.
c From rating curve extended above 8,400 ft³/s.

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1987 to current year. Pesticide analyses: December 1992 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1986 to August 1988, March 1993 to current year.
pH: December 1986 to August 1988, March 1993 to current year.
WATER TEMPERATURE: December 1986 to August 1988, March 1993 to current year.
DISSOLVED OXYGEN: December 1986 to August 1988, March 1993 to current year.

INSTRUMENTATION.--From December 1986 to August 1988 and from March 1993 to current year, a four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen.

REMARKS.--Interruptions in the record were due to malfunctions of the instruments or probe fouling. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Offic upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,870 microsiemens Aug. 20, 1996; minimum, 107 microsiemens June 29, 1995.
pH: Maximum, 9.2, May 27, 1996; minimum, 7.0 units June 30, July 1, 1995.
WATER TEMPERATURE: Maximum, 36.5°C Aug. 12, 1996; minimum, 3.5°C, Feb. 4, 1996.
DISSOLVED OXYGEN: Maximum, 20.1 mg/L Feb. 3, 1996; minimum, 0.5 mg/L May 21, July 21, 1988.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,870 microsiemens Aug. 20; minimum, 137 microsiemens Sept. 9.
pH: Maximum, 9.2 May 27; minimum, 7.2 units Nov. 2, 3, Apr. 26, 27.
WATER TEMPERATURE: Maximum, 36.5°C Aug. 12; minimum, 3.5°C Feb. 4.
DISSOLVED OXYGEN: Maximum, 20.1 mg/L Feb. 3; minimum, 0.9 mg/L July 1.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
JUL											
25-26	2047	950	330	7.6	13	110	34	34	6.2	20	0.8
SEP											
15-15	0640	1780	228	7.6	11	84	11	28	3.3	10	0.5

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
JUL										
25-26	4.7	76	35	25	202	193	1100	0.460	0.460	0.460
SEP										
15-15	3.4	73	18	13	140	138	590	0.062	0.062	0.062

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)
JUL										
25-26	0.100	4.9	4.3	0.50	0.60	4.4	0.930	<0.010	96	<0.010
SEP										
15-15	<0.015	2.7	2.6	--	0.27	2.6	0.730	0.050	28	<0.010

DATE	PHENOLS TOTAL (UG/L)	ARSENIC TOTAL (UG/L AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)
JUL										
25-26	4	8	<10	1	25	32	97	<0.10	19	<1
SEP										
15-15	<1	5	<10	<1	12	16	55	<0.10	11	<1

DATE	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)
JUL										
25-26	<1	280	<0.040	0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
SEP										
15-15	<1	170	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

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.	1995	658	604	338	600	44	78	50	89	230
NOV.	1995	1052	524	295	838	37	104	44	125	200
DEC.	1995	905	610	341	833	45	109	51	124	230
JAN.	1996	661	632	352	629	47	84	52	93	240
FEB.	1996	850.4	602	337	774	44	101	50	115	230
MAR.	1996	564	603	337	513	44	68	50	76	230
APR.	1996	774.8	536	302	631	38	79	45	94	210
MAY	1996	880	483	274	652	32	77	41	98	190
JUNE	1996	826.8	459	261	583	30	67	40	88	190
JULY	1996	621.3	464	264	442	31	52	40	67	190
AUG.	1996	779.4	450	256	539	29	62	39	81	180
SEPT	1996	2641.4	261	152	1090	14	103	24	168	110
TOTAL		11214.1	**	**	8.00	**	982	**	1220	**
WTD.AVG.		31	474	268	**	32	**	40	**	190

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	594	555	578	657	621	635	658	635	648	648	627	639
2	606	554	574	674	656	665	666	647	656	641	619	634
3	606	564	585	672	653	664	667	641	656	645	614	632
4	602	572	588	663	651	656	662	637	652	648	611	631
5	619	574	592	661	650	655	676	649	663	642	618	632
6	630	592	610	672	657	663	676	633	653	649	612	633
7	598	582	590	680	672	677	653	636	644	645	615	631
8	600	591	595	688	668	682	786	644	673	640	612	627
9	607	580	595	673	657	664	782	725	750	641	627	634
10	598	581	592	688	663	677	731	697	710	642	630	637
11	611	586	596	671	643	655	720	698	711	642	614	631
12	620	588	604	659	640	646	698	667	681	640	598	622
13	607	587	597	666	650	658	674	646	662	640	598	623
14	619	600	608	655	630	643	681	648	664	623	591	612
15	605	585	597	668	632	647	676	644	660	639	609	622
16	618	591	599	667	631	648	675	656	664	642	618	632
17	631	610	620	743	283	431	690	548	639	666	606	625
18	617	599	608	366	284	315	577	484	551	618	582	602
19	621	608	612	438	366	408	504	468	482	631	603	618
20	634	613	623	488	428	466	521	495	506	670	618	634
21	616	599	608	527	485	519	568	521	544	700	668	683
22	615	598	606	519	505	514	568	525	544	674	645	659
23	618	604	612	570	519	550	551	512	529	674	612	645
24	618	602	610	593	567	583	564	529	543	653	614	634
25	638	611	625	607	591	599	604	564	588	644	624	633
26	630	611	621	633	604	616	601	589	596	666	601	632
27	631	614	624	698	627	647	600	582	591	668	604	631
28	650	631	640	682	637	648	608	583	594	628	616	620
29	642	635	639	649	619	635	616	601	607	632	596	621
30	651	629	637	660	643	651	627	604	610	661	623	640
31	661	620	644	---	---	---	636	604	621	677	622	649
MONTH	661	554	607	743	283	604	786	468	622	700	582	632

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	652	643	647	425	414	419	700	635	671	505	482	494
2	662	639	648	471	407	430	649	602	627	530	493	513
3	679	655	667	533	471	501	679	634	657	548	522	538
4	663	642	654	570	508	535	657	611	629	565	523	549
5	674	649	662	587	554	572	688	657	670	566	522	549
6	661	627	645	589	567	578	704	556	629	578	539	562
7	673	614	640	584	556	573	585	566	577	577	538	563
8	671	611	641	591	568	581	596	553	577	596	548	575
9	649	582	618	597	564	585	598	539	577	586	558	575
10	631	573	606	601	555	582	608	543	579	605	553	583
11	647	585	619	596	527	573	600	530	579	1050	431	590
12	643	583	613	1160	596	807	612	528	583	505	440	482
13	831	586	611	775	621	667	599	497	563	509	473	495
14	629	580	605	629	564	603	589	489	554	518	391	467
15	671	609	644	608	503	585	608	509	569	529	415	462
16	686	608	652	609	565	591	593	488	561	507	434	474
17	651	599	621	609	572	595	619	506	573	538	487	514
18	688	648	674	615	576	600	591	505	558	551	504	530
19	684	611	653	637	577	609	617	543	588	569	514	545
20	661	612	642	628	601	616	616	561	594	572	510	545
21	661	593	632	642	612	630	633	568	606	568	499	539
22	624	558	596	648	619	634	1470	609	752	573	452	520
23	608	545	586	732	639	681	718	545	600	552	464	520
24	613	539	580	670	645	660	567	490	540	563	494	537
25	600	537	578	670	644	659	601	524	571	555	489	530
26	620	591	609	662	644	655	603	558	586	566	518	545
27	644	604	625	1100	655	797	619	529	587	576	278	437
28	686	626	666	831	691	742	615	489	578	359	325	338
29	692	277	545	692	648	662	489	298	391	385	359	376
30	---	---	---	688	636	675	483	462	470	441	380	406
31	---	---	---	704	671	692	---	---	---	488	441	463
MONTH	831	277	627	1160	407	616	1470	298	587	1050	278	510

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1020	473	559	502	456	480	419	385	401	278	158	210
2	474	421	437	511	467	490	434	403	419	302	245	275
3	471	367	412	517	478	500	436	415	428	363	302	335
4	457	380	414	509	464	489	448	418	434	410	221	277
5	494	448	465	509	471	493	457	432	444	374	268	316
6	506	462	478	520	484	503	473	450	459	380	350	367
7	619	370	483	533	504	519	495	464	479	366	330	350
8	488	452	469	550	527	539	511	474	495	368	162	256
9	467	426	450	562	526	548	521	495	510	273	137	213
10	491	449	470	579	550	566	546	515	522	396	271	357
11	510	488	500	572	541	559	554	522	542	404	395	400
12	535	501	519	584	539	564	563	533	550	416	391	405
13	533	509	523	579	536	559	583	558	571	402	376	392
14	543	514	531	578	548	564	575	518	544	441	389	413
15	551	521	539	580	549	566	582	504	550	447	158	257
16	561	528	547	576	541	563	531	482	509	309	209	262
17	565	530	551	583	538	565	538	485	511	364	309	335
18	574	547	561	608	564	586	560	527	544	406	355	384
19	608	565	587	597	553	580	580	545	565	453	406	442
20	594	556	577	601	566	589	1870	526	642	467	415	432
21	591	559	577	603	563	587	605	529	582	515	467	500
22	1300	569	672	597	536	571	836	536	582	515	417	454
23	727	572	604	604	568	589	836	342	612	438	423	431
24	577	505	537	633	576	609	555	361	503	457	210	426
25	668	171	440	638	157	571	731	317	546	239	174	202
26	508	329	372	479	192	344	604	360	577	304	239	272
27	448	353	391	357	339	348	605	479	530	364	304	327
28	391	359	377	367	341	348	538	443	482	389	356	373
29	435	391	408	449	367	422	457	409	431	406	356	388
30	469	435	450	452	378	422	583	413	505	459	397	428
31	---	---	---	413	363	391	516	208	375	---	---	---
MONTH	1300	171	497	638	157	517	1870	208	511	515	137	349
YEAR	1870	137	557									

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.3	7.7	8.0	7.9	7.7	7.8	8.3	8.0	8.1	8.5	7.9	8.2
2	8.2	7.7	7.9	7.7	7.2	7.5	8.3	8.0	8.1	8.5	8.0	8.2
3	8.3	7.9	8.1	7.5	7.2	7.3	8.5	8.0	8.2	8.5	8.0	8.2
4	8.3	7.9	8.1	7.6	7.3	7.4	8.6	8.0	8.3	8.5	8.0	8.2
5	8.4	8.0	8.2	7.6	7.4	7.5	8.6	8.1	8.3	8.5	8.0	8.2
6	8.3	8.0	8.1	7.7	7.5	7.6	8.6	8.1	8.3	8.5	8.0	8.2
7	8.3	8.1	8.2	7.7	7.4	7.5	8.5	8.0	8.2	8.5	8.1	8.2
8	8.3	8.1	8.2	7.8	7.4	7.6	8.4	8.1	8.2	8.5	8.1	8.2
9	8.3	8.1	8.2	7.8	7.5	7.7	8.3	7.9	8.1	8.4	8.1	8.2
10	8.3	8.1	8.2	7.9	7.6	7.7	8.3	7.9	8.1	8.5	8.0	8.2
11	8.3	8.0	8.2	7.9	7.6	7.8	8.3	7.6	8.0	8.6	8.0	8.2
12	8.3	8.0	8.2	8.0	7.7	7.8	8.1	7.6	7.9	8.4	7.9	8.1
13	8.3	8.0	8.1	8.0	7.7	7.9	8.3	7.8	8.0	8.4	7.9	8.1
14	8.3	8.0	8.2	8.1	7.8	7.9	8.3	7.9	8.0	8.4	7.9	8.1
15	8.3	8.1	8.2	8.1	7.8	7.9	8.3	7.8	8.0	8.2	7.8	8.0
16	8.3	8.1	8.2	8.1	7.8	7.9	8.3	7.9	8.1	8.4	7.8	8.0
17	8.3	8.1	8.2	8.1	7.7	7.8	8.1	7.8	7.9	8.4	7.8	8.0
18	8.3	8.0	8.1	7.7	7.4	7.5	8.1	7.8	7.9	8.6	7.8	8.2
19	8.3	8.0	8.1	7.7	7.4	7.5	8.2	7.8	8.0	8.4	7.9	8.1
20	8.3	8.1	8.2	7.8	7.4	7.5	8.2	7.8	8.0	8.3	8.0	8.1
21	8.3	8.0	8.2	7.8	7.5	7.6	8.1	7.9	8.0	8.2	7.8	8.0
22	8.3	8.0	8.2	8.0	7.6	7.7	8.2	7.8	8.0	8.3	7.8	8.0
23	8.3	8.1	8.1	8.0	7.6	7.8	8.1	7.8	8.0	8.2	7.7	7.9
24	8.3	8.1	8.2	8.1	7.8	7.9	8.2	7.8	8.0	8.2	7.5	7.8
25	8.3	8.0	8.1	8.2	7.8	8.0	8.3	8.0	8.1	8.2	7.6	7.9
26	8.2	8.0	8.1	8.2	7.8	8.0	8.3	7.9	8.1	8.3	7.6	7.9
27	8.2	7.3	7.8	8.2	7.9	8.0	8.4	8.0	8.2	8.3	7.7	8.0
28	7.8	7.3	7.5	8.4	7.9	8.1	8.4	8.0	8.2	8.2	7.8	8.0
29	7.8	7.6	7.7	8.3	8.0	8.1	8.3	8.0	8.1	8.2	7.8	7.9
30	7.9	7.7	7.8	8.3	7.9	8.1	8.4	8.0	8.2	8.2	7.7	7.9
31	7.9	7.8	7.9	---	---	---	8.4	8.0	8.2	8.3	7.6	7.9
MONTH	8.4	7.3	8.1	8.4	7.2	7.7	8.6	7.6	8.1	8.6	7.5	8.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.2	7.8	8.0	7.9	7.4	7.6	8.0	7.5	7.8	8.1	7.3	7.7
2	8.3	8.0	8.1	7.8	7.4	7.5	8.2	7.6	7.8	8.0	7.4	7.6
3	8.3	8.0	8.1	8.0	7.4	7.7	8.1	7.5	7.8	8.1	7.4	7.7
4	8.2	8.0	8.1	7.9	7.4	7.6	8.2	7.6	7.8	8.1	7.4	7.7
5	8.3	8.0	8.1	8.1	7.4	7.7	8.0	7.5	7.7	8.2	7.4	7.7
6	8.3	7.9	8.1	8.2	7.4	7.7	7.9	7.6	7.8	8.1	7.4	7.7
7	8.3	7.8	8.0	8.4	7.7	7.9	8.2	7.6	7.8	8.2	7.4	7.7
8	8.4	7.8	8.0	8.3	7.7	8.0	8.3	7.5	7.8	8.2	7.4	7.7
9	8.3	7.7	7.9	8.4	7.7	8.0	8.3	7.4	7.8	8.3	7.5	7.8
10	8.4	7.6	7.9	8.4	7.7	8.0	8.4	7.4	7.8	8.3	7.5	7.8
11	8.5	7.7	8.0	8.4	7.6	8.0	8.4	7.3	7.8	7.7	7.3	7.5
12	8.5	7.7	8.1	8.2	7.5	7.8	8.4	7.4	7.8	7.9	7.3	7.5
13	8.2	7.6	7.9	8.2	7.4	7.8	8.5	7.4	7.8	8.2	7.3	7.7
14	8.2	7.7	7.9	8.2	7.5	7.7	8.6	7.3	7.9	8.7	7.3	8.0
15	8.3	7.6	7.9	8.3	7.4	7.8	8.6	7.4	8.0	8.7	7.6	8.1
16	8.4	7.6	8.0	8.2	7.4	7.7	8.6	7.4	8.0	8.6	7.6	8.1
17	8.5	7.8	8.1	8.3	7.4	7.8	8.5	7.4	7.9	8.7	7.6	8.1
18	8.4	7.7	8.0	8.5	7.4	7.9	8.5	7.4	7.8	8.7	7.6	8.1
19	8.3	7.7	7.9	8.4	7.6	7.9	8.3	7.3	7.7	8.7	7.6	8.1
20	8.3	7.7	7.9	8.3	7.6	7.9	8.3	7.3	7.7	8.7	7.6	8.1
21	8.5	7.7	8.0	8.2	7.5	7.8	8.4	7.4	7.8	8.8	7.5	8.1
22	8.6	7.6	8.0	8.2	7.5	7.8	8.1	7.4	7.6	8.7	7.5	8.1
23	8.5	7.5	8.0	8.0	7.6	7.8	7.9	7.3	7.5	8.8	7.6	8.1
24	8.6	7.4	7.9	8.0	7.5	7.7	8.2	7.3	7.6	8.8	7.6	8.1
25	8.5	7.4	7.9	8.2	7.5	7.9	8.3	7.3	7.7	8.7	7.6	8.1
26	8.3	7.4	7.8	8.1	7.7	7.9	8.2	7.2	7.6	8.7	7.6	8.1
27	8.3	7.4	7.8	8.0	7.7	7.9	8.3	7.2	7.7	9.2	7.6	8.1
28	8.3	7.5	7.8	8.0	7.6	7.8	8.3	7.3	7.7	7.7	7.5	7.6
29	8.2	7.6	7.8	7.9	7.5	7.7	7.7	7.3	7.5	7.8	7.5	7.7
30	---	---	---	8.2	7.4	7.7	7.9	7.3	7.5	8.2	7.6	7.8
31	---	---	---	8.2	7.5	7.8	---	---	---	8.3	7.6	7.9
MONTH	8.6	7.4	8.0	8.5	7.4	7.8	8.6	7.2	7.7	9.2	7.3	7.9

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	7.5	7.8	8.2	7.3	7.8	8.3	7.3	7.8	8.6	7.6	8.0
2	8.2	7.4	7.8	8.2	7.3	7.7	8.2	7.3	7.8	7.6	7.4	7.5
3	8.0	7.6	7.8	8.1	7.3	7.7	8.3	7.3	7.8	7.8	7.4	7.6
4	8.5	7.5	7.9	8.3	7.4	7.8	8.3	7.4	7.8	7.7	7.4	7.6
5	8.7	7.5	8.1	8.3	7.4	7.8	8.3	7.4	7.8	8.0	7.4	7.7
6	8.7	7.7	8.3	8.3	7.4	7.8	8.2	7.4	7.8	8.4	7.6	7.9
7	8.3	7.6	8.0	8.3	7.4	7.8	8.3	7.4	7.7	8.6	7.7	8.1
8	8.1	7.5	7.8	8.3	7.4	7.9	8.3	7.3	7.7	8.3	7.7	7.9
9	8.3	7.5	7.8	8.3	7.5	7.9	8.2	7.4	7.8	8.2	7.6	7.8
10	8.4	7.5	7.9	8.2	7.5	7.8	8.2	7.4	7.7	7.9	7.7	7.8
11	8.2	7.5	7.8	8.3	7.5	7.9	8.3	7.4	7.8	8.2	7.6	7.8
12	8.2	7.5	7.8	8.5	7.5	8.0	8.2	7.3	7.8	8.3	7.7	8.0
13	8.3	7.4	7.8	8.4	7.5	7.9	7.9	7.3	7.6	8.4	7.7	8.0
14	8.4	7.4	7.9	8.3	7.4	7.9	8.2	7.3	7.7	8.5	7.7	8.1
15	8.4	7.6	8.0	8.3	7.4	7.8	8.3	7.5	7.9	8.4	7.8	7.9
16	8.3	7.5	7.9	8.4	7.4	7.9	8.3	7.5	7.9	7.8	7.6	7.7
17	8.3	7.5	7.9	8.4	7.5	7.9	8.3	7.5	7.9	7.8	7.6	7.7
18	8.3	7.5	7.9	8.3	7.5	7.9	8.3	7.5	7.9	8.1	7.6	7.7
19	8.3	7.5	7.9	8.4	7.6	8.0	8.2	7.6	7.9	8.0	7.5	7.8
20	8.4	7.6	7.9	8.5	7.5	8.0	8.3	7.6	7.9	8.4	7.7	8.0
21	8.3	7.6	7.9	8.5	7.6	8.0	8.1	7.5	7.8	8.4	7.8	8.1
22	8.2	7.6	7.8	8.4	7.6	8.0	8.2	7.6	7.8	8.3	7.8	8.0
23	8.2	7.6	7.8	8.3	7.8	8.0	8.1	7.5	7.7	8.4	7.8	8.0
24	8.3	7.6	7.8	8.2	7.4	7.8	8.1	7.5	7.7	8.4	7.8	8.1
25	7.9	7.4	7.7	9.0	7.4	7.9	8.0	7.6	7.7	8.2	7.7	7.8
26	7.6	7.3	7.4	8.7	7.4	7.7	8.1	7.5	7.7	7.9	7.7	7.7
27	7.8	7.3	7.5	7.6	7.3	7.5	8.4	7.5	7.8	8.0	7.6	7.8
28	8.3	7.3	7.7	7.9	7.3	7.5	8.3	7.6	7.9	8.2	7.8	8.0
29	8.4	7.3	7.8	8.1	7.3	7.7	8.5	7.5	8.0	8.3	7.8	8.0
30	8.4	7.3	7.8	8.3	7.3	7.8	8.4	7.5	7.9	8.3	7.8	8.0
31	---	---	---	8.4	7.3	7.8	8.2	7.6	7.8	---	---	---
MONTH	8.7	7.3	7.8	9.0	7.3	7.8	8.5	7.3	7.8	8.6	7.4	7.9
YEAR	9.2	7.2	7.9									

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	31.0	26.5	28.5	22.5	20.0	21.0	17.5	14.0	15.5	16.5	12.0	14.5
2	30.5	26.5	28.5	24.5	19.5	22.0	20.0	16.0	18.0	13.0	10.0	11.5
3	28.5	24.5	26.5	19.5	16.0	17.5	22.5	18.0	20.0	12.0	8.0	10.0
4	28.5	22.5	25.5	16.0	14.0	15.0	22.0	17.5	19.5	13.5	8.0	10.5
5	27.0	22.5	24.5	14.0	13.0	13.5	22.5	18.0	20.0	14.0	9.5	11.5
6	26.0	20.5	23.0	15.5	13.5	14.5	21.0	17.5	19.0	11.5	7.5	10.0
7	26.0	20.5	23.0	20.0	14.5	17.0	18.5	16.0	17.5	10.0	6.0	7.5
8	26.0	20.0	23.0	19.5	15.5	17.0	17.5	15.5	16.5	10.0	5.5	7.5
9	27.0	21.0	23.5	19.0	16.0	17.5	16.0	11.0	13.5	12.0	6.0	8.5
10	27.0	21.0	24.0	22.5	18.5	20.5	13.0	9.5	11.5	13.0	7.5	10.0
11	27.0	21.5	24.0	20.0	15.0	17.5	14.0	11.5	12.5	14.0	10.5	12.0
12	27.5	22.0	24.5	18.5	13.5	15.5	17.5	13.0	15.0	15.0	9.5	12.0
13	28.0	24.0	25.5	19.5	14.0	16.5	20.0	15.0	17.5	15.5	10.0	12.5
14	25.5	21.0	23.5	19.5	15.0	17.0	22.0	17.0	19.5	16.5	10.5	13.5
15	24.5	18.5	21.5	19.5	14.5	17.0	23.0	19.5	21.0	17.5	11.5	14.5
16	24.5	18.5	21.0	19.5	16.5	18.0	21.5	18.5	19.5	18.0	13.5	15.5
17	25.0	18.5	21.5	18.5	17.5	18.0	21.0	19.0	20.0	19.5	16.0	17.5
18	26.0	20.0	23.0	18.5	17.0	18.0	20.5	16.5	19.0	17.5	9.5	14.5
19	27.5	22.0	24.5	20.5	17.5	18.5	16.5	13.5	15.0	12.5	8.0	10.0
20	24.0	20.0	22.0	21.0	18.0	19.0	14.0	11.5	13.0	14.0	8.0	10.5
21	23.0	17.5	20.0	21.0	17.5	19.0	12.0	10.5	11.0	15.0	9.0	12.0
22	24.5	18.5	21.0	22.0	18.5	20.0	12.0	10.0	11.0	17.0	13.5	15.0
23	24.0	20.5	22.0	22.5	18.0	20.0	12.5	9.5	11.0	20.5	15.5	18.0
24	20.5	18.5	19.5	20.0	16.5	18.0	11.5	9.5	10.5	18.0	13.0	15.0
25	22.5	19.0	20.5	19.5	15.0	17.0	13.5	10.5	11.5	17.0	12.0	14.5
26	24.0	21.0	22.5	20.0	15.5	17.5	12.5	10.5	11.5	19.0	14.0	16.5
27	27.0	21.5	23.5	21.0	16.5	18.5	13.5	9.0	11.5	15.0	11.0	13.0
28	23.5	20.0	21.5	17.0	13.5	15.0	14.0	10.5	12.0	13.0	10.5	12.0
29	21.0	19.5	20.0	16.5	12.0	14.0	11.5	10.5	11.0	17.0	13.0	15.0
30	20.0	19.0	19.5	16.5	11.5	14.0	13.5	11.5	12.5	19.5	15.5	17.0
31	20.0	19.5	19.5	---	---	---	16.5	12.0	14.0	16.0	10.0	12.0
MONTH	31.0	17.5	23.0	24.5	11.5	17.5	23.0	9.0	15.0	20.5	5.5	12.5

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.0	7.0	8.5	11.5	9.5	11.0	21.0	16.0	18.5	27.0	18.0	22.0
2	7.0	5.0	6.0	16.0	8.5	12.0	21.0	15.0	17.5	24.5	22.0	23.0
3	7.0	4.5	5.5	18.0	10.5	14.0	22.5	16.0	19.0	28.0	22.5	24.5
4	9.0	3.5	5.5	18.0	14.5	16.5	24.5	19.0	21.0	28.5	23.0	25.5
5	8.5	5.5	7.0	22.5	18.0	19.5	20.5	13.5	17.0	29.0	23.5	26.0
6	14.0	8.0	11.0	24.0	16.0	20.0	17.0	13.5	15.0	27.0	25.0	25.5
7	17.0	11.0	14.0	16.5	11.0	14.0	20.0	13.0	16.0	27.0	24.5	25.5
8	19.5	14.0	16.5	14.0	9.0	11.5	24.0	13.5	18.5	28.0	23.5	25.0
9	20.0	14.5	17.0	15.5	8.5	11.5	26.0	16.0	21.0	29.0	23.5	25.5
10	22.0	17.5	19.0	17.0	8.5	12.5	26.0	18.0	22.0	29.5	24.5	26.0
11	19.0	14.5	17.0	18.5	10.5	14.0	25.0	21.0	22.5	27.5	24.0	25.5
12	17.0	12.0	14.5	19.0	12.0	15.0	27.0	21.0	23.0	29.5	24.0	26.5
13	17.5	13.0	15.0	22.0	14.5	18.0	28.0	20.0	23.5	31.0	24.5	27.5
14	20.0	12.5	16.0	24.5	18.0	20.5	27.5	22.0	24.5	31.0	24.5	27.0
15	19.5	14.0	16.5	25.0	19.0	21.5	24.5	18.0	21.0	31.0	24.5	27.0
16	17.5	11.5	14.5	26.0	20.5	23.0	24.0	17.0	20.5	31.0	25.0	27.5
17	18.0	10.5	14.0	27.0	19.5	23.0	25.5	19.0	22.0	31.0	25.0	27.5
18	19.0	14.0	16.0	22.0	17.0	19.5	29.0	21.5	24.5	31.0	25.0	27.5
19	20.5	14.5	17.5	21.5	14.0	17.5	29.5	23.0	26.0	31.5	25.0	27.5
20	22.0	15.0	18.0	21.0	13.5	17.0	28.0	24.5	26.0	32.0	25.0	28.0
21	23.5	15.5	19.5	22.0	13.0	17.5	28.0	24.0	25.5	32.5	26.0	29.0
22	24.5	17.5	21.0	22.5	15.5	19.0	25.0	23.5	24.0	32.5	26.0	29.0
23	26.0	20.0	22.0	19.0	17.5	18.5	27.0	20.0	23.5	31.5	25.5	28.0
24	22.0	17.0	19.5	22.5	18.0	19.5	27.5	19.0	23.0	30.0	25.5	27.5
25	23.5	19.5	21.0	20.0	14.5	17.5	29.0	21.0	24.5	30.0	25.5	27.5
26	22.5	20.5	21.0	14.5	11.5	12.5	27.5	22.5	25.0	29.0	25.5	27.0
27	23.5	20.5	21.5	12.0	11.0	11.5	28.0	24.0	25.5	27.0	23.5	25.5
28	20.5	13.0	17.0	19.0	11.0	14.5	29.0	23.5	26.0	30.0	25.0	27.0
29	13.0	10.0	11.5	17.0	13.0	15.0	25.5	20.5	22.0	33.0	26.0	29.0
30	---	---	---	24.0	16.5	19.5	25.0	17.5	20.5	32.5	27.0	29.0
31	---	---	---	22.5	16.0	19.0	---	---	---	31.0	26.5	28.0
MONTH	26.0	3.5	15.5	27.0	8.5	16.5	29.5	13.0	22.0	33.0	18.0	26.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29.5	25.5	27.5	34.5	27.0	30.5	35.5	27.0	30.5	27.5	25.0	26.5
2	32.5	27.0	29.5	35.0	27.5	31.0	35.5	27.5	31.0	31.5	25.5	28.0
3	32.0	27.5	29.5	34.5	27.5	31.0	35.0	27.5	30.5	33.5	26.5	29.5
4	33.0	26.0	29.5	34.5	27.5	31.0	34.0	26.0	29.5	30.0	26.5	28.5
5	33.5	26.5	29.5	35.0	27.5	31.0	34.0	26.5	29.5	31.0	27.5	28.5
6	33.0	26.5	29.0	35.5	27.5	31.0	33.0	26.5	29.5	31.5	26.0	28.5
7	28.0	24.5	27.0	35.0	28.0	31.0	35.0	27.0	30.0	32.0	26.5	29.0
8	31.5	24.5	27.5	34.5	28.0	31.0	33.5	27.0	30.0	28.5	25.0	27.0
9	32.0	24.0	28.0	34.5	28.5	31.0	35.0	27.0	30.5	29.0	25.5	27.5
10	32.0	25.5	28.5	32.0	27.5	29.5	33.0	27.5	30.0	31.5	27.5	29.0
11	33.0	25.0	28.5	34.0	28.0	30.5	35.5	27.0	30.5	32.5	25.5	28.5
12	34.0	26.5	29.5	34.5	28.0	30.5	36.5	28.0	31.5	31.0	25.5	28.5
13	35.0	27.5	30.5	35.0	27.5	30.5	34.5	29.0	31.5	29.5	26.5	28.0
14	35.0	28.0	31.0	35.0	27.5	30.5	34.5	28.0	30.5	30.0	26.5	28.0
15	34.5	27.5	30.5	34.5	28.0	30.5	33.5	26.5	29.5	27.5	24.0	26.0
16	35.0	27.5	31.0	34.5	27.5	30.0	34.0	27.0	30.0	30.0	25.0	27.5
17	35.5	28.0	31.5	34.0	27.0	30.0	34.0	27.0	30.0	31.5	26.0	28.5
18	35.5	28.0	31.5	33.5	27.0	30.0	33.5	26.5	29.5	32.5	27.5	29.0
19	35.5	28.5	31.5	34.5	27.0	30.0	32.0	26.5	28.5	33.0	27.0	30.0
20	36.0	28.5	32.0	35.0	26.5	30.0	34.0	26.0	29.0	32.5	27.0	29.5
21	34.5	28.5	31.0	35.0	26.5	30.0	32.0	26.5	29.0	33.0	28.0	30.0
22	32.5	28.5	30.0	34.5	26.5	30.0	29.0	26.5	28.0	31.0	27.5	29.0
23	33.0	28.5	30.0	34.5	27.5	30.5	30.0	26.5	27.5	32.5	27.0	29.0
24	34.0	28.0	30.5	35.0	28.0	31.0	31.5	26.0	28.0	33.5	26.5	29.5
25	30.0	28.0	29.0	35.0	25.5	30.0	29.0	26.5	27.5	27.0	24.5	26.0
26	31.0	27.0	28.5	31.0	25.5	28.5	30.0	26.5	28.0	29.5	25.5	27.5
27	31.5	27.5	29.0	33.0	26.5	29.0	31.0	26.0	28.0	28.0	22.0	25.5
28	33.5	27.5	30.0	34.5	27.0	30.0	31.5	27.5	29.0	26.0	19.5	22.5
29	33.5	27.5	30.0	33.5	28.5	30.5	31.5	27.5	29.0	26.5	19.0	22.5
30	33.0	27.0	30.0	34.5	27.5	30.5	31.5	27.0	28.5	26.0	19.5	22.5
31	---	---	---	34.5	27.0	30.0	28.5	25.0	27.5	---	---	---
MONTH	36.0	24.0	29.5	35.5	25.5	30.5	36.5	25.0	29.5	33.5	19.0	27.5
YEAR	36.5	3.5	22.0									

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.0	4.8	6.8	9.4	6.4	7.9	13.4	8.8	10.6	13.8	7.8	10.3
2	8.7	3.7	5.5	9.4	6.2	7.3	13.2	8.0	9.9	15.7	9.9	12.4
3	10.2	4.7	6.7	11.1	6.8	8.7	13.5	7.6	9.5	16.5	10.6	13.2
4	9.8	4.9	6.8	11.2	8.0	9.3	12.8	6.8	9.0	16.3	11.0	13.2
5	11.2	4.9	7.5	11.0	9.1	9.9	12.4	6.7	8.5	16.2	10.4	12.4
6	10.7	6.3	7.9	11.9	8.9	10.1	12.8	7.1	9.0	17.5	10.6	13.6
7	10.4	6.3	7.9	11.4	7.2	9.1	11.9	7.1	8.7	18.1	13.4	15.4
8	10.6	6.4	8.0	11.8	7.3	9.1	12.1	8.1	9.2	18.3	13.5	15.5
9	10.4	6.3	7.8	11.4	8.2	9.2	13.2	8.6	10.5	17.4	12.3	14.7
10	10.1	5.9	7.5	11.8	7.6	9.1	14.3	10.1	11.8	17.3	10.7	13.7
11	9.6	5.3	7.0	13.2	7.6	10.0	13.3	7.3	10.5	16.3	10.5	12.7
12	9.2	5.0	6.7	12.7	9.0	10.4	12.4	7.0	9.0	16.8	10.6	12.7
13	8.6	4.6	6.0	12.6	9.0	10.5	12.3	6.8	8.8	16.7	10.1	12.5
14	8.9	4.6	6.6	13.5	8.8	10.6	11.7	6.5	8.3	16.6	9.6	12.2
15	8.2	5.5	6.3	13.4	8.9	10.7	11.3	6.0	7.7	16.8	9.3	12.0
16	8.6	5.4	6.3	13.3	8.6	10.4	11.0	6.3	7.8	16.5	8.9	11.4
17	8.6	5.4	6.7	9.8	8.5	9.3	8.0	6.0	6.8	15.6	7.1	10.7
18	8.9	5.5	6.9	9.3	7.8	8.7	11.2	6.3	7.6	---	---	---
19	8.8	5.3	6.6	9.5	7.2	8.3	11.1	7.9	9.3	---	---	---
20	9.1	5.5	7.0	9.7	6.7	7.9	12.4	8.8	10.4	---	---	---
21	8.2	5.5	6.6	10.1	7.2	8.2	12.6	9.8	11.1	---	---	---
22	8.7	5.7	6.9	10.5	7.0	8.3	12.2	10.6	11.4	14.8	8.6	10.9
23	8.4	5.8	6.7	10.8	6.9	8.4	12.8	10.2	11.3	15.4	7.7	10.6
24	8.6	6.0	6.7	11.6	7.6	9.1	13.8	10.3	11.7	16.5	8.1	11.2
25	---	---	---	12.3	7.9	9.5	14.1	10.4	11.7	16.6	8.8	11.5
26	---	---	---	12.5	7.6	9.5	14.0	10.1	11.7	17.0	8.2	11.5
27	11.0	6.5	8.1	12.5	7.4	9.2	15.0	10.5	12.2	18.2	9.4	12.8
28	11.4	7.0	8.7	13.4	8.2	10.2	14.7	10.3	12.0	15.3	10.3	12.0
29	9.4	7.2	8.3	14.0	9.4	11.1	13.8	10.1	11.4	17.6	9.1	11.9
30	10.0	7.7	8.6	14.0	9.6	11.3	13.2	9.8	11.1	16.7	8.2	10.9
31	9.4	8.0	8.5	---	---	---	14.5	9.0	11.1	17.1	8.0	12.0
MONTH	11.4	3.7	7.2	14.0	6.2	9.4	15.0	6.0	10.0	18.3	7.1	12.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	15.8	10.9	13.0	11.3	9.6	10.3	10.1	5.0	7.6	9.6	4.5	6.8
2	19.4	12.9	15.6	12.1	8.6	10.3	14.2	5.4	9.6	10.8	4.0	6.5
3	20.1	14.7	16.9	12.8	7.8	10.0	13.6	4.6	8.6	10.7	3.9	6.7
4	19.6	15.1	16.9	11.4	7.1	8.8	13.0	4.5	7.8	11.1	3.3	6.7
5	19.0	13.7	15.9	13.0	6.0	8.6	9.8	4.8	7.4	11.4	2.7	6.5
6	18.8	10.7	14.4	13.2	5.6	8.4	11.0	7.1	9.2	10.6	2.2	6.3
7	18.8	9.4	13.0	15.2	7.5	11.1	13.7	6.9	9.8	10.7	2.5	6.3
8	18.2	8.5	12.2	16.3	9.6	12.5	13.1	5.9	9.1	10.6	3.1	5.8
9	17.7	7.9	11.4	16.6	10.0	12.9	15.9	5.9	10.9	10.4	3.1	6.3
10	17.4	7.0	10.7	17.1	9.6	12.8	16.2	6.0	10.9	11.4	3.0	6.6
11	18.5	6.8	11.6	17.1	8.7	12.2	16.0	5.0	10.1	6.5	3.6	5.1
12	19.3	8.7	12.8	16.7	7.6	11.2	15.8	5.3	9.8	10.1	3.6	6.2
13	14.8	8.5	11.3	15.7	6.5	10.1	13.7	4.9	9.6	12.2	2.9	7.4
14	17.6	7.8	11.8	14.4	5.7	9.2	16.3	4.7	10.3	17.5	3.1	9.6
15	18.4	6.5	11.9	14.5	5.4	9.1	16.6	4.9	11.1	17.1	3.7	11.3
16	19.0	7.4	12.7	14.1	5.1	8.4	17.1	5.8	11.4	14.5	5.0	10.0
17	17.9	9.0	12.6	14.3	4.7	8.5	16.7	4.9	10.8	15.6	4.2	9.9
18	17.6	7.4	11.0	15.2	5.2	9.8	15.9	4.6	10.0	15.2	4.1	9.5
19	16.0	6.5	10.2	15.1	6.8	10.2	15.1	3.4	8.7	15.0	3.3	9.2
20	17.4	6.7	10.8	13.7	6.0	9.3	15.4	3.0	8.3	14.7	3.9	9.0
21	17.3	6.3	10.4	13.7	6.0	9.3	16.3	3.5	8.8	14.2	3.6	9.2
22	17.1	5.7	10.0	12.4	5.8	8.5	12.3	3.9	6.5	17.9	4.6	11.1
23	15.6	4.8	9.4	10.2	5.5	7.4	10.5	2.2	6.2	18.6	3.5	10.6
24	16.6	6.1	10.5	11.5	4.4	7.1	14.8	3.6	8.1	18.7	4.0	10.8
25	16.4	5.4	10.0	13.5	4.1	9.0	15.8	2.6	9.2	19.0	4.8	11.0
26	14.1	5.2	8.7	12.5	7.8	10.0	15.6	4.2	9.9	18.9	4.2	10.5
27	14.5	5.0	8.6	13.6	9.0	10.7	13.7	4.5	9.0	9.9	3.6	6.8
28	15.0	5.6	9.2	12.5	6.3	9.6	16.0	4.6	9.8	---	---	---
29	12.2	8.4	10.2	11.3	4.5	7.9	8.8	6.5	7.9	---	---	---
30	---	---	---	13.7	4.5	8.3	9.7	5.6	7.5	8.6	4.4	6.5
31	---	---	---	13.9	5.2	9.1	---	---	---	9.9	3.5	6.2
MONTH	20.1	4.8	11.9	17.1	4.1	9.7	17.1	2.2	9.1	19.0	2.2	8.1

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.4	2.1	5.3	9.6	.9	5.4	11.4	2.3	6.7	8.3	6.2	7.1
2	8.2	2.7	5.1	9.2	1.0	5.1	10.1	1.8	5.9	6.3	5.4	5.9
3	7.3	2.4	5.4	9.0	1.0	4.7	10.0	2.1	5.9	7.6	5.0	6.2
4	9.4	1.7	5.5	9.8	1.5	5.3	10.2	2.7	6.4	7.1	5.6	6.5
5	11.1	2.4	6.5	9.7	1.8	5.6	10.1	3.3	6.3	8.9	6.2	7.3
6	11.3	3.3	7.1	9.7	1.8	5.6	9.7	2.7	6.1	10.6	6.0	8.0
7	7.8	3.4	5.8	9.2	2.5	5.7	10.7	3.0	6.2	12.5	6.3	8.8
8	10.3	3.6	7.0	9.3	2.5	5.9	10.3	2.2	6.0	9.1	6.0	7.6
9	11.9	4.3	8.0	9.5	2.7	6.1	10.5	2.8	6.6	8.9	7.1	7.8
10	12.4	4.5	8.4	9.3	2.5	5.9	10.7	3.4	6.7	8.2	6.5	7.4
11	12.6	4.1	8.3	9.4	3.1	6.1	11.7	3.5	7.5	10.1	6.5	7.9
12	12.0	3.7	7.8	9.5	3.3	6.3	11.0	3.3	7.3	12.5	6.8	9.0
13	11.8	3.7	7.2	9.8	3.3	6.4	8.2	3.2	5.8	13.4	6.6	9.1
14	11.5	3.6	7.1	9.1	3.2	6.3	11.4	3.9	6.9	13.8	7.1	9.7
15	12.2	3.6	7.3	9.2	2.7	5.9	12.1	4.8	7.9	9.4	7.8	8.2
16	12.2	3.7	7.4	9.6	3.0	6.6	12.8	4.5	8.1	7.8	6.4	7.2
17	11.9	3.4	7.2	9.7	3.4	6.6	12.4	4.3	8.0	8.2	6.5	7.2
18	12.0	2.7	6.6	9.5	3.1	6.5	12.3	4.3	7.9	9.1	6.4	7.3
19	10.6	1.5	5.9	9.8	3.5	6.7	11.7	4.9	7.9	11.3	6.1	8.1
20	9.7	2.1	5.5	10.5	3.3	7.0	12.9	4.6	8.0	12.2	6.3	8.4
21	8.8	2.1	5.1	10.4	3.7	7.1	9.9	3.7	6.2	12.1	6.9	8.7
22	8.2	3.0	4.8	13.1	4.0	8.6	10.4	4.3	6.9	11.0	6.5	8.6
23	8.1	2.2	4.8	13.2	7.5	10.1	10.5	4.7	6.8	11.8	6.9	8.9
24	8.6	2.3	4.9	13.6	4.3	8.7	10.5	5.7	7.5	11.9	6.9	9.2
25	6.2	1.9	3.9	13.8	3.7	8.1	10.1	5.0	7.2	9.4	8.2	8.8
26	5.7	3.6	4.8	8.0	4.4	5.9	10.9	6.6	8.0	8.8	7.2	8.1
27	6.0	3.6	5.2	6.7	4.2	5.3	12.2	6.2	8.2	9.6	7.2	8.3
28	8.4	2.3	5.4	7.4	4.1	5.4	11.0	6.1	8.3	11.0	9.5	10.1
29	9.1	1.5	5.3	9.2	2.0	5.5	12.8	4.9	8.3	12.3	9.4	10.9
30	9.5	1.7	5.6	10.7	2.4	6.3	11.4	5.1	7.5	12.8	8.3	10.9
31	---	---	---	11.4	2.8	6.9	8.3	4.9	6.4	---	---	---
MONTH	12.6	1.5	6.1	13.8	.9	6.4	12.9	1.8	7.1	13.8	5.0	8.2
YEAR	20.1	.9	8.8									

08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX

LOCATION.-Lat 29°30'57", long 98°25'51", Bexar County, Hydrologic Unit 12100301, on right bank at downstream side of eastbound bridge on Interstate Highway 410 in San Antonio, 1.0 mi west of Northeast School, 1.1 mi upstream from Perrin-Beitel Creek, and 2.7 mi east of San Antonio International Airport.

DRAINAGE AREA.--137 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder with concrete control. Datum of gage is 684.60 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. There are some diversions for irrigation upstream from gage. Flow is affected at times by discharge from the flood-detention pools of eleven floodwater-retarding structures with a combined detention capacity of 26,770 acre-ft. These structures control runoff from 74.6 mi² above this station. Recording rain gage at station with two additional recording rain gages in the watershed.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1853, 23 to 24 ft in October 1913. Flood in September 1921 reached a stage of 18 ft, and flood of Sept. 27, 1946, reached a stage of 18.2 ft, and are the second and third highest since 1899.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.00	.00	.00	.00	1.3	.00	.00	.08	.00	.00	1.7
2	1.9	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.10
3	.30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.03	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00
6	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.01	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00
8	.00	.00	.01	.00	.00	.00	.00	.00	.31	.00	.00	.12
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	.10	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	19
16	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.9
17	.00	.64	.06	.00	.00	.00	.00	.00	.00	.00	.00	.18
18	.00	1.7	.08	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09
21	.00	.00	.01	.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	.00	.00	.00	.00	.00	.06	71
25	.00	.00	.00	.00	.00	.00	.00	.00	1.3	.00	.00	103
26	.00	.00	.00	.00	.00	.00	.00	.00	1.6	.13	.00	3.3
27	.00	.00	.00	.00	.00	.00	.00	4.1	.03	6.2	.01	.16
28	.00	.00	.00	.00	.00	.00	.24	.61	.00	.77	.00	.00
29	.01	.00	.00	.00	.37	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.02	.00	---	.00	.00	.00	.00	.00	3.4	.00
31	.01	---	.00	.00	---	.00	---	.00	---	.00	9.3	---
TOTAL	2.36	2.62	0.18	0.00	0.37	1.35	0.30	4.81	3.43	7.10	12.77	202.66
MEAN	.076	.087	.006	.000	.013	.044	.010	.16	.11	.23	.41	6.76
MAX	1.9	1.7	.08	.00	.37	1.3	.24	4.1	1.6	6.2	9.3	103
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	4.7	5.2	.4	.00	.7	2.7	.6	9.5	6.8	14	25	402

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1996, BY WATER YEAR (WY)

MEAN	7.23	5.73	8.72	8.08	5.57	5.36	9.75	40.3	20.6	8.89	2.70	12.3
MAX	40.7	74.7	155	173	71.0	93.7	116	576	151	153	36.6	187
(WY)	1995	1978	1992	1968	1992	1992	1991	1993	1987	1973	1974	1973
MIN	.001	.008	.000	.000	.013	.000	.000	.000	.006	.000	.000	.000
(WY)	1992	1992	1962	1996	1996	1962	1984	1961	1984	1984	1986	1960

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1960 - 1996	
ANNUAL TOTAL	1241.78		237.95			
ANNUAL MEAN	3.40		.65		11.3	
HIGHEST ANNUAL MEAN					57.1	1993
LOWEST ANNUAL MEAN					.27	1962
HIGHEST DAILY MEAN	514	Sep 20	103	Sep 25	8680	May 5 1993
LOWEST DAILY MEAN	.00	Jan 15	.00	Oct 6	.00	Sep 1 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 17	.00	Oct 6	.00	Sep 1 1960
INSTANTANEOUS PEAK FLOW			901	Sep 24	28100	May 5 1993
INSTANTANEOUS PEAK STAGE			5.56	Sep 24	15.91	May 5 1993
ANNUAL RUNOFF (AC-FT)	2460		472		8210	
10 PERCENT EXCEEDS	2.0		.08		8.0	
50 PERCENT EXCEEDS	.00		.00		.75	
90 PERCENT EXCEEDS	.00		.00		.00	

08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: November 1968 to current year. Sediment analyses: November 1971 to September 1973. Water temperatures: November 1968 to current year. Bacteria analyses: May 1976 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
MAY												
27...	0940	14	112	6.6	24.5	4.8	59	9.1	K16000	9700	42	12
JUN												
07...	0945	0.93	97	7.6	23.5	7.8	93	--	K29000	14000	36	4

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)
MAY											
27...	14	1.6	2.4	0.2	3.4	30	8.4	3.4	72	65	40
JUN											
07...	13	0.87	1.8	0.1	2.2	32	7.1	2.3	76	56	24

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
MAY											
27...	0.880	0.880	0.880	0.440	2.6	1.3	0.86	1.3	1.7	0.310	0.190
JUN											
07...	0.780	0.780	0.780	0.380	2.1	0.92	0.72	1.1	1.3	0.250	0.160

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	ARSENIC TOTAL (UG/L AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)
MAY											
27...	16	<0.010	1	2	<10	<1	5	9	14	<0.10	5
JUN											
07...	21	<0.010	2	<1	<10	<1	2	7	2	<0.10	2

DATE	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)
MAY											
27...	<1	<1	80	<0.040	<0.1	<0.020	<0.060	<0.030	<0.80	<0.030	<2
JUN											
07...	<1	<1	40	<0.040	<0.1	<0.020	<0.060	<0.030	<0.80	<0.030	<2

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX

LOCATION.--Lat 29°21'25", long 98°24'45", Bexar County, Hydrologic Unit 12100301, on right bank at upstream side of bridge on Loop 13 at San Antonio, 1.4 mi east of Brooks Air Force Base, and 3.3 mi upstream from Rosillo Creek.

DRAINAGE AREA.--189 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 526.95 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Several small diversions above station. A recording rain gage is located in watershed above station. Most of low flow comes from artesian wells and springs within the city of San Antonio. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08178700. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Sept. 27, 1946, and Aug. 15, 1960, were about equal magnitude. Flood of Aug. 15, 1960, reached a stage of 26.8 ft, from floodmarks. Maximum stage since at least 1941, that of Sept. 27, 1973.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	12	9.9	6.2	5.0	34	7.1	7.0	4.0	1.8	.75	117
2	8.3	14	9.8	5.4	4.5	7.3	6.1	6.1	7.6	1.3	.45	16
3	6.0	10	9.9	5.4	4.4	4.7	6.7	7.8	7.1	1.1	.33	6.3
4	6.2	8.2	10	5.5	4.2	4.5	6.8	7.0	5.7	.85	.23	4.4
5	5.0	7.8	10	5.4	4.2	5.3	6.3	4.8	2.4	.61	.30	6.3
6	5.0	7.3	9.5	5.4	4.3	5.6	9.5	2.6	1.6	.90	.31	5.8
7	5.0	5.4	10	5.2	4.5	5.7	14	3.5	4.2	.95	.12	5.5
8	4.0	5.3	10	5.3	4.7	5.6	10	4.0	2.7	.86	.11	19
9	4.0	4.8	12	5.3	4.5	5.8	7.0	4.2	6.0	.96	.08	26
10	4.3	5.1	11	4.5	4.7	5.6	6.9	6.0	2.8	3.1	.07	7.4
11	4.2	7.8	9.9	5.0	4.7	5.8	6.0	7.5	2.3	6.0	.07	5.1
12	4.4	8.5	9.6	5.7	4.2	5.5	7.3	8.4	1.8	3.2	.20	3.8
13	4.6	8.0	10	6.3	3.9	5.7	7.4	4.3	1.6	1.6	.10	4.0
14	5.4	8.6	9.6	5.2	3.8	5.8	6.9	2.3	1.3	1.2	.09	3.5
15	6.2	8.5	10	5.0	4.5	6.3	6.6	2.2	1.1	1.0	.17	202
16	5.6	7.8	11	4.9	4.3	6.5	4.9	2.3	1.1	.59	.13	73
17	6.3	23	13	5.1	6.7	6.6	4.5	2.1	.57	.28	.10	16
18	6.5	17	11	8.3	5.6	6.5	5.0	1.5	.77	.28	.10	12
19	5.8	7.7	8.1	8.1	4.8	5.5	6.5	1.5	.58	.46	.37	6.3
20	6.6	4.4	7.2	7.3	4.3	4.5	8.0	1.1	.92	2.0	.40	7.1
21	7.1	3.9	6.6	5.1	6.8	5.5	7.3	1.3	.65	1.9	.31	7.4
22	6.9	5.1	9.3	4.7	6.3	6.3	8.2	1.5	2.0	1.1	.24	6.1
23	7.0	5.6	9.8	6.6	4.1	6.7	8.1	1.4	6.7	.67	.85	5.1
24	6.5	6.4	7.3	7.1	3.8	7.1	10	1.0	3.1	2.0	1.3	7.7
25	6.9	6.7	6.2	5.7	3.9	8.1	8.4	1.2	43	1.6	2.8	610
26	7.1	7.7	5.9	5.1	3.5	7.2	7.2	1.1	107	2.9	3.9	58
27	7.4	8.1	5.7	4.6	3.3	11	6.2	51	14	2.5	57	15
28	7.8	8.7	5.8	4.4	3.2	15	5.7	47	4.7	1.2	57	11
29	7.0	9.1	6.0	4.7	26	12	40	8.9	2.5	.83	15	6.9
30	8.3	9.4	6.7	4.5	---	9.2	16	3.7	1.9	1.3	13	5.6
31	9.3	---	7.8	5.3	---	7.8	---	2.4	---	1.1	169	---
TOTAL	190.4	251.9	278.6	172.3	152.7	238.7	260.6	206.7	241.69	46.14	324.88	1279.3
MEAN	6.14	8.40	8.99	5.56	5.27	7.70	8.69	6.67	8.06	1.49	10.5	42.6
MAX	9.3	23	13	8.3	26	34	40	51	107	6.0	169	610
MIN	4.0	3.9	5.7	4.4	3.2	4.5	4.5	1.0	.57	.28	.07	3.5
AC-FT	378	500	553	342	303	473	517	410	479	92	644	2540

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1996, BY WATER YEAR (WY)

MEAN	39.8	38.3	42.4	42.7	41.9	34.5	42.3	83.1	67.6	35.2	25.1	44.2
MAX	154	146	376	379	285	206	188	358	349	234	176	400
(WY)	1995	1978	1992	1968	1992	1992	1977	1972	1987	1973	1974	1973
MIN	6.14	6.35	8.99	5.56	5.27	7.70	7.80	5.08	1.64	1.49	1.87	5.65
(WY)	1996	1992	1996	1996	1996	1996	1984	1967	1967	1996	1963	1963

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1960 - 1996	
ANNUAL TOTAL	9691.6		3643.91			
ANNUAL MEAN	26.6		9.96		44.8	
HIGHEST ANNUAL MEAN					149	1992
LOWEST ANNUAL MEAN					9.96	1996
HIGHEST DAILY MEAN	1410	Jun 29	610	Sep 25	8080	Sep 27 1973
LOWEST DAILY MEAN	3.3	May 22	.07	Aug 10	.00	Aug 13 1967
ANNUAL SEVEN-DAY MINIMUM	4.4	Oct 7	.10	Aug 8	.10	Aug 8 1996
INSTANTANEOUS PEAK FLOW			1410	Sep 25	13100	Sep 27 1973
INSTANTANEOUS PEAK STAGE			12.80	Sep 25	28.83	Sep 27 1973
ANNUAL RUNOFF (AC-FT)	19220		7230		32470	
10 PERCENT EXCEEDS	21		11		57	
50 PERCENT EXCEEDS	8.3		5.6		20	
90 PERCENT EXCEEDS	5.2		.89		7.1	

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: November 1968 to current year. Sediment analyses: October 1968 to September 1973. Biological analyses: May 1989 to September 1995.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1987 to current year.
pH: January 1987 to current year.
WATER TEMPERATURE: January 1987 to current year.
DISSOLVED OXYGEN: January 1987 to current year.

INSTRUMENTATION.--Beginning January 1987, a four-parameter water-quality monitor continuously records specific conductnance, pH, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunction of the instrument or probe fouling and these days were deleted from the record. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,290 microsiemens Aug. 23, 1994; minimum, 39 microsiemens Nov. 9, 1990.
pH: Maximum, 8.7 units on Dec. 29, 1991; minimum, 7.3 units on many days during 1988, 1990, 1992, 1994, and 1996.
WATER TEMPERATURE: Maximum, 31.0°C July 17-20, 1988, July 30, 1993, July 17, 19, 1996; minimum, 0.0°C Dec. 24, 1989.
DISSOLVED OXYGEN: Maximum, 16.7 mg/L Jan. 27, 1988, Mar. 11, 1996; minimum, 0.6 mg/L July 27, 1996.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,220 microsiemens Oct. 31; minimum, 183 microsiemens Sept. 25.
pH: Maximum, 8.5 units Aug. 11; minimum, 7.3 units several days.
WATER TEMPERATURE: Maximum, 31.0°C July 17, 19; minimum, 4.5°C on Feb. 4, 5.
DISSOLVED OXYGEN: Maximum, 16.7 mg/L Mar. 11; minimum, 0.6 mg/L July 27.

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.	1995	190.4	1040	606	311	110	55	96	49	350
NOV.	1995	251.9	1060	621	422	110	76	99	67	360
DEC.	1995	278.6	1050	611	460	110	81	96	72	350
JAN.	1996	172.3	1020	594	276	100	48	93	43	350
FEB.	1996	152.7	1070	624	257	110	46	99	41	360
MAR.	1996	238.7	929	540	348	89	58	83	53	320
APR.	1996	260.6	987	575	404	99	70	90	63	340
MAY	1996	206.7	846	490	273	78	44	74	41	300
JUNE	1996	241.69	581	333	217	44	28	47	30	220
JULY	1996	46.14	818	472	59	72	9.0	70	8.7	290
AUG.	1996	324.88	437	248	218	28	25	33	29	170
SEPT	1996	1279.3	320	180	623	17	58	23	78	130
TOTAL		3643.91	**	**	3900	**	597	**	577	**
WTD.AVG.		10.0	680	393	**	61	**	59	**	240

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	817	780	798	1180	1160	1170	1110	1090	1100	1060	1010	1040
2	851	817	832	1170	1050	1100	1120	1090	1100	1010	1000	1010
3	859	781	842	1050	972	998	1090	1080	1090	1030	1010	1030
4	873	774	810	1010	994	1000	1080	1070	1070	1040	1030	1040
5	900	873	885	1050	1010	1030	1070	1050	1060	1040	1040	1040
6	903	881	891	1110	1050	1080	1070	1060	1070	1050	1030	1040
7	930	899	920	1130	1110	1120	1060	1040	1050	1040	1030	1040
8	947	930	938	1150	1130	1140	1070	1040	1060	1040	1020	1040
9	972	947	961	1150	1140	1140	1100	1060	1080	1040	1020	1030
10	991	939	984	1140	1130	1140	1060	1060	1060	1040	1030	1030
11	1060	990	1020	1170	1140	1150	1060	1030	1050	1050	1010	1040
12	1020	986	1010	1150	1130	1140	1050	1030	1040	1030	1000	1020
13	1000	988	994	1160	1150	1150	1100	1050	1080	1020	999	1010
14	1030	993	1020	1160	1150	1150	1110	1100	1100	1030	1010	1020
15	1040	1010	1030	1160	1150	1150	1110	1100	1100	1020	989	1000
16	1050	1020	1040	1190	1150	1180	1150	1080	1100	1030	997	1020
17	1060	1040	1050	1160	835	1080	1080	944	1040	1060	1030	1040
18	1080	1050	1070	888	806	860	1050	960	1020	1060	1030	1050
19	1100	1080	1090	850	797	835	1010	903	928	1050	960	1010
20	1110	1080	1100	797	737	756	937	896	912	974	966	970
21	1100	1080	1090	832	742	776	979	937	957	977	960	970
22	1110	1080	1100	921	832	880	1050	943	992	1010	968	989
23	1110	1090	1100	996	921	962	1050	997	1030	1060	1010	1040
24	1140	1100	1120	1050	996	1030	1010	954	967	1080	1020	1060
25	1150	1120	1130	1090	1050	1080	987	965	974	1020	975	987
26	1150	1140	1150	1120	1090	1110	1030	987	1010	982	942	956
27	1160	1150	1150	1140	1120	1130	1060	1030	1050	981	949	969
28	1190	1160	1170	1140	1120	1130	1070	1060	1060	1010	981	995
29	1160	1160	1160	1120	1110	1120	1070	1050	1060	1020	1010	1020
30	1180	1150	1160	1120	1100	1110	1060	1050	1060	1040	1020	1030
31	1220	1160	1180	---	---	---	1060	1050	1060	1050	1030	1040
MONTH	1220	774	1030	1190	737	1060	1150	896	1040	1080	942	1020

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1040	1030	1040	758	514	661	994	966	985	798	756	778
2	1040	1010	1030	706	512	595	1030	994	1020	844	798	824
3	1010	1000	1010	819	706	778	1050	1030	1040	860	828	847
4	1030	1010	1020	868	819	847	1070	1050	1060	828	787	805
5	1050	1030	1040	891	868	884	1090	1070	1080	810	775	787
6	1050	1040	1050	919	890	901	1100	1080	1090	849	764	810
7	1090	1040	1060	924	918	921	1100	1020	1060	904	822	859
8	1090	994	1020	939	924	930	1070	1020	1050	1030	910	967
9	1050	1030	1040	948	938	944	1020	943	980	1150	1030	1090
10	1060	1040	1050	981	948	963	967	946	956	1160	1070	1110
11	1080	1060	1070	996	973	986	1020	956	993	1120	985	1090
12	1080	1060	1070	1000	977	990	1060	1030	1050	1050	973	1010
13	1090	1060	1080	1010	971	991	1090	1060	1080	1050	933	987
14	1110	1080	1090	998	977	988	1100	1090	1090	951	875	936
15	1120	1090	1110	999	955	982	1090	1090	1090	---	---	801
16	1130	1100	1120	1000	967	990	1090	1080	1080	---	---	830
17	1120	1090	1110	1020	1000	1010	1100	1080	1090	920	846	877
18	1110	1090	1100	1020	1010	1020	1120	1100	1110	963	920	937
19	1110	1050	1080	1040	1020	1030	1130	1100	1110	1020	963	986
20	1060	1050	1060	1050	1030	1050	1130	1100	1120	1060	969	1010
21	1110	1060	1090	1060	1040	1050	1140	1130	1130	1080	1060	1070
22	1110	1080	1110	---	---	1060	1130	1070	1110	1080	1070	1080
23	1080	1030	1050	---	---	1050	1100	785	996	1090	1080	1080
24	1050	1030	1040	---	---	1070	1060	832	1010	1090	1020	1070
25	1090	1050	1070	1080	1060	1070	1120	1060	1100	1120	1050	1100
26	1120	1090	1110	1080	1050	1070	1120	1040	1090	1130	1080	1120
27	1140	1120	1130	1060	994	1050	1050	1030	1040	1170	628	1040
28	1150	1130	1140	1050	974	1020	1040	1000	1040	628	417	555
29	1150	558	1050	1040	909	951	1030	266	695	541	524	528
30	---	---	---	941	909	923	843	756	803	586	527	554
31	---	---	---	966	941	955	---	---	---	647	586	623
MONTH	1150	558	1070	1080	512	959	1140	266	1040	1170	417	908

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	702	607	645	558	502	523	837	815	827	281	204	242
2	919	597	833	610	556	575	816	800	806	318	281	303
3	807	628	674	661	584	622	801	791	795	362	318	341
4	691	622	656	705	589	653	793	789	792	408	362	384
5	632	602	610	740	636	696	795	791	793	504	408	454
6	644	608	620	801	724	757	801	794	796	592	504	557
7	655	449	598	846	800	818	802	791	799	596	512	552
8	569	316	420	876	810	845	808	797	803	631	204	520
9	1070	569	869	914	824	874	810	793	806	631	388	430
10	1070	921	985	1050	914	964	811	785	804	447	391	411
11	921	742	827	1020	572	873	813	777	788	407	391	396
12	742	732	735	887	759	823	817	813	815	510	407	456
13	789	739	752	874	679	795	817	808	814	684	510	588
14	833	787	806	679	623	642	823	812	818	685	650	662
15	885	789	839	626	618	622	834	823	827	658	245	419
16	912	843	887	---	---	600	850	834	839	301	247	266
17	---	---	878	---	---	610	857	844	850	347	294	319
18	923	841	868	---	---	630	869	856	861	410	336	378
19	---	---	882	---	---	650	891	869	878	524	370	437
20	923	869	897	849	688	734	905	890	896	498	429	452
21	---	---	904	1090	849	973	925	902	913	616	498	572
22	955	618	908	1130	1090	1110	930	871	922	605	535	563
23	1170	746	1000	1130	1060	1070	943	924	937	605	526	552
24	1200	1000	1140	1090	987	1060	973	942	952	591	526	545
25	991	300	790	987	864	919	1070	973	1010	642	183	264
26	462	300	407	939	837	874	1060	646	835	330	256	312
27	389	356	366	894	757	787	1170	521	726	424	398	407
28	422	383	404	765	740	749	635	379	505	475	423	449
29	443	415	429	784	765	776	386	365	374	480	461	470
30	502	443	471	808	783	788	471	386	418	532	479	507
31	---	---	---	838	808	822	474	218	286	---	---	---
MONTH	1200	300	737	1130	502	782	1170	218	783	685	183	440
YEAR	1220	183	905									

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.9	7.6	7.7	8.0	8.0	8.0	7.9	7.8	7.8	8.0	7.9	7.9
2	7.8	7.7	7.8	8.1	8.0	8.0	7.8	7.8	7.8	8.1	7.9	8.0
3	7.9	7.8	7.8	8.2	8.1	8.1	7.8	7.8	7.8	8.1	7.9	8.0
4	8.0	7.9	7.9	8.2	8.1	8.1	7.9	7.8	7.8	8.1	7.9	8.0
5	8.0	7.9	8.0	8.2	8.2	8.2	7.9	7.8	7.8	8.1	7.9	8.0
6	8.1	8.0	8.1	8.2	8.2	8.2	7.9	7.8	7.8	8.1	7.9	8.0
7	8.2	8.1	8.1	8.2	8.1	8.1	7.9	7.8	7.8	8.1	7.9	8.0
8	8.2	8.1	8.1	8.2	8.1	8.1	7.9	7.8	7.8	8.1	7.9	8.0
9	8.2	8.1	8.1	8.2	8.0	8.1	8.0	7.9	7.9	8.0	7.9	8.0
10	8.2	8.1	8.1	8.0	7.9	8.0	8.1	7.9	8.0	8.1	7.8	7.9
11	8.2	8.1	8.1	8.1	8.0	8.0	8.1	8.0	8.0	8.1	7.9	8.0
12	8.2	8.0	8.1	8.2	8.1	8.1	8.1	8.0	8.0	8.1	7.9	8.0
13	8.0	7.9	8.0	8.2	8.1	8.1	8.1	7.9	8.0	8.1	8.0	8.0
14	8.1	8.0	8.0	8.2	8.1	8.1	8.0	7.9	8.0	8.1	8.0	8.0
15	8.2	8.0	8.1	8.2	8.0	8.1	8.0	7.9	7.9	8.1	8.0	8.0
16	8.2	8.0	8.2	8.0	8.0	8.0	8.0	7.9	7.9	8.1	7.9	8.0
17	8.2	8.1	8.2	8.2	8.0	8.0	8.0	7.9	7.9	8.0	7.9	8.0
18	8.2	8.1	8.1	8.0	7.9	8.0	8.0	7.9	8.0	8.1	7.9	8.0
19	8.2	8.0	8.1	8.0	7.9	7.9	8.1	7.9	8.0	8.2	8.0	8.1
20	8.2	8.0	8.1	7.9	7.7	7.8	8.1	7.9	8.0	8.2	8.1	8.1
21	8.2	8.0	8.1	7.8	7.7	7.7	8.0	7.9	7.9	8.2	8.1	8.1
22	8.2	8.0	8.1	7.7	7.7	7.7	8.1	7.8	7.9	8.1	8.0	8.0
23	8.1	8.0	8.1	7.7	7.7	7.7	8.0	7.9	8.0	8.1	8.0	8.0
24	8.1	7.9	8.0	7.7	7.7	7.7	8.0	7.9	8.0	8.1	7.9	8.0
25	8.0	7.9	8.0	7.8	7.7	7.7	8.1	7.9	8.0	8.1	8.0	8.1
26	8.0	7.9	8.0	7.8	7.7	7.8	8.0	7.9	8.0	8.1	8.0	8.1
27	7.9	7.9	7.9	7.8	7.7	7.8	8.1	7.9	8.0	8.1	8.0	8.0
28	8.0	7.9	7.9	7.8	7.7	7.8	8.1	7.9	8.0	8.1	8.0	8.1
29	8.0	7.9	8.0	7.9	7.8	7.8	8.0	7.9	8.0	8.1	8.0	8.1
30	8.0	8.0	8.0	7.9	7.8	7.9	8.0	7.9	7.9	8.1	8.0	8.0
31	8.0	7.9	8.0	---	---	---	8.0	7.9	7.9	8.1	7.9	8.0
MONTH	8.2	7.6	8.0	8.2	7.7	8.0	8.1	7.8	7.9	8.2	7.8	8.0

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.1	8.0	8.1	7.9	7.8	7.9	8.1	7.9	8.0	7.9	7.8	7.8
2	8.2	8.1	8.1	7.9	7.8	7.8	8.0	7.8	7.9	7.8	7.8	7.8
3	8.2	8.1	8.2	8.0	7.9	8.0	8.0	7.8	7.9	7.8	7.7	7.7
4	8.2	8.1	8.2	8.0	7.9	8.0	8.0	7.9	7.9	7.7	7.7	7.7
5	8.2	8.1	8.1	8.0	7.9	7.9	7.9	7.8	7.9	7.7	7.6	7.7
6	8.1	8.1	8.1	8.0	7.8	7.9	8.0	7.9	7.9	7.6	7.6	7.6
7	8.1	7.8	8.0	8.0	7.9	7.9	8.1	7.9	8.0	7.9	7.6	7.7
8	7.9	7.8	7.9	8.2	7.9	8.0	8.1	8.0	8.1	7.9	7.8	7.9
9	7.9	7.8	7.8	8.2	8.0	8.1	8.0	8.0	8.0	7.9	7.9	7.9
10	7.9	7.8	7.8	8.3	8.1	8.2	8.0	7.9	8.0	8.0	7.9	8.0
11	7.9	7.8	7.8	8.4	8.1	8.2	8.2	7.8	7.9	8.0	8.0	8.0
12	8.0	7.8	7.9	8.4	8.1	8.2	7.9	7.6	7.8	8.0	7.9	7.9
13	8.0	7.8	7.9	8.3	8.0	8.2	7.9	7.9	7.9	7.9	7.9	7.9
14	8.0	7.8	7.9	8.2	8.0	8.1	7.9	7.9	7.9	8.0	7.8	7.9
15	7.9	7.8	7.9	8.1	7.9	8.0	8.0	7.9	7.9	8.0	7.8	7.9
16	7.9	7.8	7.9	8.0	7.8	7.9	7.9	7.9	7.9	8.1	7.8	7.9
17	8.0	7.9	7.9	8.0	7.8	7.9	7.9	7.9	7.9	7.9	7.9	7.9
18	8.0	7.9	7.9	7.9	7.8	7.9	7.9	7.9	7.9	7.9	7.8	7.9
19	7.9	7.9	7.9	8.0	7.8	7.9	7.9	7.8	7.9	7.8	7.7	7.8
20	7.9	7.8	7.9	8.0	7.9	7.9	7.9	7.8	7.9	8.0	7.8	7.8
21	8.0	7.8	7.9	8.0	7.9	8.0	7.9	7.9	7.9	8.0	7.9	7.9
22	8.0	7.9	7.9	---	---	---	8.0	7.9	7.9	8.0	7.9	7.9
23	7.9	7.9	7.9	---	---	---	8.0	7.6	7.8	8.0	7.9	7.9
24	7.9	7.8	7.9	---	---	---	8.3	7.7	8.0	8.0	7.9	7.9
25	7.9	7.8	7.9	---	---	---	8.2	7.9	8.0	8.0	7.8	7.9
26	7.9	7.8	7.9	---	---	---	8.1	8.0	8.0	7.9	7.8	7.8
27	7.9	7.8	7.8	---	---	---	8.0	7.9	8.0	8.1	7.7	7.9
28	8.0	7.8	7.9	8.2	8.1	8.1	8.1	7.9	8.0	7.8	7.7	7.8
29	8.1	7.9	8.0	8.1	8.0	8.1	8.1	7.8	8.0	7.8	7.8	7.8
30	---	---	---	8.2	8.0	8.1	7.9	7.8	7.9	7.8	7.7	7.8
31	---	---	---	8.1	8.0	8.1	---	---	---	7.8	7.7	7.7
MONTH	8.2	7.8	7.9	8.4	7.8	8.0	8.3	7.6	7.9	8.1	7.6	7.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.9	7.7	7.8	7.4	7.3	7.4	7.9	7.8	7.8	7.7	7.7	7.7
2	8.0	7.7	8.0	7.4	7.3	7.4	7.9	7.8	7.8	7.7	7.7	7.7
3	8.0	7.8	7.9	7.3	7.3	7.3	8.0	7.8	7.8	7.7	7.7	7.7
4	8.1	7.9	7.9	7.5	7.3	7.3	8.0	7.7	7.8	7.7	7.6	7.7
5	7.9	7.8	7.8	7.4	7.3	7.4	8.0	7.8	7.9	7.8	7.7	7.7
6	7.8	7.8	7.8	7.4	7.4	7.4	8.0	7.8	7.9	7.9	7.8	7.8
7	8.1	7.6	7.8	7.5	7.4	7.5	8.2	7.8	7.9	7.9	7.9	7.9
8	7.7	7.5	7.6	7.6	7.5	7.5	8.2	7.8	7.9	8.1	7.8	7.9
9	7.9	7.6	7.8	7.6	7.5	7.5	8.4	7.8	7.9	8.0	7.9	7.9
10	7.9	7.9	7.9	7.8	7.6	7.6	8.4	7.8	8.0	7.9	7.8	7.8
11	7.9	7.8	7.8	7.7	7.3	7.6	8.5	7.8	8.0	7.9	7.8	7.8
12	7.9	7.7	7.8	7.6	7.6	7.6	8.2	7.8	7.9	7.9	7.9	7.9
13	7.7	7.7	7.7	7.6	7.5	7.6	8.3	7.8	7.9	8.0	7.9	7.9
14	7.7	7.7	7.7	7.5	7.4	7.5	8.2	7.7	7.9	8.0	8.0	8.0
15	7.7	7.7	7.7	7.5	7.4	7.5	8.0	7.8	7.9	8.0	7.6	7.8
16	7.8	7.7	7.7	---	---	---	8.2	7.8	7.9	8.0	7.5	7.8
17	---	---	---	---	---	---	8.3	7.8	8.0	7.8	7.5	7.6
18	7.8	7.7	7.7	---	---	---	8.3	7.8	8.0	7.8	7.7	7.8
19	---	---	---	---	---	---	8.0	7.8	7.9	7.8	7.4	7.6
20	7.8	7.7	7.8	7.6	7.4	7.4	8.0	7.8	7.9	7.8	7.7	7.7
21	---	---	---	7.6	7.5	7.6	7.8	7.6	7.8	7.9	7.8	7.8
22	8.1	7.7	7.8	7.7	7.6	7.6	7.8	7.5	7.6	7.9	7.8	7.9
23	7.9	7.5	7.8	8.1	7.6	7.8	7.6	7.5	7.5	7.9	7.8	7.8
24	7.9	7.9	7.9	7.8	7.7	7.8	7.6	7.5	7.6	8.0	7.8	7.9
25	7.9	7.5	7.8	7.9	7.8	7.8	7.7	7.6	7.6	8.1	7.7	7.8
26	7.7	7.5	7.7	7.9	7.7	7.9	7.7	7.6	7.6	7.9	7.7	7.8
27	7.7	7.6	7.6	7.8	7.6	7.7	7.9	7.7	7.8	7.7	7.7	7.7
28	7.7	7.4	7.5	7.8	7.7	7.8	7.8	7.7	7.7	7.7	7.7	7.7
29	7.4	7.3	7.3	7.8	7.7	7.8	7.7	7.7	7.7	7.8	7.7	7.8
30	7.4	7.3	7.3	7.8	7.8	7.8	7.8	7.7	7.8	7.8	7.8	7.8
31	---	---	---	7.9	7.8	7.8	7.8	7.5	7.6	---	---	---
MONTH	8.1	7.3	7.7	8.1	7.3	7.6	8.5	7.5	7.8	8.1	7.4	7.8
YEAR	8.5	7.3	7.9									

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	25.0	24.0	24.5	20.0	19.0	19.0	13.5	12.0	12.5	14.0	13.0	13.5
2	25.0	24.5	24.5	21.0	19.5	20.5	15.5	13.5	14.5	13.0	11.0	12.0
3	24.5	23.5	24.0	20.0	17.0	18.5	18.0	15.5	16.5	11.0	9.0	9.5
4	23.5	22.0	22.5	17.0	14.5	15.5	17.5	16.5	17.0	9.5	8.0	8.5
5	22.0	21.0	21.5	14.5	13.5	13.5	18.0	16.5	17.0	10.0	8.0	9.0
6	21.0	19.5	20.0	14.0	13.5	13.5	17.5	16.5	17.0	10.0	9.0	9.5
7	20.0	18.5	19.0	15.5	14.0	14.5	17.0	16.0	16.5	9.0	7.0	7.5
8	19.5	18.0	19.0	16.0	15.0	15.5	16.0	15.0	15.5	7.0	5.5	6.0
9	20.0	18.5	19.5	16.0	14.5	15.5	15.5	12.5	14.0	7.5	5.0	6.5
10	20.5	18.5	19.5	18.0	16.0	17.0	12.5	10.5	11.0	8.5	6.0	7.5
11	20.5	19.0	19.5	18.0	15.5	16.5	12.0	10.0	11.0	10.0	8.5	9.5
12	21.0	19.5	20.0	15.5	14.0	14.5	13.5	11.5	12.5	10.5	8.5	9.5
13	22.0	20.5	21.0	14.5	13.5	14.0	15.5	13.0	14.5	11.0	9.5	10.0
14	21.5	20.5	21.0	14.5	14.0	14.5	17.5	15.5	16.5	11.5	10.0	10.5
15	20.5	18.5	19.0	14.5	13.5	14.0	19.0	17.5	18.0	12.5	10.5	11.5
16	18.5	17.0	17.5	15.5	14.5	14.5	18.5	18.0	18.5	13.5	11.5	12.5
17	18.5	17.0	17.5	17.0	15.5	16.0	19.0	18.0	18.5	15.5	13.5	14.5
18	19.0	17.5	18.0	16.5	15.5	16.0	19.0	17.0	18.5	15.5	12.5	14.5
19	20.5	18.5	19.5	17.0	16.0	16.5	17.0	14.0	15.5	12.5	9.0	10.5
20	20.0	18.5	19.5	17.5	17.0	17.0	14.0	12.0	12.5	10.0	8.5	9.0
21	18.5	17.0	17.5	17.5	16.5	17.0	12.0	10.5	11.0	11.0	9.0	10.0
22	18.5	17.0	17.5	17.5	16.5	17.0	10.5	10.0	10.0	13.5	11.0	12.0
23	19.5	18.5	19.0	18.0	17.0	17.5	10.5	9.5	10.0	16.5	13.5	15.0
24	19.5	18.0	18.5	17.5	16.0	16.5	9.5	9.0	9.5	16.0	13.5	15.0
25	18.5	18.0	18.0	16.0	14.0	15.0	10.5	9.5	10.0	13.5	12.0	12.5
26	20.0	18.5	19.5	15.5	14.0	14.5	10.5	9.5	10.0	14.5	13.0	13.5
27	21.5	20.0	20.5	16.0	14.5	15.5	10.0	9.0	9.5	13.5	11.5	12.5
28	21.5	20.0	20.5	16.0	14.0	15.0	10.5	9.5	10.0	11.5	10.0	11.0
29	20.5	19.0	19.5	14.0	12.0	13.0	10.0	9.0	9.5	13.5	11.5	12.5
30	19.0	18.5	19.0	12.5	11.0	12.0	11.5	10.0	10.5	15.5	13.0	14.5
31	19.0	18.5	18.5	---	---	---	13.5	11.5	12.5	15.5	11.5	13.5
MONTH	25.0	17.0	19.5	21.0	11.0	15.5	19.0	9.0	13.5	16.5	5.0	11.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.5	8.5	9.5	12.0	10.0	11.0	18.0	16.5	17.5	20.5	19.0	19.5
2	8.5	6.5	7.5	11.5	9.0	10.0	17.5	16.0	16.5	21.0	20.0	20.5
3	6.5	5.5	6.0	14.0	11.0	12.5	17.5	16.5	17.0	22.0	21.0	21.5
4	6.0	4.5	5.5	15.5	13.0	14.5	19.5	17.5	18.5	23.5	22.0	22.5
5	6.5	4.5	5.5	18.0	15.5	17.0	19.0	16.0	17.5	24.0	22.5	23.5
6	10.0	6.5	8.0	20.0	17.5	18.5	16.0	14.5	15.0	24.0	23.5	23.5
7	13.0	9.5	11.0	18.0	15.0	16.0	15.0	13.0	14.0	24.0	23.5	24.0
8	15.5	12.5	13.5	15.0	11.5	12.5	16.0	14.0	15.0	24.0	23.5	23.5
9	16.0	14.0	15.0	12.0	10.0	11.0	17.5	14.5	16.0	24.5	23.5	24.0
10	18.0	15.5	16.5	12.0	9.0	10.5	19.0	16.5	17.5	25.0	24.0	24.5
11	17.5	15.5	16.5	13.5	10.0	11.5	20.0	18.5	19.0	25.0	23.5	24.0
12	15.5	13.5	14.0	15.0	11.5	13.0	21.5	19.5	20.5	24.5	24.0	24.0
13	14.0	12.0	13.0	17.5	13.5	15.0	21.5	19.5	20.5	25.0	23.5	24.0
14	15.0	12.0	13.0	19.5	16.5	17.5	22.0	21.0	21.5	25.0	24.5	24.5
15	15.0	13.0	14.0	21.0	18.5	19.5	21.5	19.5	20.5	25.5	24.5	25.0
16	15.0	13.0	13.5	22.0	19.5	20.5	19.5	18.0	18.5	25.5	25.0	25.0
17	13.5	11.0	12.5	21.5	19.5	20.5	19.5	18.0	18.5	25.5	25.0	25.5
18	14.5	12.5	13.5	20.5	18.5	19.5	21.5	19.5	20.5	26.0	25.0	25.5
19	16.5	14.0	15.0	18.5	16.5	17.0	23.5	21.5	22.0	26.0	25.0	25.5
20	17.0	14.5	15.5	17.0	15.0	15.5	23.5	22.5	23.0	26.5	25.0	25.5
21	18.0	15.0	16.5	16.0	13.5	15.0	24.0	22.5	23.0	26.5	25.5	26.0
22	19.5	17.0	18.0	---	---	---	24.0	23.0	23.5	26.5	25.5	26.0
23	21.0	18.5	19.5	17.5	16.0	17.0	23.0	21.0	21.5	26.5	25.5	26.0
24	20.0	18.0	19.0	19.0	17.0	18.0	21.0	19.5	20.5	26.5	25.5	26.0
25	20.5	18.5	19.5	18.5	16.5	17.0	22.5	20.0	21.0	26.0	26.0	26.0
26	20.5	19.5	20.0	16.5	13.0	14.5	22.5	21.5	22.0	26.0	26.0	26.0
27	21.0	20.5	20.5	13.0	11.5	12.5	22.5	22.0	22.5	26.5	25.0	26.0
28	20.5	16.5	18.5	14.0	11.5	13.0	24.0	22.5	23.0	26.0	24.0	25.0
29	16.5	9.5	13.5	14.5	13.5	14.0	23.5	20.5	21.5	26.5	25.5	26.0
30	---	---	---	17.5	14.5	16.0	20.5	18.0	19.0	27.5	26.5	27.0
31	---	---	---	18.0	16.5	17.5	---	---	---	27.0	26.5	26.5
MONTH	21.0	4.5	14.0	22.0	9.0	15.5	24.0	13.0	19.5	27.5	19.0	24.5

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.0	26.0	26.5	27.5	27.0	27.0	28.0	27.5	27.5	26.0	25.5	26.0
2	27.0	26.5	26.5	27.5	27.0	27.5	28.5	27.5	28.0	26.0	25.0	25.5
3	26.5	26.0	26.5	27.5	26.5	27.5	28.5	27.5	28.0	26.5	26.0	26.0
4	26.5	26.0	26.5	27.5	26.5	27.0	28.5	27.0	27.5	26.5	26.0	26.5
5	27.0	26.0	26.5	27.5	26.0	27.0	28.5	27.5	27.5	26.5	26.0	26.5
6	27.0	26.5	27.0	27.5	26.5	27.0	28.5	27.5	27.5	26.5	25.5	26.0
7	27.0	25.0	26.0	28.0	27.0	27.5	29.5	27.5	28.0	26.0	25.5	26.0
8	25.0	23.5	24.5	28.0	27.0	27.5	29.0	27.0	27.5	27.0	25.0	25.5
9	25.0	24.0	24.5	30.0	27.5	28.0	29.0	26.5	27.5	27.0	25.5	26.0
10	26.0	24.5	25.0	28.0	27.5	28.0	28.5	26.5	27.0	27.0	26.0	26.5
11	26.5	25.0	25.5	28.0	27.0	27.5	30.0	26.0	27.5	26.5	25.0	25.5
12	27.0	26.0	26.5	28.5	27.5	28.0	29.0	27.0	27.5	25.5	24.5	25.0
13	28.0	26.5	27.0	28.5	27.5	28.0	29.0	27.0	28.0	25.5	25.0	25.0
14	28.0	27.0	27.5	28.5	27.5	28.0	28.5	26.5	27.5	25.0	24.5	25.0
15	28.0	27.0	27.5	28.5	27.5	28.0	27.5	25.5	26.5	25.0	23.5	24.5
16	28.0	26.5	27.0	28.0	27.5	28.0	28.0	26.0	26.5	25.5	23.5	24.5
17	30.0	26.5	27.5	31.0	26.5	28.5	28.0	26.0	26.5	26.5	25.0	25.5
18	28.0	26.5	27.5	28.5	26.0	27.5	28.0	25.5	26.5	27.0	26.0	26.5
19	28.5	27.0	27.5	31.0	27.5	28.0	27.0	26.5	26.5	27.0	26.5	27.0
20	28.5	27.0	28.0	28.5	27.5	28.0	27.5	26.0	26.5	27.0	26.5	27.0
21	29.5	26.0	27.5	28.5	27.5	28.0	27.0	25.5	26.0	27.0	26.5	26.5
22	28.0	27.5	27.5	28.5	27.5	28.0	26.0	25.5	26.0	27.0	26.0	26.5
23	28.0	27.0	27.5	28.5	27.5	28.0	26.0	25.5	25.5	27.0	26.5	26.5
24	28.0	27.0	27.5	28.5	28.0	28.0	26.0	25.0	25.5	27.5	26.5	27.0
25	28.0	27.0	27.5	29.0	28.0	28.5	25.5	25.0	25.0	26.5	23.5	24.5
26	27.5	27.0	27.0	28.0	27.5	27.5	25.5	25.0	25.0	24.5	24.5	24.5
27	27.5	26.5	27.0	28.0	27.0	27.5	27.0	25.0	26.0	25.0	23.5	24.5
28	27.5	26.5	27.0	28.0	27.0	27.5	27.0	25.5	26.0	23.5	21.0	21.5
29	27.5	26.5	27.0	27.5	27.0	27.5	27.0	26.0	26.5	21.0	20.0	20.5
30	27.5	27.0	27.0	28.0	27.0	27.5	26.5	26.0	26.5	20.5	19.5	20.0
31	---	---	---	28.0	27.0	27.5	26.5	26.0	26.0	---	---	---
MONTH	30.0	23.5	27.0	31.0	26.0	27.5	30.0	25.0	27.0	27.5	19.5	25.5
YEAR	31.0	4.5	20.0									

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.0	5.3	5.7	4.5	3.8	4.1	8.2	6.7	7.4	11.0	8.6	9.4
2	5.9	5.1	5.5	4.9	4.4	4.6	7.9	6.6	7.2	11.8	7.5	9.3
3	5.4	4.3	4.8	4.6	4.1	4.4	7.5	6.1	6.6	12.7	7.9	10.4
4	4.9	4.2	4.6	5.4	4.2	4.7	7.4	5.3	6.1	13.9	9.3	11.5
5	4.9	4.2	4.6	5.9	4.8	5.3	7.2	5.7	6.2	13.6	10.3	11.6
6	5.8	4.9	5.4	6.0	5.2	5.7	7.5	5.1	6.0	14.1	9.8	11.4
7	6.3	5.5	6.0	6.0	5.1	5.7	7.1	5.3	6.1	15.1	10.4	12.3
8	6.3	5.7	6.0	5.7	5.0	5.4	7.3	5.3	6.1	16.3	12.0	13.7
9	6.1	5.4	5.8	5.5	4.7	5.1	8.7	5.8	6.9	15.0	10.9	12.7
10	6.1	5.2	5.7	5.3	4.5	4.9	10.4	7.1	8.5	16.1	11.1	13.2
11	6.1	5.3	5.8	4.9	3.9	4.2	11.0	8.2	9.3	15.8	11.6	13.3
12	6.2	5.2	5.7	5.3	3.7	4.3	10.7	8.0	9.2	12.9	9.3	10.8
13	6.0	5.2	5.7	5.8	4.2	5.0	9.9	7.6	8.5	12.5	9.3	10.6
14	5.8	5.0	5.5	5.7	4.4	5.1	9.3	6.8	7.6	12.8	9.5	10.6
15	6.2	4.8	5.5	5.8	4.4	5.1	8.2	5.9	6.7	12.6	9.3	10.5
16	6.6	5.2	5.9	5.7	4.6	5.2	8.3	5.4	6.3	12.4	8.9	10.1
17	6.7	5.3	6.1	6.1	4.6	5.5	7.3	5.1	5.9	10.7	8.0	9.1
18	6.6	5.4	6.1	6.0	5.7	5.9	7.3	5.6	6.3	10.2	7.2	8.4
19	6.4	5.4	5.9	5.7	4.9	5.4	8.4	5.6	6.8	11.9	8.4	9.6
20	6.1	5.0	5.3	5.0	3.8	4.4	9.5	6.6	7.7	12.8	9.2	10.7
21	6.0	4.7	5.3	---	---	---	9.5	7.5	8.3	13.0	9.5	10.8
22	6.1	4.8	5.5	---	---	---	10.1	8.4	9.1	11.5	9.2	10.1
23	5.7	4.6	5.0	---	---	---	11.5	9.4	10.1	10.4	7.6	8.9
24	5.0	4.0	4.5	5.2	4.1	4.8	11.9	9.8	10.4	10.5	7.1	8.3
25	5.2	4.2	4.7	6.1	4.5	5.2	12.6	9.6	10.7	11.1	7.1	8.9
26	5.3	4.3	4.8	6.6	5.0	5.7	12.9	9.3	10.8	11.0	8.4	9.3
27	4.9	3.9	4.4	6.5	4.9	5.7	13.1	9.6	11.1	10.9	7.1	8.8
28	4.5	3.6	4.0	6.4	4.8	5.4	13.6	9.5	11.3	10.2	7.3	8.8
29	4.3	3.1	3.6	7.4	5.3	6.1	12.1	9.3	10.8	11.3	8.1	9.4
30	4.2	3.6	3.8	8.1	6.3	7.0	11.3	9.4	10.0	10.1	7.9	8.7
31	4.3	3.6	4.0	---	---	---	11.8	9.0	9.9	9.5	6.4	8.1
MONTH	6.7	3.1	5.2	8.1	3.7	5.2	13.6	5.1	8.2	16.3	6.4	10.3

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.1	7.3	8.6	9.4	8.9	9.1	8.5	5.7	7.3	---	---	---
2	11.6	8.9	10.0	9.5	8.7	9.1	8.3	5.4	6.8	---	---	---
3	13.7	10.0	11.6	9.7	8.5	9.0	8.1	5.8	6.9	---	---	---
4	14.8	10.8	12.8	8.8	7.5	8.2	7.8	6.1	6.8	---	---	---
5	14.0	11.9	12.8	8.2	6.7	7.3	7.0	4.5	5.2	---	---	---
6	13.8	11.1	12.3	7.6	5.7	6.5	7.5	5.0	6.0	2.6	1.7	2.0
7	13.8	9.8	11.7	9.0	5.2	6.9	9.0	5.8	8.0	2.5	.8	2.0
8	12.1	9.2	10.8	11.6	6.7	8.8	9.4	8.3	8.7	2.9	2.2	2.5
9	11.4	7.6	9.3	13.4	8.6	10.7	8.9	7.2	7.7	3.0	2.0	2.4
10	10.5	7.3	8.6	15.3	9.7	11.9	7.2	5.4	6.2	3.5	2.7	3.2
11	10.3	6.6	8.1	16.7	9.9	12.9	6.6	3.8	5.3	3.7	2.9	3.3
12	10.9	6.4	8.6	15.9	9.8	13.0	6.6	5.5	5.9	4.2	3.3	3.9
13	11.6	7.7	9.4	14.4	9.4	12.0	5.8	4.9	5.4	3.5	3.0	3.3
14	11.7	8.1	9.8	12.7	8.2	10.4	5.2	4.2	4.8	3.1	2.2	2.8
15	10.8	8.0	9.1	10.5	6.4	8.5	5.1	4.0	4.6	3.3	2.4	2.8
16	11.2	7.5	9.1	9.9	5.6	7.5	5.6	4.2	4.9	4.0	2.4	3.0
17	11.7	7.8	9.7	8.4	4.9	6.7	5.9	5.4	5.6	4.6	3.1	4.0
18	10.4	8.9	9.4	7.1	4.6	5.9	5.9	5.1	5.5	---	---	---
19	10.8	7.7	9.1	8.1	4.5	6.1	5.6	4.4	5.0	---	---	---
20	10.6	7.4	8.9	9.1	5.8	7.1	5.5	4.4	4.9	---	---	---
21	9.8	6.9	8.3	10.2	6.6	8.3	5.1	4.2	4.7	3.2	1.7	2.5
22	9.6	7.0	7.9	---	---	---	6.1	4.0	4.9	2.0	1.1	1.5
23	9.1	6.4	7.5	---	---	---	8.4	1.2	4.1	1.7	.8	1.2
24	8.6	5.6	7.0	---	---	---	6.9	2.2	4.0	2.0	1.2	1.5
25	8.1	5.6	6.9	7.8	5.9	7.0	---	---	---	1.9	1.0	1.5
26	7.8	4.9	6.0	8.0	5.9	6.7	---	---	---	2.1	1.6	1.8
27	6.3	4.6	5.4	8.8	6.7	7.6	---	---	---	5.4	1.2	2.5
28	7.3	4.4	5.5	10.9	7.6	7.2	---	---	---	5.5	4.5	5.1
29	10.5	5.9	7.7	9.4	8.3	8.9	---	---	---	4.6	3.9	4.2
30	---	---	---	10.7	7.6	8.8	---	---	---	4.1	2.6	3.1
31	---	---	---	8.9	6.8	7.9	---	---	---	2.7	1.8	2.2
MONTH	14.8	4.4	9.0	16.7	4.5	8.6	9.4	1.2	5.8	5.5	.8	2.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	3.2	2.0	2.6	3.5	2.4	3.1	4.4	3.0	3.5	11.4	10.4	10.9
2	4.6	2.2	4.2	3.5	2.4	2.9	4.9	3.0	3.7	11.3	8.8	9.7
3	5.3	4.4	4.9	2.7	1.9	2.2	5.3	2.8	3.6	9.3	8.2	8.8
4	5.2	4.5	4.9	2.4	1.3	1.7	6.7	2.6	3.7	8.9	7.7	8.3
5	4.8	4.1	4.3	2.3	.8	1.7	6.0	2.4	3.4	11.7	8.5	10.3
6	4.3	2.6	3.4	2.6	1.6	2.1	4.7	2.2	3.1	12.2	10.4	11.2
7	5.4	2.5	3.9	3.4	2.2	2.8	7.6	1.7	3.6	12.9	10.8	11.7
8	3.7	1.0	2.2	3.8	2.6	3.1	6.7	1.5	3.2	12.6	9.1	11.3
9	7.5	3.5	6.2	3.0	1.2	2.3	8.0	1.3	3.4	11.7	9.4	10.3
10	7.2	6.6	6.9	4.5	2.2	2.8	8.7	1.1	3.6	---	---	---
11	6.6	4.9	5.7	4.5	1.6	3.5	11.6	.7	4.4	---	---	---
12	5.9	4.4	5.1	4.0	3.1	3.4	6.0	1.4	3.0	---	---	---
13	5.6	4.3	4.9	3.2	1.7	2.5	7.8	1.0	2.9	---	---	---
14	5.1	4.1	4.6	2.7	2.1	2.4	8.2	.7	2.9	---	---	---
15	5.5	3.9	4.3	2.8	1.6	2.2	6.1	.8	2.8	7.1	5.6	6.2
16	4.7	3.7	4.2	2.5	1.9	2.2	7.3	1.3	3.3	7.7	6.4	7.2
17	4.7	3.0	3.9	2.4	1.2	1.8	8.7	1.2	3.9	8.3	6.1	7.2
18	5.1	3.3	4.2	3.0	1.0	1.8	8.7	.9	3.8	6.2	5.6	6.0
19	7.1	3.8	4.5	3.8	1.2	2.3	4.4	2.1	2.8	5.9	2.8	4.5
20	5.8	3.9	4.7	5.2	2.4	3.4	4.4	1.4	2.6	5.6	4.5	5.1
21	6.1	3.9	4.7	5.6	3.7	4.9	7.2	1.5	3.7	5.9	5.0	5.4
22	5.6	3.4	4.5	6.1	4.6	5.1	7.8	2.3	4.4	5.9	5.2	5.4
23	7.3	2.6	5.6	6.6	3.1	4.5	4.9	2.7	3.4	6.5	4.7	5.4
24	7.3	5.8	6.6	4.7	3.5	4.1	5.2	2.8	3.8	6.7	5.8	6.2
25	8.3	5.0	6.2	5.0	3.9	4.6	6.0	3.8	4.7	8.5	4.5	6.9
26	6.4	5.0	6.0	5.0	3.1	4.2	7.0	5.1	5.9	8.6	8.2	8.5
27	6.2	5.3	5.7	3.1	.6	1.7	10.8	7.0	10.1	7.3	6.9	7.1
28	5.4	4.1	4.8	2.3	1.0	1.6	11.1	8.6	10.1	8.0	7.3	7.8
29	4.1	3.3	3.6	2.9	1.1	1.7	10.6	8.3	9.5	7.7	6.8	7.1
30	3.6	2.5	3.2	3.5	2.2	2.8	10.9	8.3	9.2	7.3	7.1	7.2
31	---	---	---	4.7	2.9	3.6	11.3	8.5	9.9	---	---	---
MONTH	8.3	1.0	4.7	6.6	.6	2.9	11.6	.7	4.6	12.9	2.8	7.8
YEAR	16.7	.6	6.3									

08178880 MEDINA RIVER AT BANDERA, TX

LOCATION.--Lat 29°43'25", long 99°04'11", Bandera County, Hydrologic Unit 12100302, on left bank, 40 ft downstream from centerline of State Highway 173 at Bandera, 1.9 mi upstream from Bandera Creek, and 5.6 mi downstream from Indian Creek.

DRAINAGE AREA.--427 mi².

PERIOD OF RECORD.--October 1982 to current year.
Water-quality records.--Chemical, biochemical, and pesticide analyses: January 1983 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 1,189.46 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. There are several small diversions upstream from station. Telephone telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1880, 46.62 ft Aug. 2, 1978.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	88	58	61	36	44	28	17	24	6.3	.08	17
2	96	154	60	55	40	43	24	18	18	6.2	.03	11
3	93	118	63	52	38	40	24	17	12	6.1	.01	8.5
4	89	110	59	51	38	36	24	16	10	5.5	.00	11
5	85	102	56	50	38	42	27	16	9.4	3.5	.00	21
6	79	101	55	47	39	46	30	16	8.5	3.3	.00	30
7	73	94	54	46	41	34	41	17	10	3.0	.00	33
8	79	84	54	47	42	31	61	17	8.8	3.5	.00	27
9	71	77	52	48	42	29	55	18	8.5	3.4	.00	22
10	72	78	50	49	42	30	49	18	8.1	5.2	.00	19
11	68	71	50	47	36	31	38	26	8.2	5.0	.00	18
12	65	67	53	45	32	32	43	24	8.8	5.8	.00	16
13	61	69	56	44	32	34	35	22	7.9	4.8	.00	14
14	56	66	58	45	33	34	31	24	8.0	3.0	.00	12
15	53	60	58	45	35	34	27	19	7.0	1.5	.00	87
16	52	60	59	44	32	33	25	17	6.0	1.3	.00	165
17	64	68	59	46	31	33	25	14	5.9	1.1	.00	108
18	68	88	67	46	32	32	25	12	6.1	.71	.01	73
19	64	92	73	41	35	28	24	11	5.8	.54	.01	52
20	59	86	62	42	35	26	22	11	6.3	.43	.06	41
21	46	80	57	44	36	26	22	7.6	6.1	.47	.08	34
22	45	80	55	44	34	26	22	5.1	6.4	.44	.20	30
23	45	70	54	46	35	26	22	4.6	5.9	.31	.33	28
24	48	64	55	43	33	27	20	5.1	6.0	.08	1.4	30
25	47	59	56	42	31	27	20	10	5.2	.94	3.4	53
26	48	58	54	43	31	26	19	6.0	8.2	.47	8.8	24
27	48	58	53	41	33	29	18	12	9.6	.07	3.4	23
28	47	50	52	40	33	33	19	13	12	.06	2.2	21
29	46	49	51	41	43	35	20	10	9.4	.05	1.9	21
30	52	46	54	41	---	36	18	12	7.1	.04	9.2	22
31	58	---	61	39	---	31	---	18	---	.07	31	---
TOTAL	1975	2347	1758	1415	1038	1014	858	453.4	263.2	73.18	62.11	1071.5
MEAN	63.7	78.2	56.7	45.6	35.8	32.7	28.6	14.6	8.77	2.36	2.00	35.7
MAX	98	154	73	61	43	46	61	26	24	6.3	31	165
MIN	45	46	50	39	31	26	18	4.6	5.2	.04	.00	8.5
AC-FT	3920	4660	3490	2810	2060	2010	1700	899	522	145	123	2130

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1996, BY WATER YEAR (WY)

MEAN	97.5	87.5	182	144	144	161	114	180	324	126	48.9	74.5
MAX	630	373	1278	638	922	985	547	696	2785	440	156	249
(WY)	1987	1987	1992	1992	1992	1992	1992	1987	1987	1988	1987	1986
MIN	25.7	27.3	27.0	28.4	35.8	32.7	28.6	14.6	8.77	2.36	2.00	6.80
(WY)	1985	1994	1994	1990	1996	1996	1996	1996	1996	1996	1996	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1983 - 1996	
ANNUAL TOTAL	27022.7		12328.39			
ANNUAL MEAN	74.0		33.7		140	
HIGHEST ANNUAL MEAN					560	1987
LOWEST ANNUAL MEAN					33.7	1996
HIGHEST DAILY MEAN	1280	Sep 22	165	Sep 16	15600	Jun 3 1987
LOWEST DAILY MEAN	2.6	Aug 25	.00	Aug 4	.00	Aug 4 1996
ANNUAL SEVEN-DAY MINIMUM	4.0	Aug 23	.00	Aug 4	.00	Aug 4 1996
INSTANTANEOUS PEAK FLOW			214	Sep 15	55800	Jun 3 1987
INSTANTANEOUS PEAK STAGE			5.53	Sep 15	24.90	Jun 3 1987
INSTANTANEOUS LOW FLOW			.00	Aug 4	.00	Aug 4 1996
ANNUAL RUNOFF (AC-FT)	53600		24450		101600	
10 PERCENT EXCEEDS	110		67		266	
50 PERCENT EXCEEDS	64		31		60	
90 PERCENT EXCEEDS	24		.87		19	

08180640 MEDINA RIVER AT LA COSTE, TX

LOCATION.--Lat 29°19'26", long 98°48'46", Medina County, Hydrologic Unit 12100302, at downstream side of bridge on Farm Road 471, 1.0 mi north of La Coste, 5.0 mi upstream from Sherer Creek, and 27.4 mi upstream from mouth.

DRAINAGE AREA.--805 mi², of which 634 mi² is above dam forming Medina Lake.

PERIOD OF RECORD.--December 1986 to current year.
Water-quality record.--Chemical and biochemical analyses: February 1987 to August 1995.
SPECIFIC CONDUCTANCE: January 1987 to September 30, 1995.
pH: January 1987 to September 30, 1995.
WATER TEMPERATURE: January 1987 to September 30, 1995.
DISSOLVED OXYGEN: January 1987 to September 30, 1995.

GAGE.--Water-stage recorder. Datum of gage is 667.15 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Flow is regulated by Medina Lake and by Medina Diversion Lake. A large part of the streamflow is lost into the Edwards and associated limestones where the Balcones Fault crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. There are several small diversions below Medina Diversion Dam. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	64	36	29	25	32	29	25	33	35	29	28
2	42	47	37	27	25	30	29	25	33	35	29	23
3	37	39	37	27	26	29	29	26	38	33	29	21
4	37	37	37	27	27	29	29	26	34	33	29	18
5	37	37	37	27	27	29	30	26	33	32	29	20
6	36	38	37	27	27	29	36	26	33	33	29	30
7	35	39	37	26	27	27	32	27	33	34	30	21
8	35	39	37	25	27	25	30	27	34	33	30	20
9	34	39	36	25	27	25	29	29	34	33	31	106
10	32	39	34	25	27	25	28	28	33	65	31	47
11	31	38	34	25	27	25	27	35	33	46	31	24
12	30	37	34	24	25	26	27	31	33	39	31	18
13	29	38	34	24	26	26	25	29	33	37	31	15
14	28	38	33	26	27	26	25	28	33	35	31	14
15	28	37	32	25	27	26	24	27	33	34	30	33
16	28	38	31	25	27	26	23	26	33	32	30	23
17	28	50	31	25	27	26	24	25	33	31	29	17
18	30	51	30	25	27	26	25	24	32	31	29	15
19	36	42	29	23	28	23	24	23	32	31	28	14
20	33	38	27	24	29	23	24	23	32	30	28	13
21	31	37	27	24	29	24	24	22	32	29	29	13
22	32	36	27	25	29	24	24	22	32	29	31	14
23	34	35	27	25	29	25	24	22	34	30	35	14
24	35	34	27	25	30	27	24	22	35	30	40	13
25	34	34	26	25	29	28	24	24	36	30	35	12
26	34	34	25	25	29	28	24	23	36	30	36	15
27	36	34	25	24	29	28	24	27	37	30	34	20
28	34	33	25	24	29	30	25	31	37	30	32	21
29	32	33	26	24	31	29	25	31	35	31	26	23
30	33	33	28	25	---	30	25	30	35	31	28	24
31	37	---	28	25	---	30	---	30	---	30	30	---
TOTAL	1039	1168	971	782	799	836	792	820	1014	1042	950	689
MEAN	33.5	38.9	31.3	25.2	27.6	27.0	26.4	26.5	33.8	33.6	30.6	23.0
MAX	42	64	37	29	31	32	36	35	38	65	40	106
MIN	28	33	25	23	25	23	23	22	32	29	26	12
AC-FT	2060	2320	1930	1550	1580	1660	1570	1630	2010	2070	1880	1370

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1996, BY WATER YEAR (WY)

MEAN	44.7	52.6	82.6	166	301	272	163	306	693	148	65.5	48.8
MAX	84.8	138	319	647	2256	1943	1052	1335	4718	702	213	125
(WY)	1988	1993	1992	1992	1992	1992	1992	1992	1987	1987	1987	1987
MIN	23.5	21.4	21.6	25.2	24.9	24.3	26.4	25.5	17.7	22.7	21.9	18.8
(WY)	1992	1990	1990	1996	1991	1990	1996	1990	1990	1989	1989	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1987 - 1996	
ANNUAL TOTAL	13472		10902			
ANNUAL MEAN	36.9		29.8		135	
HIGHEST ANNUAL MEAN					836	1992
LOWEST ANNUAL MEAN					29.1	1989
HIGHEST DAILY MEAN	489	Jun 29	106	Sep 9	18900	May 30 1987
LOWEST DAILY MEAN	25	Mar 29	12	Sep 25	12	Dec 12 1989
ANNUAL SEVEN-DAY MINIMUM	26	Dec 23	13	Sep 19	13	Dec 9 1989
INSTANTANEOUS PEAK FLOW			320	Sep 9	24600	May 30 1987
INSTANTANEOUS PEAK STAGE			7.58	Sep 9	24.05	May 30 1987
ANNUAL RUNOFF (AC-FT)	26720		21620		97970	
10 PERCENT EXCEEDS	43		37		343	
50 PERCENT EXCEEDS	34		29		39	
90 PERCENT EXCEEDS	27		24		24	

08181400 HELOTES CREEK AT HELOTES, TX

LOCATION.--Lat 29°34'42", long 98°41'29", Bexar County, Hydrologic Unit 12100302, 42 ft to left and 44 ft downstream from centerline of bridge on State Highway 16, 0.1 mi northwest of Helotes, and 8.6 mi upstream from mouth.

DRAINAGE AREA.--15.0 mi².

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

REVISED RECORDS.--WRD TX-73-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 1,014.82 ft above sea level.

REMARKS.--Records good. An undetermined amount of flow is diverted for domestic use above station, and some streamflow enters the Edwards and associated limestones through the Balcones Fault Zone in the vicinity of the gage. Rain gage at station. No water-quality data collected this year due to no flow conditions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1923, 13.7 ft in 1927, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 140 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	3.5	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00
2	.00	.01	.00	.00	.00	e.00	.00	.00	.65	.00	.00	.00
3	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.02
4	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.27	.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	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.35
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.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	e.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.04
25	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	e.00	.00	.00	.00	.03	.00	.00	.00
27	.00	.00	.00	.00	e.00	.00	.00	.04	.00	.00	.00	.00
28	.00	.00	.00	.00	e.00	.00	.06	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.42	.00
31	.71	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.71	3.51	0.00	0.00	0.00	0.00	0.26	0.31	0.68	0.00	0.42	0.41
MEAN	.023	.12	.000	.000	.000	.000	.009	.010	.023	.000	.014	.014
MAX	.71	3.5	.00	.00	.00	.00	.20	.27	.65	.00	.42	.35
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1.4	7.0	.00	.00	.00	.00	.5	.6	1.3	.00	.8	.8
CFSM	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
IN.	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1996, BY WATER YEAR (WY)

MEAN	4.84	2.08	4.26	2.04	3.94	3.53	3.46	7.66	14.2	4.16	.95	1.86
MAX	66.7	16.4	79.0	31.0	66.3	32.3	40.0	66.6	142	84.4	13.5	36.1
(WY)	1974	1977	1992	1992	1992	1985	1973	1992	1987	1973	1971	1973
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1979	1971	1971	1969	1971	1971	1983	1989	1980	1969	1968	1969

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1968 - 1996	
ANNUAL TOTAL	136.65		6.30			
ANNUAL MEAN	.37		.017		4.46	
HIGHEST ANNUAL MEAN					28.3	1992
LOWEST ANNUAL MEAN					.003	1984
HIGHEST DAILY MEAN	21	Apr 5	3.5	Nov 1	950	Jul 16 1973
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Jun 30 1968
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Jul 4 1968
INSTANTANEOUS PEAK FLOW			24	Oct 31	7680	Jul 16 1973
INSTANTANEOUS PEAK STAGE			2.03	Oct 31	10.80	Jul 16 1973
ANNUAL RUNOFF (AC-FT)	271		12		3230	
ANNUAL RUNOFF (CFSM)	.025		.001		.30	
ANNUAL RUNOFF (INCHES)	.34		.02		4.04	
10 PERCENT EXCEEDS	.00		.00		6.8	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated

08181440 INGRAM RD. OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX

LOCATION.--Lat 29°26'25", long 98°39'26", Bexar County, Hydrologic Unit 12100302, 445 ft. south of the intersection of Ingram Rd. and Richland Hills Dr. on the east side of the northbound lane of Ingram Rd.

DRAINAGE AREA.-- 0.0218 mi².

PERIOD OF RECORD.-- Chemical and biochemical analyses: December 1993 to current year.

REMARKS.--Water-quality samples and associated discharge data were collected for selected storm events from storm sewer systems draining urban basins. This study is in cooperation with the city of San Antonio to fulfill requirements (by EPA) for the Texas Department of Transportation in applying for a National Pollution Discharge Elimination System (NPDES) storm-water discharge permit.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	PRECIP-ITATION TOTAL INCHES/ STORM	ELAPSED TIME OF STORM (HOURS)	STORM WATER FLOW (MGD)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	PH WATER WHOLE LAB (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
APR 05...	1228	--	--	--	--	--	--	--	--	66	--	2200
APR 05-05	1230	0.26	5.6	1.5	82	172	8.4	7.8	17.5	--	6.1	--
MAY 27-27	0720	0.86	1.4	5.7	69	125	8.7	7.8	22.0	--	10	--
27...	0724	--	--	--	--	--	--	--	--	67	--	9400

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO
APR 05...	--	--	--	--	--	--	--	--	--	--	--	--
APR 05-05	--	140	--	--	--	248	410	53	1.3	2.6	4	0.1
MAY 27-27	--	27	0	59	54	840	39	10	0.38	1.1	8	0.1
27...	5900	--	--	--	--	--	--	--	--	--	--	--

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	ANTIMONY, TOTAL (UG/L AS SB)	ARSENIC TOTAL (UG/L AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)
APR 05...	--	--	--	--	--	--	<10.0	--	--	--	--	--
APR 05-05	4.1	5.4	1.3	--	--	--	--	3	<10	<1	8	5
MAY 27-27	2.3	3.3	1.1	2.2	0.700	0.110	--	5	<10	<1	22	19
27...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CYANIDE, TOTAL EPA (MG/L AS CN)	CYANIDE TOTAL (MG/L AS CN)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, TOTAL RECOV-ERABLE EPA (UG/L AS AG)	THAL-LIUM, TOTAL (UG/L AS TL)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)
APR 05...	<0.010	<0.010	--	--	--	--	--	<0.500	<10	--	17	<1
APR 05-05	--	--	10	<0.10	7	<4	<1	--	--	100	--	--
MAY 27-27	--	--	17	<0.10	14	<1	<1	--	--	120	--	--
27...	--	<0.010	--	--	--	--	--	--	--	--	35	<1

DATE	PHENOLS TOTAL (UG/L)	ACRO-LEIN TOTAL (UG/L)	ACRYLO-NITRILE TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMO-BENZENE WATER, WHOLE, TOTAL (UG/L)	METHANE BROMO CHLORO-WAT UNFLTRD REC (UG/L)	BROMO-FORM TOTAL (UG/L)	BENZENE N-BUTYL WATER UNFLTRD REC (UG/L)	BENZENE SEC BUTYL-WATER UNFLTRD REC (UG/L)	BENZENE TERT-BUTYL-WATER UNFLTRD REC (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)
APR 05...	<1	<40.0	<40.0	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400
APR 05-05	--	--	--	--	--	--	--	--	--	--	--	--
MAY 27-27	--	--	--	--	--	--	--	--	--	--	--	--
27...	1	<40.0	<40.0	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500

08181440 INGRAM RD. OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	O-CHLORO-TOLUENE WATER WHOLE TOTAL (UG/L)	TOLUENE P-CHLOR WATER UNFLTRD REC (UG/L)	DIBROMO CHLORO-PROPANE WATER WHOLE TOT.REC (UG/L)	DI-BROMO-METHANE WATER WHOLE RECOVER (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI CHLORO-PRO-PENE, WAT, WH TOTAL (UG/L)
APR 05...	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<2.00	<0.400	<0.400	<0.400	<0.400	<0.400
APR 05-05	--	--	--	--	--	--	--	--	--	--	--	--
MAY 27-27	--	--	--	--	--	--	--	--	--	--	--	--
27...	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<2.70	<0.500	<0.500	<0.500	<0.500	<0.500

DATE	BENZENE O-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-PHENYL-HYDRA-ZINE WATER TOT.REC (UG/L)	CIS-1,2-DI-CHLORO-ETHENE WATER TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPANE WAT. WH TOTAL (UG/L)	2,2-DI CHLORO-PRO-PANE WAT, WH TOTAL (UG/L)
APR 05...	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	--	<0.400	<0.400	<0.400	<0.400	<0.400
APR 05-05	<0.400	<0.400	<0.400	--	--	--	<5.00	--	--	--	--	--
MAY 27-27	<0.500	<0.500	<0.500	--	--	--	<5.00	--	--	--	--	--
27...	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	--	<0.500	<0.500	<0.500	<0.500	<0.500

DATE	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)	ISO-PROPYL-BENZENE WATER WHOLE REC (UG/L)	P-ISO-PROPYL-TOLUENE WATER WHOLE REC (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL TERT-BUTYL ETHER WAT UNF REC (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	BENZENE N-PROPY WATER UNFLTRD REC (UG/L)	STYRENE TOTAL (UG/L)
APR 05...	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	0.300	<0.400	<0.400	<0.400
APR 05-05	--	--	--	<0.400	--	--	--	--	--	<0.400	--	--
MAY 27-27	--	--	--	<0.500	--	--	--	--	--	<0.500	--	--
27...	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500

DATE	ETHANE, 1112-TETRA-CHLORO-WAT UNF REC (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	1,2,3-TRI-CHLORO BENZENE WAT, WH REC (UG/L)	BENZENE 1,2,4-TRI-CHLORO-WAT UNF REC (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	123-TRI CHLORO-PROPANE WATER WHOLE TOTAL (UG/L)	FREON-113 WATER UNFLTRD REC (UG/L)
APR 05...	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400
APR 05-05	--	--	--	--	--	<0.400	--	--	--	--	--	--
MAY 27-27	--	--	--	--	--	<0.500	--	--	--	--	--	--
27...	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500

DATE	BENZENE 124-TRI METHYL UNFILT RECOVER (UG/L)	BENZENE 135-TRI METHYL WATER UNFLTRD REC (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	ANTHRA-CENE TOTAL (UG/L)	BENZI-DINE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZO K FLUOR-AN-THENE TOTAL (UG/L)
APR 05...	<0.400	<0.400	<0.400	<0.400	--	--	--	--	--	--	--	--
APR 05-05	--	--	--	--	<5.00	<5.00	<5.00	<40.0	<10.0	<10.0	<10.0	<10.0
MAY 27-27	--	--	--	--	<5.00	<5.00	<5.00	<40.0	<10.0	<10.0	<10.0	<10.0
27...	<0.500	<0.500	<0.500	<0.500	--	--	--	--	--	--	--	--

DATE	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER UNFLTRD RECOVER (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)
APR 05...	--	--	--	--	--	--	--	--	--	--	--	--
APR 05-05	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	<30.0	<5.00	<5.00	<5.00	<10.0	<10.0
MAY 27-27	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	<30.0	<5.00	<5.00	<5.00	<10.0	<10.0
27...	--	--	--	--	--	--	--	--	--	--	--	--

08181440 INGRAM RD. OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	3,3'-DICHLOROBENZIDINE TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	DIETHYLPHTHALATE TOTAL (UG/L)	DIMETHYLPHTHALATE TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	DI-N-BUTYLPHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L)	2,4-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	DI-N-OCTYLPHTHALATE TOTAL (UG/L)	BIS(2-ETHYLHEXYL)PHTHALATE TOTAL (UG/L)
APR 05...	--	--	--	--	--	--	--	--	--	--	--	--
APR 05-05	<20.0	<5.00	<5.00	<5.00	<5.00	<5.00	<30.0	<20.0	<5.00	<5.00	<10.0	<25.0
MAY 27-27	<20.0	<5.00	<5.00	<5.00	<5.00	<5.00	<30.0	<20.0	<5.00	<5.00	<10.0	37.0
27...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	CYCLOPENTADIENHEXACHLORO-UNFLTRD RECOVER (UG/L)	ETHANEHEXACHLORO-WATER UNFLTRD RECOVER (UG/L)	INDENO(1,2,3-CD)PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	BENZENENITRO-WATER UNFLTRD RECOVER (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)
APR 05...	--	--	--	--	--	--	--	--	--	--	--	--
APR 05-05	<5.00	<5.00	<5.00	<5.00	<5.00	<10.0	<5.00	<5.00	<5.00	<5.00	<30.0	<5.00
MAY 27-27	<5.00	<5.00	<5.00	<5.00	<5.00	<10.0	<5.00	<5.00	<5.00	<5.00	<30.0	<5.00
27...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PYRENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	P,P' DDT, TOTAL (UG/L)	ALPHA BHC TOTAL (UG/L)	BETA BENZENEHEXACHLORIDE TOTAL (UG/L)	DELTA BENZENEHEXACHLORIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)
APR 05...	--	--	--	--	--	--	--	--	--	--	--	--
APR 05-05	<5.00	<30.0	<5.00	<5.00	<5.00	<20.0	<0.040	<0.100	<0.030	<0.030	<0.090	<0.030
MAY 27-27	<5.00	<30.0	<5.00	<5.00	<5.00	<20.0	<0.040	<0.100	<0.030	<0.030	<0.090	<0.030
27...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CHLORDANE CIS WATER WHOLE TOTAL (UG/L)	CHLORDANE TRANS WATER WHOLE TOTAL (UG/L)	CHLORDANE, TECHNICAL TOTAL (UG/L)	P,P' DDD, TOTAL (UG/L)	P,P' DDE, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN-I WATER WHOLE REC (UG/L)	ENDOSULFAN II TOTAL (UG/L)	ENDOSULFAN SULFATE TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	ENDRIN ALDEHYDE TOTAL (UG/L)
APR 05...	--	--	--	--	--	--	--	--	--	--	--
APR 05-05	<0.100	<0.100	<0.100	<0.100	<0.040	<0.020	<0.100	<0.040	<0.600	<0.060	<0.200
MAY 27-27	<0.100	<0.100	<0.100	<0.100	<0.040	<0.020	<0.100	<0.040	<0.600	<0.060	<0.200
27...	--	--	--	--	--	--	--	--	--	--	--

DATE	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	AROCLOR 1016 PCB TOTAL (UG/L)	AROCLOR 1221 PCB TOTAL (UG/L)	AROCLOR 1232 PCB TOTAL (UG/L)	AROCLOR 1242 PCB TOTAL (UG/L)	AROCLOR 1248 PCB TOTAL (UG/L)	AROCLOR 1254 PCB TOTAL (UG/L)	AROCLOR 1260 PCB TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
APR 05...	--	--	--	--	--	--	--	--	--	--	--
APR 05-05	<0.030	<0.800	<2.00	<0.100	<1.00	<0.100	<0.100	<0.100	<0.100	<0.100	<0.050
MAY 27-27	<0.030	<0.800	<2.00	<0.100	<1.00	<0.100	<0.100	<0.100	<0.100	<0.100	<0.050
27...	--	--	--	--	--	--	--	--	--	--	--

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX

LOCATION.--Lat 29°19'47", long 98°35'02", Bexar County, Hydrologic Unit 12100302, on left bank between bridges on Interstate Highway 35 in San Antonio, 1.7 mi northeast of the intersection of Interstate Highway 35 and Loop 410, and 11.8 mi upstream from mouth.

DRAINAGE AREA.--219 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is 573.49 ft above sea level.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	3.9	6.9	6.6	7.5	16	2.9	2.6	2.9	.98	1.1	14
2	8.8	3.7	7.5	5.4	5.8	7.6	3.3	2.3	1.4	1.3	1.1	4.1
3	4.7	3.2	6.4	6.8	6.8	7.1	3.6	2.5	4.1	1.1	.89	3.1
4	3.8	3.0	6.4	7.4	7.3	6.0	3.9	2.3	2.7	1.1	.63	2.8
5	3.9	3.1	6.6	7.7	7.1	5.7	4.6	2.5	1.7	1.1	.57	3.3
6	3.6	3.8	6.9	13	8.3	5.8	11	2.1	1.3	.67	.57	2.9
7	3.6	3.8	7.5	17	8.2	5.0	5.3	3.0	1.3	.69	.58	2.9
8	3.6	4.1	9.5	11	8.0	4.3	3.6	2.5	1.5	.68	1.2	29
9	3.2	4.3	8.3	8.9	7.4	3.7	3.2	3.1	1.3	.94	1.0	124
10	2.7	3.6	7.7	7.7	7.0	4.4	3.6	2.1	1.0	1.1	1.0	16
11	3.4	4.4	7.3	8.5	6.5	4.6	3.4	7.8	1.1	2.3	.86	5.9
12	3.3	4.7	8.0	8.5	5.4	5.1	3.4	3.5	1.2	1.2	.54	4.0
13	3.2	4.6	7.2	8.5	6.4	4.8	2.8	1.9	1.2	1.1	.66	3.5
14	2.9	4.5	7.1	8.2	7.1	5.2	2.5	2.0	.93	1.1	.87	3.4
15	2.6	4.7	8.4	7.7	6.5	4.3	2.1	1.7	.87	.73	1.0	120
16	2.9	4.7	7.4	6.9	5.8	4.5	2.4	1.8	.99	1.0	1.0	29
17	3.5	73	9.5	8.2	5.7	4.1	2.4	2.0	.89	1.1	.99	9.0
18	3.8	46	11	8.1	6.0	3.2	2.4	2.1	.64	1.3	.87	5.0
19	3.6	16	9.5	8.2	6.1	3.1	1.2	1.7	.94	1.1	.76	4.4
20	3.0	9.3	7.9	8.2	5.3	3.6	1.9	1.6	1.5	1.1	1.4	4.0
21	2.9	8.6	7.8	7.2	6.2	3.6	2.1	1.4	1.3	.86	2.8	3.7
22	3.0	7.8	11	7.2	6.2	3.7	3.2	1.6	1.5	.55	3.1	2.8
23	2.6	7.0	8.3	8.1	6.3	3.3	3.6	1.2	1.5	.54	12	2.7
24	2.4	5.9	7.4	7.4	4.9	3.4	2.7	1.0	1.5	.89	14	16
25	3.0	6.4	6.7	7.8	5.8	3.0	3.4	1.2	21	28	6.7	48
26	3.3	5.9	6.5	7.9	5.8	3.2	2.4	1.3	9.1	35	11	7.3
27	3.4	6.5	6.0	6.8	6.5	7.4	1.7	1.9	10	3.1	27	4.6
28	2.9	6.2	7.1	6.9	5.5	6.6	2.4	1.5	2.7	2.0	7.0	4.0
29	2.5	6.8	7.2	7.4	34	6.2	24	1.4	2.0	1.4	3.0	3.4
30	2.8	7.0	7.6	7.7	---	6.1	4.0	1.4	1.5	1.3	8.6	3.0
31	3.4	---	7.0	7.3	---	3.8	---	1.4	---	1.2	60	---
TOTAL	110.1	276.5	239.6	254.2	215.4	158.4	119.0	66.4	81.56	96.53	172.79	485.8
MEAN	3.55	9.22	7.73	8.20	7.43	5.11	3.97	2.14	2.72	3.11	5.57	16.2
MAX	8.8	73	11	17	34	16	24	7.8	21	35	60	124
MIN	2.4	3.0	6.0	5.4	4.9	3.0	1.2	1.0	.64	.54	.54	2.7
AC-FT	218	548	475	504	427	314	236	132	162	191	343	964

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1996, BY WATER YEAR (WY)

MEAN	25.6	11.8	58.5	21.7	44.8	30.7	23.0	78.7	135	23.4	8.71	15.6
MAX	92.0	37.9	575	116	355	192	82.6	356	824	144	23.0	38.3
(WY)	1995	1993	1992	1992	1992	1992	1991	1992	1987	1990	1992	1988
MIN	3.55	3.95	4.62	5.36	5.93	5.11	3.69	2.14	2.72	2.56	1.94	1.97
(WY)	1996	1992	1990	1990	1989	1996	1995	1996	1996	1989	1989	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1985 - 1996	
ANNUAL TOTAL	3728.0		2276.28			
ANNUAL MEAN	10.2		6.22		39.6	
HIGHEST ANNUAL MEAN					156	1992
LOWEST ANNUAL MEAN					6.22	1996
HIGHEST DAILY MEAN	585	Jun 29	124	Sep 9	6190	Dec 21 1991
LOWEST DAILY MEAN	1.8	Aug 27	.54	Jul 23	.54	Jul 23 1996
ANNUAL SEVEN-DAY MINIMUM	2.2	Sep 1	.78	Aug 1	.78	Aug 1 1996
INSTANTANEOUS PEAK FLOW			348	Sep 15	21100	Jun 11 1987
INSTANTANEOUS PEAK STAGE			6.24	Sep 15	22.30	Jun 11 1987
ANNUAL RUNOFF (AC-FT)	7390		4520		28720	
10 PERCENT EXCEEDS	9.7		8.8		38	
50 PERCENT EXCEEDS	4.4		3.7		8.2	
90 PERCENT EXCEEDS	2.6		1.1		3.2	

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: July 1984 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1984 to current year.
pH: April 1989 to current year.
WATER TEMPERATURE: September 1984 to current year.
DISSOLVED OXYGEN: April 1989 to current year.

INSTRUMENTATION.--Since September 1984, a 2-parameter water-quality monitor continuously measured specific conductance and water temperature at this station. Since April 1989, a 4-parameter water-quality monitor has continuously measured specific conductance, temperature, pH, and dissolved oxygen.

REMARKS.--Interruptions in the record were due to 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 regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,260 microsiemens Nov. 19, 1988, June 29, 1995; minimum, 39 microsiemens Jan. 18, 1991.
pH: Maximum, 8.5 units Mar. 29, 1990; minimum, 6.7 units June 30, 1991.
WATER TEMPERATURE: Maximum, 32.5°C July 16, 17, 1989; minimum, 4.0°C Dec. 24, 1989.
DISSOLVED OXYGEN: Maximum, 19.8 mg/L Oct. 13, 14, 1989; minimum, 1.2 mg/L on several days in water years 1990, 1993 and 1996.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 958 microsiemens Nov. 6; minimum, 151 microsiemens Nov. 18.
pH: Maximum, 8.0 units several days in Oct., Nov., and June; minimum, 7.1 units on several days in June and July.
WATER TEMPERATURE: Maximum, 31.0°C June 20; minimum, 7.0°C Feb. 4.
DISSOLVED OXYGEN: Maximum, 17.1 mg/L Jan. 9; minimum, 1.2 mg/L July 29-31, Aug. 1, Sept. 6.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
SEP 15...	0730	296	245	7.7	5.4	82	10	28	3.0	15	0.7

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
SEP 15...	3.7	72	27	12	152	146	1560	0.420	0.420	0.420

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)
SEP 15...	0.030	0.72	0.27	0.31	0.34	0.30	0.080	0.950	17	<0.010

DATE	PHENOLS TOTAL (UG/L)	ARSENIC TOTAL (UG/L AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)
SEP 15...	<1	9	<10	1	25	16	30	<0.10	21	<4

DATE	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)
SEP 15...	<1	80	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

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.	1995	110.1	727	434	129	46	14	84	25	260
NOV.	1995	276.5	585	348	260	36	27	63	47	210
DEC.	1995	239.6	757	453	293	49	32	90	58	270
JAN.	1996	254.2	768	460	316	50	34	91	63	270
FEB.	1996	215.4	756	452	263	49	28	89	52	270
MAR.	1996	158.4	728	435	186	46	20	84	36	260
APR.	1996	119.0	685	409	131	43	14	78	25	240
MAY	1996	66.4	729	436	78	47	8.3	85	15	260
JUNE	1996	81.56	581	345	76	35	7.7	61	13	210
JULY	1996	96.53	650	387	101	40	11	73	19	230
AUG.	1996	172.79	525	311	145	31	14	53	25	190
SEPT	1996	485.8	382	224	294	21	27	35	45	140
TOTAL		2276.28	**	**	2300	**	237	**	424	**
WTD.AVG.		6.2	621	370	**	38	**	69	**	220

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	812	747	764	905	834	871	704	687	692	790	780	786
2	829	514	663	910	884	903	765	696	721	780	762	769
3	651	526	621	884	862	870	824	765	809	783	752	762
4	526	450	474	923	866	891	814	784	801	809	783	800
5	641	511	588	938	923	934	796	779	784	811	776	790
6	697	641	672	958	937	945	801	778	790	830	782	799
7	727	697	709	956	908	939	799	777	788	830	750	788
8	755	727	740	908	881	891	795	739	774	802	785	797
9	793	755	775	897	874	887	739	712	722	805	797	802
10	797	771	786	874	819	845	755	709	730	802	774	789
11	775	731	748	823	811	819	751	730	743	793	764	784
12	731	716	722	811	780	795	770	726	740	768	756	763
13	747	722	726	809	778	793	772	756	768	756	738	748
14	767	747	757	806	797	800	765	746	752	767	736	744
15	768	757	763	797	778	788	769	738	757	779	760	773
16	762	733	746	799	774	783	802	737	766	760	716	736
17	737	718	726	803	157	506	810	793	802	716	699	704
18	722	710	716	342	151	312	799	765	777	747	712	736
19	729	720	723	427	333	402	765	702	724	755	742	750
20	783	729	754	465	426	446	703	641	663	753	732	741
21	798	783	791	516	450	481	714	623	657	753	725	743
22	809	788	798	586	516	555	794	714	754	762	720	736
23	823	809	818	659	586	612	805	788	797	785	762	773
24	823	801	816	725	659	698	793	702	755	787	760	777
25	801	764	784	758	725	747	741	692	701	760	745	752
26	764	743	753	758	747	752	801	741	783	762	740	748
27	744	738	741	747	725	733	799	767	785	783	762	776
28	762	744	753	726	714	722	768	752	757	788	778	783
29	784	756	766	714	707	710	822	752	787	787	757	768
30	810	784	796	709	704	707	818	806	812	790	763	775
31	834	810	825	---	---	---	821	787	808	790	762	780
MONTH	834	450	736	958	151	738	824	623	758	830	699	767

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	762	734	745	707	228	611	752	742	748	702	615	666
2	761	735	748	700	665	686	752	733	741	734	702	721
3	772	755	764	689	622	648	734	722	729	739	713	727
4	799	761	788	823	689	763	737	724	730	734	718	726
5	787	753	767	879	823	848	739	704	730	735	730	732
6	798	767	789	879	812	852	721	676	698	781	735	755
7	771	727	748	812	750	785	768	716	746	851	781	817
8	770	726	742	750	701	728	---	---	610	861	830	851
9	802	770	787	710	691	697	---	---	640	830	810	821
10	799	752	778	710	685	697	---	---	670	810	757	783
11	776	749	761	726	695	708	---	---	700	816	730	783
12	772	739	752	748	712	729	---	---	720	775	654	672
13	742	731	735	750	734	745	753	734	738	658	628	646
14	797	742	773	734	724	728	777	753	767	628	537	581
15	787	741	762	730	719	724	784	776	781	571	536	547
16	760	726	737	781	730	751	781	771	774	612	571	595
17	762	750	756	805	781	797	777	773	776	650	612	629
18	756	737	745	797	788	792	777	765	772	676	650	664
19	776	740	750	792	763	781	777	770	773	702	676	689
20	804	776	790	763	734	749	787	765	781	746	702	725
21	839	804	823	734	718	725	765	744	755	747	687	723
22	845	831	839	754	728	743	791	739	758	721	674	687
23	850	833	838	763	754	759	829	791	818	754	721	736
24	868	850	859	762	741	753	816	789	800	780	754	773
25	867	811	838	741	727	733	814	792	806	786	773	781
26	811	781	791	744	733	739	814	796	810	773	745	758
27	797	785	787	746	728	736	820	800	814	750	734	741
28	795	739	781	811	746	780	800	729	779	767	750	756
29	760	228	648	792	687	728	808	257	522	785	767	776
30	---	---	---	688	665	677	615	262	445	798	785	794
31	---	---	---	742	680	704	---	---	---	800	793	796
MONTH	868	228	773	879	228	739	829	257	731	861	536	724
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	797	712	762	657	612	638	645	613	635	348	301	336
2	712	685	693	685	656	677	688	643	671	375	344	352
3	725	687	712	697	681	688	722	686	709	427	375	406
4	696	538	631	745	696	727	755	719	736	468	424	437
5	572	537	554	780	745	771	790	754	770	610	468	551
6	579	540	566	794	779	789	818	789	804	650	610	623
7	540	526	532	798	791	795	826	815	821	728	650	685
8	544	512	524	800	793	797	837	823	831	764	358	697
9	621	544	585	820	797	808	826	780	802	358	157	243
10	685	621	661	872	820	852	781	760	769	332	242	298
11	721	685	708	911	872	896	767	760	764	396	332	363
12	748	720	740	913	878	899	775	762	767	476	396	438
13	769	748	764	878	825	844	788	773	779	534	476	490
14	785	769	780	825	790	805	817	786	802	618	534	586
15	794	783	791	807	759	799	838	817	832	617	172	332
16	797	789	793	813	804	809	844	832	838	548	218	381
17	796	789	792	818	802	810	838	828	833	581	548	574
18	801	790	797	814	804	811	829	824	826	573	548	560
19	818	800	811	830	814	825	825	817	822	569	546	555
20	835	756	800	840	829	836	845	794	823	612	569	580
21	776	761	771	858	837	850	909	845	892	706	612	661
22	781	770	777	869	855	861	911	837	890	765	706	732
23	813	781	801	871	864	867	837	433	707	775	762	768
24	844	811	835	874	866	870	493	319	388	771	470	749
25	846	185	550	875	218	769	457	318	369	490	275	325
26	444	242	354	546	218	477	617	457	559	410	323	368
27	516	337	437	539	496	514	554	323	408	492	410	455
28	502	441	458	508	493	501	466	320	393	575	492	526
29	590	502	555	514	500	503	485	418	462	610	575	598
30	612	590	602	567	514	539	631	396	428	620	587	597
31	---	---	---	614	567	593	729	194	506	---	---	---
MONTH	846	185	671	913	218	749	911	194	698	775	157	509
YEAR	958	151	716									

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.9	7.6	7.7	7.7	7.6	7.6	7.4	7.3	7.4	7.8	7.6	7.7
2	7.9	7.5	7.6	7.7	7.6	7.7	7.5	7.4	7.4	7.8	7.6	7.6
3	7.7	7.5	7.5	7.7	7.6	7.7	7.6	7.4	7.5	7.7	7.5	7.6
4	7.6	7.5	7.5	7.7	7.6	7.7	7.6	7.4	7.5	7.7	7.5	7.6
5	7.7	7.5	7.6	7.7	7.6	7.7	7.6	7.4	7.5	7.7	7.6	7.7
6	7.8	7.6	7.7	7.7	7.7	7.7	7.6	7.4	7.5	7.9	7.6	7.7
7	7.9	7.7	7.8	7.8	7.7	7.7	7.5	7.4	7.5	7.9	7.6	7.8
8	7.9	7.8	7.8	7.7	7.6	7.7	7.5	7.4	7.5	7.8	7.7	7.7
9	7.9	7.8	7.8	7.7	7.7	7.7	7.6	7.4	7.5	7.7	7.5	7.6
10	7.9	7.8	7.8	7.7	7.6	7.7	7.5	7.3	7.4	7.7	7.5	7.6
11	7.9	7.8	7.8	7.7	7.6	7.6	7.5	7.4	7.4	7.8	7.5	7.7
12	8.0	7.8	7.9	7.7	7.6	7.6	7.6	7.4	7.5	7.7	7.5	7.6
13	7.9	7.7	7.8	7.7	7.6	7.7	7.7	7.5	7.6	7.7	7.5	7.6
14	7.9	7.7	7.8	7.7	7.6	7.7	7.7	7.5	7.6	7.7	7.5	7.6
15	7.9	7.7	7.8	7.7	7.6	7.7	7.7	7.5	7.6	7.7	7.5	7.6
16	7.9	7.7	7.8	7.7	7.6	7.7	7.7	7.5	7.6	7.7	7.5	7.6
17	7.9	7.7	7.8	8.0	7.6	7.7	7.7	7.5	7.6	7.7	7.6	7.6
18	7.9	7.7	7.8	8.0	7.6	7.7	7.6	7.5	7.6	7.7	7.6	7.7
19	7.9	7.7	7.8	7.6	7.5	7.5	7.6	7.4	7.5	7.7	7.5	7.6
20	7.9	7.7	7.8	7.5	7.4	7.5	7.5	7.3	7.4	7.7	7.5	7.6
21	8.0	7.7	7.8	7.5	7.3	7.4	7.5	7.4	7.4	7.7	7.5	7.6
22	8.0	7.8	7.8	7.4	7.4	7.4	7.7	7.5	7.6	7.7	7.5	7.6
23	7.9	7.8	7.8	7.5	7.4	7.4	7.7	7.5	7.6	7.7	7.6	7.6
24	7.9	7.8	7.8	7.5	7.4	7.5	7.6	7.4	7.5	7.7	7.5	7.6
25	7.9	7.7	7.8	7.5	7.5	7.5	7.6	7.4	7.5	7.6	7.5	7.6
26	7.8	7.7	7.7	7.6	7.5	7.5	7.6	7.5	7.6	7.7	7.5	7.6
27	7.8	7.7	7.7	7.7	7.2	7.4	7.7	7.5	7.6	7.6	7.5	7.6
28	7.8	7.7	7.7	7.3	7.2	7.2	7.8	7.6	7.6	7.5	7.4	7.5
29	7.7	7.6	7.7	7.3	7.2	7.2	7.7	7.6	7.6	7.6	7.4	7.5
30	7.6	7.6	7.6	7.4	7.2	7.3	7.7	7.6	7.6	7.6	7.5	7.6
31	7.7	7.6	7.6	---	---	---	7.8	7.6	7.7	7.6	7.5	7.5
MONTH	8.0	7.5	7.7	8.0	7.2	7.6	7.8	7.3	7.5	7.9	7.4	7.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.5	7.4	7.5	7.6	7.4	7.5	7.8	7.6	7.7	7.5	7.4	7.5
2	7.5	7.4	7.4	7.5	7.4	7.4	7.8	7.6	7.6	7.5	7.4	7.5
3	7.5	7.4	7.4	7.5	7.2	7.4	7.7	7.5	7.6	7.5	7.4	7.4
4	7.6	7.4	7.5	7.5	7.3	7.4	7.8	7.6	7.7	7.5	7.4	7.4
5	7.6	7.5	7.6	7.6	7.4	7.5	7.6	7.5	7.6	7.5	7.4	7.4
6	7.7	7.5	7.6	7.6	7.4	7.5	7.8	7.5	7.6	7.5	7.4	7.4
7	7.8	7.6	7.7	7.6	7.4	7.5	7.6	7.5	7.6	7.5	7.4	7.5
8	7.8	7.6	7.7	7.6	7.4	7.5	7.6	7.4	7.5	7.5	7.4	7.5
9	7.8	7.6	7.7	7.7	7.4	7.5	7.9	7.6	7.7	7.6	7.4	7.5
10	7.7	7.6	7.6	7.7	7.4	7.5	7.7	7.6	7.6	7.6	7.5	7.5
11	7.7	7.5	7.6	7.8	7.5	7.6	7.7	7.5	7.6	7.7	7.5	7.6
12	7.8	7.5	7.6	7.9	7.5	7.7	7.6	7.5	7.6	7.5	7.4	7.5
13	7.8	7.5	7.6	7.9	7.5	7.7	7.6	7.5	7.5	7.6	7.4	7.5
14	7.8	7.6	7.7	7.8	7.6	7.7	7.6	7.5	7.5	7.6	7.4	7.5
15	7.9	7.6	7.7	7.7	7.5	7.6	7.6	7.5	7.5	7.6	7.4	7.5
16	7.9	7.6	7.7	7.7	7.5	7.6	7.7	7.5	7.6	7.7	7.5	7.6
17	7.9	7.6	7.7	7.7	7.5	7.6	7.6	7.5	7.5	7.8	7.6	7.6
18	7.8	7.6	7.7	7.7	7.5	7.6	7.6	7.5	7.5	7.8	7.6	7.7
19	7.8	7.6	7.7	7.7	7.5	7.6	7.7	7.5	7.5	7.9	7.6	7.7
20	7.8	7.6	7.7	7.8	7.6	7.7	7.6	7.4	7.5	7.9	7.6	7.7
21	7.7	7.6	7.6	7.8	7.6	7.7	7.6	7.4	7.5	7.7	7.5	7.6
22	7.6	7.5	7.5	7.7	7.5	7.6	7.5	7.5	7.5	7.6	7.4	7.5
23	7.6	7.4	7.5	7.6	7.5	7.6	7.6	7.5	7.5	7.7	7.4	7.5
24	7.6	7.4	7.5	7.6	7.5	7.5	7.7	7.5	7.6	7.7	7.4	7.6
25	7.6	7.4	7.5	7.6	7.5	7.6	7.7	7.5	7.6	7.7	7.4	7.6
26	7.5	7.4	7.4	7.8	7.6	7.7	7.6	7.5	7.6	7.7	7.4	7.5
27	7.5	7.4	7.5	7.8	7.7	7.7	7.6	7.4	7.5	7.6	7.4	7.5
28	7.5	7.4	7.4	7.8	7.6	7.7	7.5	7.3	7.4	7.8	7.5	7.6
29	7.6	7.3	7.4	7.7	7.6	7.6	7.5	7.3	7.4	7.8	7.5	7.6
30	---	---	---	7.8	7.5	7.7	7.5	7.4	7.4	7.8	7.5	7.6
31	---	---	---	7.8	7.6	7.7	---	---	---	7.6	7.4	7.5
MONTH	7.9	7.3	7.6	7.9	7.2	7.6	7.9	7.3	7.5	7.9	7.4	7.5

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.7	7.4	7.5	7.4	7.2	7.3	7.6	7.2	7.4	7.5	7.4	7.5
2	7.7	7.4	7.5	7.4	7.2	7.3	7.6	7.3	7.4	7.4	7.4	7.4
3	7.8	7.4	7.5	7.6	7.2	7.4	7.6	7.2	7.4	7.4	7.3	7.4
4	7.6	7.4	7.5	7.6	7.3	7.4	7.6	7.3	7.5	7.4	7.3	7.3
5	7.7	7.3	7.5	7.6	7.3	7.4	7.7	7.3	7.5	7.4	7.2	7.3
6	7.8	7.4	7.5	7.7	7.3	7.4	7.7	7.3	7.5	7.5	7.2	7.3
7	7.6	7.4	7.5	7.7	7.3	7.5	7.6	7.4	7.5	7.4	7.3	7.3
8	7.7	7.3	7.5	7.7	7.3	7.5	7.6	7.4	7.5	7.6	7.3	7.4
9	7.9	7.4	7.6	7.5	7.2	7.4	7.7	7.4	7.5	7.8	7.4	7.6
10	7.9	7.4	7.6	7.6	7.3	7.4	7.7	7.4	7.5	7.5	7.3	7.4
11	8.0	7.5	7.7	7.6	7.3	7.4	7.7	7.4	7.6	7.3	7.3	7.3
12	8.0	7.5	7.7	7.7	7.4	7.5	7.7	7.5	7.6	7.4	7.3	7.3
13	7.9	7.5	7.7	7.7	7.3	7.5	7.6	7.5	7.5	7.3	7.3	7.3
14	8.0	7.5	7.7	7.7	7.4	7.5	7.6	7.4	7.5	7.4	7.3	7.3
15	7.9	7.5	7.7	7.7	7.3	7.5	7.7	7.4	7.6	7.8	7.4	7.6
16	8.0	7.5	7.7	7.7	7.3	7.5	7.7	7.4	7.5	7.6	7.4	7.5
17	8.0	7.5	7.7	7.7	7.3	7.5	7.6	7.4	7.5	7.5	7.4	7.5
18	8.0	7.5	7.7	7.7	7.4	7.5	7.6	7.4	7.5	7.5	7.4	7.4
19	8.0	7.5	7.7	7.8	7.4	7.5	7.6	7.4	7.5	7.5	7.4	7.4
20	7.7	7.3	7.5	7.8	7.4	7.6	7.6	7.4	7.5	7.5	7.4	7.5
21	7.7	7.2	7.4	7.8	7.4	7.5	7.7	7.4	7.5	7.6	7.5	7.5
22	7.5	7.2	7.4	7.7	7.4	7.6	7.8	7.4	7.5	7.5	7.4	7.4
23	7.7	7.2	7.4	7.8	7.4	7.6	7.7	7.4	7.5	7.5	7.4	7.4
24	7.7	7.2	7.4	7.8	7.4	7.6	7.4	7.3	7.4	7.6	7.4	7.5
25	7.8	7.1	7.3	7.8	7.4	7.5	7.5	7.3	7.4	7.6	7.3	7.4
26	7.3	7.1	7.2	7.8	7.3	7.4	7.6	7.4	7.4	7.3	7.3	7.3
27	7.3	7.1	7.2	7.5	7.2	7.3	7.5	7.4	7.4	7.3	7.3	7.3
28	7.2	7.1	7.1	7.5	7.2	7.3	7.5	7.3	7.4	7.4	7.3	7.3
29	7.3	7.1	7.2	7.3	7.1	7.2	7.4	7.3	7.3	7.4	7.3	7.4
30	7.4	7.1	7.2	7.5	7.2	7.3	7.5	7.3	7.4	7.5	7.4	7.4
31	---	---	---	7.5	7.2	7.3	7.6	7.4	7.5	---	---	---
MONTH	8.0	7.1	7.5	7.8	7.1	7.4	7.8	7.2	7.5	7.8	7.2	7.4
YEAR	8.0	7.1	7.5									

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	26.0	24.5	25.0	21.0	19.5	20.0	15.5	14.0	15.0	16.5	14.5	15.5
2	27.0	25.5	26.0	22.0	20.0	20.5	18.0	15.5	17.0	14.5	13.0	13.5
3	25.5	23.5	24.5	20.0	17.5	18.5	20.0	18.0	19.0	13.0	11.0	12.0
4	24.0	22.0	23.0	17.5	15.0	16.0	19.5	18.5	19.0	12.0	10.0	11.0
5	23.0	21.5	22.0	15.0	14.5	15.0	20.0	18.0	19.0	12.5	11.0	11.5
6	22.0	20.0	21.0	15.5	14.5	15.0	19.0	18.0	18.5	12.5	11.5	12.0
7	21.0	19.5	20.0	17.5	15.0	16.0	18.0	17.5	18.0	11.5	9.5	10.5
8	21.0	19.0	20.0	17.5	16.0	16.5	17.5	16.5	17.0	10.0	8.0	9.0
9	22.0	19.5	20.5	17.0	15.5	16.5	17.0	14.0	15.5	10.0	8.0	9.0
10	21.5	19.5	20.5	19.5	17.0	18.5	14.0	12.0	13.0	11.5	9.0	10.0
11	21.5	19.5	20.5	19.0	16.0	18.0	14.0	12.5	13.0	13.0	11.0	12.0
12	22.0	20.0	21.0	16.0	14.5	15.5	16.0	14.0	15.0	13.5	11.0	12.0
13	23.0	21.0	22.0	16.5	14.5	15.0	18.0	15.5	17.0	13.5	12.0	12.5
14	22.5	20.5	21.5	17.0	15.0	15.5	19.5	17.5	18.5	14.5	12.0	13.0
15	20.5	18.5	19.5	16.5	14.5	15.5	21.0	19.5	20.0	15.5	13.0	14.0
16	20.0	17.5	18.5	17.0	15.5	16.0	20.5	19.0	19.5	16.5	14.0	15.0
17	20.0	17.5	18.5	19.5	16.5	18.0	21.0	20.0	20.0	18.0	16.0	17.0
18	20.5	18.5	19.0	17.5	17.0	17.5	20.5	18.5	19.5	17.5	14.0	16.5
19	22.0	19.5	20.5	18.5	17.5	18.0	18.5	16.0	17.0	14.0	12.0	12.5
20	21.0	19.0	20.5	19.0	18.0	18.5	16.0	13.5	14.5	13.0	10.5	11.5
21	19.0	17.5	18.0	19.0	17.5	18.5	13.5	12.0	12.5	13.5	11.5	12.5
22	20.5	18.0	19.0	19.5	18.5	18.5	12.5	12.0	12.5	16.0	13.0	15.0
23	21.0	19.5	20.0	20.0	18.5	19.0	13.0	12.0	12.5	19.0	16.0	17.5
24	20.0	18.5	19.0	18.5	16.5	17.5	12.5	11.5	12.0	17.5	15.0	16.5
25	20.0	18.5	19.0	17.0	15.5	16.5	13.5	12.0	12.5	15.5	13.5	14.5
26	21.0	19.5	20.5	17.5	15.5	16.5	13.0	12.0	12.5	17.5	15.5	16.0
27	22.5	20.5	21.5	18.0	16.0	17.0	13.0	11.0	12.0	16.0	13.0	14.5
28	21.5	20.5	21.0	17.0	15.0	16.0	13.5	12.0	12.5	13.5	12.5	13.0
29	20.5	19.5	20.0	15.0	13.5	14.5	12.5	11.5	12.0	16.5	13.5	15.0
30	19.5	19.5	19.5	14.5	13.0	14.0	14.0	12.5	13.0	18.5	16.0	17.0
31	19.5	19.5	19.5	---	---	---	16.0	14.0	15.0	17.5	13.0	15.0
MONTH	27.0	17.5	20.5	22.0	13.0	17.0	21.0	11.0	15.5	19.0	8.0	13.5

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	13.0	10.5	12.0	12.0	10.0	11.5	21.0	18.0	19.0	22.5	19.0	20.5
2	10.5	8.5	9.5	14.0	10.5	12.0	19.0	17.5	18.0	22.0	20.5	21.0
3	9.5	8.5	9.0	16.0	12.0	14.0	20.0	17.5	18.5	23.5	21.0	22.0
4	9.5	7.0	8.5	18.0	15.5	16.5	21.5	19.0	20.0	24.5	22.0	23.0
5	9.5	8.0	8.5	20.5	18.0	19.0	20.5	16.5	19.0	25.0	22.5	23.5
6	13.5	9.5	11.5	22.0	19.5	20.5	17.5	16.0	16.5	24.5	23.5	24.0
7	15.5	13.0	14.5	19.5	15.5	17.0	17.0	15.0	16.0	24.5	23.5	24.0
8	17.5	15.0	16.0	15.5	13.0	14.0	18.5	15.5	17.0	25.0	23.5	24.0
9	18.0	16.0	17.0	14.5	11.5	13.0	20.0	16.5	18.0	25.5	23.5	24.5
10	20.0	17.5	18.5	14.5	11.0	13.0	21.0	18.0	19.5	26.0	24.0	24.5
11	19.0	17.0	18.0	16.0	12.5	14.0	21.0	20.0	20.5	26.0	23.5	24.5
12	17.0	14.5	15.5	17.0	14.0	15.5	23.0	20.5	21.5	25.5	24.0	24.5
13	16.0	14.0	15.0	19.5	16.0	17.5	23.5	20.5	21.5	27.0	24.0	25.0
14	16.5	14.0	15.0	21.5	18.5	20.0	24.0	21.5	22.5	27.0	24.5	25.5
15	17.5	15.5	16.5	23.0	20.5	21.5	22.5	20.0	21.0	27.5	24.5	25.5
16	17.0	14.5	15.5	23.5	21.0	22.0	21.0	18.5	19.5	27.5	24.5	26.0
17	16.0	13.0	14.5	23.5	21.0	22.0	22.0	19.0	20.0	27.5	25.0	26.0
18	17.0	15.0	16.0	21.5	19.0	20.5	23.5	20.5	21.5	27.5	25.0	26.0
19	18.5	15.5	17.0	20.0	17.0	18.5	25.0	21.5	23.0	28.0	25.0	26.0
20	19.0	16.0	17.5	19.0	16.0	17.5	24.5	23.0	23.5	28.0	25.0	26.5
21	20.0	17.0	18.5	18.0	15.0	16.5	25.0	22.5	23.5	29.0	25.5	27.0
22	21.0	18.0	19.5	19.5	16.5	18.0	24.0	22.5	23.5	28.5	25.5	27.0
23	22.5	20.0	21.0	19.0	18.5	18.5	24.0	21.0	22.5	28.5	25.5	26.5
24	21.0	19.0	20.0	21.0	18.5	19.5	23.5	20.0	21.5	27.5	25.5	26.5
25	22.0	20.0	21.0	20.0	17.0	19.0	24.0	21.0	22.0	27.5	25.5	26.5
26	22.0	21.0	21.5	17.0	14.5	15.5	24.0	22.0	23.0	27.0	25.5	26.0
27	22.5	21.5	22.0	14.5	13.0	14.0	24.5	22.5	23.0	26.5	25.5	26.0
28	22.0	17.5	20.0	16.5	13.0	14.5	25.0	22.5	23.5	28.5	25.5	26.5
29	17.5	10.0	14.5	16.5	15.5	16.0	24.0	20.0	22.0	29.5	26.5	27.5
30	---	---	---	20.5	16.5	18.5	21.0	18.0	19.5	29.0	26.5	27.5
31	---	---	---	20.5	18.0	19.5	---	---	---	28.0	26.5	27.0
MONTH	22.5	7.0	16.0	23.5	10.0	17.0	25.0	15.0	20.5	29.5	19.0	25.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	28.0	25.5	26.5	30.0	27.0	28.0	30.0	27.0	28.5	26.5	25.5	26.0
2	29.5	26.5	27.5	30.0	27.0	28.0	30.5	27.5	29.0	27.5	25.5	26.5
3	28.5	26.0	27.0	29.5	27.0	28.0	30.0	28.0	29.0	28.0	26.0	27.0
4	28.0	26.0	27.0	30.0	27.0	28.0	30.0	28.0	29.0	27.5	26.0	26.5
5	29.0	26.0	27.0	30.0	26.5	28.0	30.0	28.5	29.0	27.5	26.0	26.5
6	29.0	26.0	27.0	30.0	27.0	28.5	30.0	28.5	29.0	27.5	25.5	26.5
7	27.5	26.0	26.5	30.0	27.5	28.5	30.5	28.5	29.0	27.5	26.0	26.5
8	27.5	24.5	26.0	30.0	28.0	29.0	29.5	27.5	28.5	29.0	25.5	26.5
9	27.5	24.0	25.5	30.0	28.0	29.0	29.0	27.0	28.0	28.0	25.5	26.5
10	27.5	24.5	26.0	29.0	27.0	28.0	29.0	27.0	28.0	27.5	26.0	26.5
11	28.0	25.0	26.5	28.5	27.0	27.5	29.5	27.0	28.5	27.0	25.0	26.0
12	29.0	26.0	27.0	30.0	27.0	28.0	30.0	28.0	28.5	26.5	25.0	25.5
13	29.0	26.5	27.5	30.0	27.0	28.5	29.5	28.5	29.0	25.5	25.0	25.5
14	29.5	27.0	28.0	30.0	27.0	28.5	29.0	27.5	28.5	26.0	24.5	25.5
15	29.5	26.5	28.0	29.5	28.0	28.5	28.0	26.0	27.0	25.5	23.5	24.5
16	29.5	26.5	28.0	29.5	27.5	28.5	28.0	26.0	27.0	27.0	25.0	26.0
17	30.0	26.5	28.0	29.5	27.0	28.0	28.5	26.5	27.5	28.0	26.5	27.0
18	30.0	27.5	28.5	29.0	27.0	28.0	28.5	27.0	27.5	28.0	27.0	27.5
19	30.5	27.5	28.5	29.5	27.0	28.0	28.0	27.0	27.5	28.5	27.0	27.5
20	31.0	27.5	29.0	30.0	27.0	28.5	28.5	26.0	27.0	28.0	26.5	27.0
21	30.5	28.0	29.0	29.5	27.5	28.5	28.0	26.0	26.5	28.0	26.0	26.5
22	29.0	27.5	28.5	29.5	28.0	28.5	27.0	25.5	26.5	28.0	26.0	26.5
23	29.5	27.0	28.0	30.0	28.0	29.0	27.0	25.5	26.0	28.0	26.0	26.5
24	29.5	27.0	28.0	29.5	28.0	29.0	27.0	26.0	26.5	28.0	26.0	27.0
25	28.5	27.0	27.5	29.5	26.0	28.0	27.0	26.0	26.0	27.5	25.0	25.5
26	28.0	26.5	27.0	29.0	25.5	28.0	27.0	25.5	26.0	26.5	25.0	25.5
27	29.0	27.0	28.0	29.0	26.5	27.5	27.5	26.0	27.0	26.0	23.5	25.0
28	30.0	27.5	28.5	30.0	27.0	28.0	29.0	27.0	28.0	23.5	21.5	22.5
29	29.5	27.0	28.0	29.5	27.0	28.0	28.0	27.0	27.5	22.0	20.0	21.0
30	29.5	27.0	28.0	30.0	27.0	28.5	27.5	26.5	27.0	21.5	19.5	20.0
31	---	---	---	29.5	27.0	28.5	27.0	24.5	26.5	---	---	---
MONTH	31.0	24.0	27.5	30.0	25.5	28.5	30.5	24.5	27.5	29.0	19.5	26.0
YEAR	31.0	7.0	21.0									

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.1	5.0	5.7	6.0	4.1	4.7	8.9	7.4	8.1	12.5	8.8	10.8
2	5.9	3.1	4.5	5.8	4.0	4.7	8.4	6.6	7.4	13.7	9.8	11.5
3	6.1	3.0	4.1	6.2	4.0	4.8	8.3	5.6	6.6	14.8	10.7	12.3
4	6.1	4.1	4.8	6.2	4.3	5.2	8.0	4.9	6.1	15.0	11.9	13.3
5	7.2	4.7	5.5	6.7	5.1	5.8	8.2	4.9	6.1	14.7	11.5	13.2
6	10.0	5.4	7.0	7.3	5.6	6.3	7.9	4.9	6.1	14.8	10.8	12.8
7	10.2	7.2	8.0	8.1	6.0	6.6	6.5	5.1	5.8	15.4	11.4	13.2
8	10.4	7.3	8.2	7.5	5.9	6.4	6.9	5.2	6.0	16.7	13.2	14.6
9	10.6	7.2	8.2	7.0	5.6	6.2	8.6	5.9	7.1	17.1	12.7	14.9
10	10.5	6.9	8.0	7.4	4.9	5.9	9.3	7.0	8.1	16.2	12.7	14.7
11	10.5	6.8	7.9	6.9	4.6	5.3	9.7	7.3	8.5	15.0	11.2	13.3
12	10.5	6.8	7.9	7.6	4.7	5.9	9.9	7.4	8.4	14.4	10.5	12.5
13	10.1	6.4	7.6	7.8	5.7	6.3	9.8	6.6	7.9	13.9	10.1	12.1
14	9.7	6.2	7.3	8.1	5.8	6.5	9.8	6.0	7.6	13.9	10.1	12.0
15	10.1	6.0	7.4	8.1	6.0	6.7	9.1	5.5	7.1	12.9	9.4	11.3
16	10.6	6.6	7.8	7.6	5.6	6.5	9.1	5.4	6.9	12.0	9.2	10.7
17	10.9	6.9	8.0	8.4	5.8	6.8	8.1	5.2	6.6	11.0	8.3	9.8
18	10.7	6.8	8.0	8.5	6.6	7.3	8.0	5.0	6.3	10.8	7.7	9.4
19	10.1	6.1	7.5	6.6	5.6	6.2	8.5	5.1	6.6	12.6	9.4	11.0
20	9.5	5.8	7.1	5.6	4.8	5.2	9.7	6.2	7.8	13.9	10.5	12.3
21	10.6	5.6	7.2	5.7	4.7	5.0	9.7	7.6	8.6	13.7	10.8	12.3
22	10.3	6.2	7.5	5.8	4.2	4.8	11.6	8.5	10.0	12.2	9.6	11.0
23	9.1	5.7	6.8	5.5	4.0	4.4	12.0	8.9	10.3	10.8	8.0	9.5
24	8.4	5.4	6.5	5.4	3.7	4.3	11.7	8.6	10.3	10.5	7.8	9.2
25	9.0	5.6	6.7	5.9	4.5	5.0	12.7	9.2	11.0	10.7	8.5	9.7
26	7.8	5.4	6.3	6.6	4.8	5.4	12.4	9.7	11.1	10.7	8.1	9.5
27	8.8	5.0	6.2	8.2	4.8	6.3	13.9	10.1	11.6	11.2	8.4	9.6
28	7.5	4.6	5.7	7.9	5.8	6.6	13.9	10.4	12.0	10.6	8.6	9.5
29	5.4	4.3	4.7	8.6	6.6	7.4	12.9	10.7	11.5	11.0	8.2	9.4
30	4.7	3.8	4.3	9.6	7.3	8.1	11.7	9.5	10.7	9.5	7.2	8.3
31	5.2	4.1	4.5	---	---	---	13.1	9.5	11.0	9.1	7.1	8.1
MONTH	10.9	3.0	6.7	9.6	3.7	5.9	13.9	4.9	8.4	17.1	7.1	11.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.5	8.3	8.9	11.3	9.7	10.3	10.0	6.3	7.3	---	---	---
2	12.4	9.5	10.7	11.7	9.2	10.3	9.3	6.0	7.3	---	---	---
3	14.0	11.1	12.4	11.6	8.5	9.9	8.6	6.2	7.3	6.0	2.8	4.0
4	14.9	12.7	13.7	9.9	7.7	8.6	8.4	6.0	6.9	6.0	3.6	4.5
5	14.9	12.9	13.7	9.8	6.4	7.9	6.4	5.3	5.6	6.0	3.7	4.6
6	13.5	11.5	12.5	9.7	6.2	7.9	8.5	5.5	6.9	4.8	3.4	4.0
7	12.7	9.7	11.2	10.9	7.1	8.9	7.9	5.7	6.7	5.1	3.3	4.0
8	12.1	8.8	10.5	12.0	8.5	10.3	8.0	5.3	6.4	4.9	3.2	3.9
9	12.0	8.1	10.0	13.7	10.3	11.7	7.9	5.2	6.2	5.8	3.6	4.5
10	10.7	7.5	9.1	14.4	10.6	12.2	7.9	5.1	6.2	6.0	3.5	4.5
11	10.7	7.1	8.7	13.9	10.3	12.1	9.1	5.2	6.8	5.6	3.8	4.6
12	12.0	8.2	9.7	13.7	9.6	11.7	8.0	5.0	6.5	4.9	3.0	3.8
13	12.6	9.0	10.5	13.1	9.2	11.3	7.8	3.8	5.5	5.2	2.9	3.8
14	12.8	9.3	11.0	11.8	8.3	10.4	7.5	3.6	5.2	5.6	3.0	4.0
15	12.7	8.6	10.5	11.1	7.8	9.5	7.5	3.6	5.1	6.1	3.1	4.4
16	13.3	8.8	10.6	10.9	7.5	9.1	8.2	4.0	5.6	6.8	3.4	4.7
17	13.1	9.4	11.0	10.0	6.9	8.5	8.2	4.3	5.9	7.2	3.5	4.9
18	11.9	9.2	10.3	11.5	6.8	8.3	7.9	4.1	5.6	7.3	3.6	5.1
19	12.1	8.5	10.0	12.1	7.5	9.2	7.6	3.4	5.3	8.0	3.8	5.5
20	12.3	8.4	9.9	11.9	8.6	10.1	6.4	2.9	4.4	8.2	4.0	5.7
21	---	---	---	12.5	9.2	10.4	6.1	2.7	4.0	6.6	3.7	4.9
22	---	---	---	11.9	8.7	10.2	4.1	2.5	3.0	6.6	3.1	4.4
23	12.5	8.7	10.4	9.5	7.0	8.3	5.6	2.7	3.8	7.0	3.1	4.6
24	11.9	8.5	9.8	9.6	6.6	7.6	6.0	3.0	4.1	6.5	2.9	4.4
25	11.1	7.9	9.1	9.3	6.7	7.7	5.9	3.2	4.2	6.6	2.7	4.4
26	8.6	6.8	7.8	8.4	7.2	7.7	5.4	2.8	3.7	5.5	2.6	3.9
27	8.4	6.0	7.0	9.0	7.2	8.0	4.6	1.9	3.0	5.1	2.1	3.3
28	8.5	6.0	7.1	10.0	7.8	8.7	5.1	1.9	3.1	6.0	2.5	3.8
29	11.3	7.3	8.5	8.2	6.5	7.2	3.8	2.7	3.3	6.5	2.4	4.1
30	---	---	---	9.6	6.0	7.3	4.3	2.7	3.3	6.1	2.5	4.0
31	---	---	---	8.3	6.1	7.1	---	---	---	4.9	2.2	3.4
MONTH	14.9	6.0	10.2	14.4	6.0	9.3	10.0	1.9	5.3	8.2	2.1	4.3

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	5.4	2.3	3.6	4.5	1.6	2.9	4.3	1.2	2.8	3.5	2.9	3.3
2	6.0	2.1	3.6	5.5	1.8	3.5	4.7	1.3	3.1	3.2	2.6	2.8
3	5.9	2.8	4.0	5.7	2.1	3.8	4.8	1.4	3.2	3.3	2.3	2.7
4	5.2	2.5	3.5	6.2	2.1	4.0	4.3	2.3	3.6	3.3	2.2	2.6
5	6.1	2.2	3.6	6.2	2.3	4.1	4.6	2.3	3.6	3.4	1.5	2.4
6	6.1	2.2	3.8	6.3	2.2	4.3	4.7	2.4	3.7	4.5	1.2	2.4
7	5.2	2.1	3.3	6.0	2.5	4.4	4.7	2.4	3.7	3.2	1.9	2.3
8	5.9	1.9	3.5	6.0	2.2	4.2	4.8	1.9	3.4	3.4	1.7	2.3
9	6.8	2.4	4.1	5.3	2.1	3.9	4.9	2.0	3.4	4.2	3.1	3.4
10	7.0	2.5	4.4	5.1	1.9	3.3	4.4	1.7	3.2	3.3	2.8	3.1
11	7.6	2.6	5.0	5.0	2.0	3.5	4.8	1.7	3.3	3.1	2.6	2.8
12	7.8	2.3	5.0	5.1	2.1	3.5	4.7	2.4	3.5	3.2	2.6	2.8
13	7.3	2.5	4.8	5.1	1.8	3.5	3.5	2.5	3.0	2.8	2.1	2.5
14	7.5	2.4	4.8	5.2	2.0	3.5	4.3	1.5	3.0	3.2	2.1	2.6
15	6.8	2.2	4.4	5.0	1.6	3.4	4.5	1.8	3.3	4.4	2.4	3.6
16	6.7	2.3	4.4	5.3	1.7	3.5	4.6	1.8	3.3	3.7	3.1	3.4
17	7.1	2.2	4.5	5.0	1.9	3.4	4.6	1.9	3.5	3.2	2.8	3.0
18	6.7	2.2	4.5	4.8	1.7	3.0	4.4	2.2	3.4	3.2	2.5	2.8
19	6.7	1.9	4.2	5.1	1.5	3.0	---	---	---	3.4	2.5	2.8
20	8.4	1.8	4.8	4.9	1.4	3.1	4.5	2.7	3.8	3.5	2.6	2.9
21	7.5	2.6	5.1	4.8	1.3	3.0	4.6	2.2	3.2	3.7	2.7	3.0
22	6.2	2.1	4.2	4.9	1.7	3.1	4.6	1.9	2.9	4.3	2.7	3.2
23	7.0	2.0	4.5	5.0	2.0	3.3	4.0	2.3	2.8	4.1	2.5	3.1
24	7.0	2.3	4.6	4.7	1.3	3.1	3.4	2.2	2.7	4.3	2.7	3.3
25	5.2	2.0	3.1	4.7	1.5	3.0	3.6	2.0	2.5	4.7	2.9	3.4
26	3.0	1.3	2.0	3.9	2.2	2.8	4.1	2.6	3.1	3.2	2.6	2.8
27	3.2	2	2.7	3.4	1.4	2.2	3.7	3.0	3.3	---	---	---
28	2.8	1.5	2.1	3.7	1.5	2.3	3.1	2.1	2.5	---	---	---
29	3.8	1.7	2.5	3.3	1.2	2.0	3.1	1.7	2.3	---	---	---
30	4.3	1.6	2.7	3.8	1.2	2.4	3.2	1.8	2.5	---	---	---
31	---	---	---	4.3	1.2	2.6	4.4	2.2	3.0	---	---	---
MONTH	8.4	1.3	3.9	6.3	1.2	3.3	4.9	1.2	3.2	4.7	1.2	2.9
YEAR	17.1	1.2	6.2									

08181500 MEDINA RIVER AT SAN ANTONIO, TX

LOCATION.--Lat 29°15'14", long 98°28'20", Bexar County, Hydrologic Unit 12100302, near right bank at upstream side of pier of upstream bridge of two bridges on U. S. Highway 281 in San Antonio, and 6.8 mi upstream from mouth.

DRAINAGE AREA.--1,31/ mi², of which 634 mi² is above dam forming Medina Lake.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to December 1930, July 1939 to current year. October 1929 to December 1930, records below about 50 ft³/s in connection with seepage investigation (published as "at Losoya"). Published as "near San Antonio" July 1939 to September 1970.

REVISED RECORDS.--WSP 1562: 1957. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 439.0 ft above sea level (levels by U.S. Army Corps of Engineers). October 1929 to December 1930, nonrecording gage at Losoya 1.5 mi downstream at different datum. July 27, 1939, to Sept. 30, 1987, at site near left bank at downstream side of pier of upstream bridge of two bridges at same datum.

REMARKS.--No estimated daily discharges. Records good Oct. 1 to June 21 and fair thereafter. Flow regulated by Medina Lake 60 mi upstream and by diversion dam reservoir, capacity 4,500 acre-ft. Streamflow is lost into the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. Several small diversions below diversion dam reservoir. Records furnished by the city of San Antonio show that during the current year, 2,500 acre-ft from Mitchell Lake and wastewater effluent in the amount of 35,950 acre-ft from the Leon Creek plant was discharged into the Medina River above this station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 55 ft sometime prior to construction of Medina Dam in 1913, from information by State Department of Highways and Public Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125	106	102	103	97	145	98	81	81	73	62	232
2	127	118	123	104	105	124	94	83	82	73	62	127
3	126	111	122	103	103	119	94	72	74	73	62	121
4	123	100	121	103	105	118	94	65	68	85	62	118
5	120	91	117	105	112	117	94	60	72	108	60	120
6	118	98	115	104	110	113	102	63	71	123	56	115
7	102	98	114	110	106	106	103	65	80	124	53	113
8	90	97	118	112	105	111	103	72	75	107	53	116
9	93	97	129	105	107	114	102	72	71	72	64	273
10	91	100	120	97	105	109	97	66	66	71	106	464
11	87	96	117	99	98	110	93	66	58	73	114	137
12	88	97	113	97	99	102	92	72	70	98	118	124
13	88	94	113	93	98	103	85	82	65	166	113	120
14	83	90	112	91	106	104	83	83	62	106	110	118
15	80	90	111	94	101	107	80	61	47	75	106	221
16	87	93	109	95	98	106	74	54	50	68	91	198
17	97	129	111	92	99	104	68	40	62	62	83	129
18	94	197	115	95	96	102	61	41	58	67	98	120
19	95	145	115	96	97	95	64	40	71	67	100	117
20	96	125	114	97	98	92	59	46	71	67	109	116
21	92	116	111	95	103	96	63	51	81	66	110	114
22	91	109	115	99	100	98	73	45	139	66	112	114
23	93	108	110	101	99	93	67	40	96	65	118	113
24	93	100	107	104	97	93	70	41	100	63	133	112
25	91	100	105	99	100	97	69	45	157	65	143	125
26	93	99	104	97	101	93	62	53	140	182	157	116
27	97	103	104	97	99	97	60	70	128	57	188	113
28	94	98	104	94	103	101	58	72	92	62	133	111
29	86	100	103	101	116	103	83	75	72	62	131	110
30	90	96	105	103	---	102	84	72	72	62	387	101
31	101	---	107	97	---	98	---	73	---	62	164	---
TOTAL	3031	3201	3486	3082	2963	3272	2429	1921	2431	2570	3458	4328
MEAN	97.8	107	112	99.4	102	106	81.0	62.0	81.0	82.9	112	144
MAX	127	197	129	112	116	145	103	83	157	182	387	464
MIN	80	90	102	91	96	92	58	40	47	57	53	101
AC-FT	6010	6350	6910	6110	5880	6490	4820	3810	4820	5100	6860	8580

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1996, BY WATER YEAR (WY)

MEAN	199	152	149	166	225	176	187	268	387	201	151	185
MAX	1734	835	961	979	2923	2558	1620	2018	7006	3261	1175	1427
(WY)	1974	1977	1992	1968	1992	1992	1992	1992	1987	1973	1978	1973
MIN	7.60	8.50	12.7	5.58	12.7	9.77	6.63	8.71	6.52	6.13	6.40	8.24
(WY)	1956	1956	1955	1957	1953	1956	1956	1953	1956	1954	1952	1954

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1939 - 1996	
ANNUAL TOTAL	46861		36172			
ANNUAL MEAN	128		98.8		204	
HIGHEST ANNUAL MEAN					1218	1992
LOWEST ANNUAL MEAN					14.3	1956
HIGHEST DAILY MEAN	1240	Jun 29	464	Sep 10	28300	Jul 17 1973
LOWEST DAILY MEAN	77	May 3	40	May 17	3.3	Apr 18 1956
ANNUAL SEVEN-DAY MINIMUM	81	May 1	43	May 17	4.0	Jan 21 1957
INSTANTANEOUS PEAK FLOW			781	Sep 10	31900	Jul 17 1973
INSTANTANEOUS PEAK STAGE			12.30	Sep 10	43.59	Jul 17 1973
ANNUAL RUNOFF (AC-FT)	92950		71750		147500	
10 PERCENT EXCEEDS	159		123		358	
50 PERCENT EXCEEDS	109		98		93	
90 PERCENT EXCEEDS	91		62		17	

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: June 1965 to current year. Pesticide analyses: April 1971 to September 1981.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1987 to current year.
pH: January 1987 to current year.
WATER TEMPERATURE: January 1987 to current year.
DISSOLVED OXYGEN: January 1987 to current year.

INSTRUMENTATION.--Beginning January 1987, a four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunction 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 regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,180 microsiemens Nov. 30, Dec. 1 1995; minimum, 30 microsiemens July 16, 1990.
pH: Maximum, 8.8 units Dec. 4, 5, 1988, Mar. 22, 1989; minimum, 7.0 units Apr. 1-3, 1989, Mar. 5, 6, 1990.
WATER TEMPERATURE: Maximum, 32.0°C June 11, 1989; minimum, 9.0°C Jan. 11, 1988, Dec. 23, 1989.
DISSOLVED OXYGEN: Maximum, 13.7 mg/L Feb. 4, 1996; minimum, 1.8 mg/L Oct. 17, Nov. 8, 1987.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,180 microsiemens Nov. 30, Dec. 1; minimum, 402 microsiemens July 26.
pH: Maximum, 8.4 units Oct. 20; minimum, 7.5 units several days in Feb. and Mar.
WATER TEMPERATURE: Maximum, 31.0°C on several days during June, July, and Aug.; minimum, 11.0°C Feb. 4.
DISSOLVED OXYGEN: Maximum, 13.7 mg/L Feb. 4; minimum, 3.8 mg/L May 30.

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICROSIEMENS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1995	3031	926	522	4270	86	705	90	737	310
NOV.	1995	3201	955	535	4630	91	789	92	795	320
DEC.	1995	3486	1030	571	5380	100	982	97	915	330
JAN.	1996	3082	1030	568	4720	100	856	97	805	330
FEB.	1996	2963	961	538	4310	92	735	92	740	320
MAR.	1996	3272	988	551	4870	96	852	94	833	320
APR.	1996	2429	1000	556	3650	98	645	95	623	320
MAY	1996	1921	1020	564	2930	100	527	96	499	330
JUNE	1996	2431	975	545	3580	95	620	93	613	320
JULY	1996	2570	865	492	3420	77	533	86	594	300
AUG.	1996	3458	843	481	4490	74	692	84	782	290
SEPT	1996	4328	784	451	5280	66	771	79	924	280
TOTAL		36172	**	**	51500	**	8710	**	8860	**
WTD.AVG.		99	940	527	**	89	**	91	**	310

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	940	870	903	950	910	936	1180	1070	1120	1010	981	997
2	900	850	874	920	880	904	1130	1060	1090	1010	982	997
3	910	860	882	910	860	897	1100	1030	1070	1010	986	999
4	920	880	895	930	880	910	1070	1000	1040	1010	989	998
5	910	880	896	930	850	904	1090	1020	1050	1030	997	1010
6	930	890	912	930	860	905	1070	1010	1040	1020	997	1010
7	920	840	901	950	880	922	1060	999	1030	1030	1010	1020
8	930	850	903	960	890	938	1060	1010	1030	1020	980	1000
9	920	860	897	980	914	954	1020	986	1010	1040	891	991
10	930	870	908	1000	922	969	1010	962	991	1070	1030	1050
11	930	880	908	1010	910	973	1010	953	980	1080	1030	1060
12	930	880	914	1010	944	975	1010	957	988	1080	1030	1050
13	930	880	911	985	905	953	1020	979	1000	1070	1020	1050
14	950	890	919	972	908	943	1060	983	1010	1070	1000	1040
15	950	880	929	990	911	956	1090	1030	1060	1040	994	1020
16	930	880	918	994	931	967	1070	1030	1050	1060	997	1030
17	970	930	949	1030	929	986	1070	1010	1040	1050	1010	1030
18	970	940	960	966	653	796	1140	1030	1090	1090	1030	1070
19	980	950	965	865	775	834	1080	1040	1060	1080	1060	1070
20	990	950	971	929	854	901	1070	1010	1040	1080	1020	1060
21	970	930	960	973	900	940	1060	1020	1040	1080	998	1050
22	970	920	952	1030	950	987	1080	1030	1060	1030	983	1010
23	960	920	939	1070	955	1020	1060	1030	1040	1070	987	1050
24	970	920	954	1060	981	1020	1050	1000	1030	1070	1020	1040
25	980	940	962	1070	1000	1040	1030	991	1010	1050	1020	1030
26	990	950	970	1080	1030	1050	1010	984	995	1040	1000	1020
27	1000	940	973	1090	1030	1050	1000	980	994	1060	1010	1040
28	950	920	937	1080	1030	1050	1030	980	1010	1060	989	1020
29	960	900	937	1130	1060	1090	1050	1020	1030	1010	945	981
30	940	900	923	1180	1060	1120	1040	1010	1030	1020	949	996
31	970	910	941	---	---	---	1030	990	1010	1040	987	1020
MONTH	1000	840	928	1180	653	963	1180	953	1030	1090	891	1030

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1060	996	1020	1010	895	947	984	945	962	1020	976	1000
2	1050	1010	1030	993	951	974	1010	949	990	1030	976	1000
3	1040	988	1020	994	923	957	1010	969	987	1040	963	1000
4	1020	963	990	1020	927	954	1020	978	1000	996	944	971
5	987	942	964	986	939	962	1010	981	997	1020	957	987
6	996	943	977	990	946	965	1020	963	992	1020	956	986
7	990	953	973	990	954	975	996	937	968	1030	955	1000
8	1010	953	985	999	969	985	963	928	943	1030	986	1010
9	1030	953	992	992	966	980	1010	931	978	1050	976	1020
10	977	940	959	1020	953	989	1010	966	988	1020	975	1010
11	967	926	947	994	940	966	1020	970	998	1010	968	991
12	982	919	950	1000	944	987	1020	960	991	1020	953	984
13	1030	919	971	1020	983	1010	1000	960	986	990	934	961
14	1010	951	982	1040	997	1020	1020	964	992	1020	935	980
15	966	933	953	1060	988	1020	1010	964	986	1020	937	979
16	1000	946	979	1020	975	996	1040	977	1010	995	919	963
17	990	939	969	1010	965	981	1060	978	1030	960	928	938
18	990	924	960	997	955	974	1080	1000	1050	1030	923	947
19	961	915	935	1040	974	1010	1070	997	1040	1050	1020	1030
20	977	913	942	1020	996	1010	1050	988	1020	1050	1020	1030
21	977	913	949	1040	999	1020	1080	1010	1040	1090	1020	1060
22	977	935	957	1040	1000	1020	1070	976	1030	1110	1060	1090
23	971	922	949	1040	983	1010	1060	976	1020	1110	1040	1070
24	955	922	938	1010	980	995	1070	992	1040	1110	1040	1080
25	965	898	927	1020	960	990	1050	1010	1030	1090	1050	1070
26	920	877	897	1030	969	1010	1050	1000	1030	1070	1020	1050
27	944	882	914	1040	989	1020	1040	986	1010	1080	1020	1050
28	947	895	922	1030	979	1010	1030	952	1000	1090	1010	1050
29	961	886	911	1010	966	992	1070	948	998	1150	1020	1100
30	---	---	---	1010	964	984	1040	975	996	1110	1070	1090
31	---	---	---	998	946	970	---	---	---	1140	1060	1090
MONTH	1060	877	961	1060	895	990	1080	928	1000	1150	919	1020

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1090	1040	1070	913	865	890	959	903	931	785	648	696
2	1070	1000	1040	911	874	892	985	902	944	843	768	808
3	1080	1000	1040	914	876	896	962	903	929	881	818	848
4	1130	1000	1080	954	897	921	931	888	910	885	832	862
5	1110	1040	1070	945	888	919	926	866	896	886	848	862
6	1100	1040	1070	925	891	905	943	872	911	944	852	898
7	1110	1030	1070	930	878	901	948	885	920	977	876	919
8	1050	1000	1030	922	872	898	969	900	936	945	885	910
9	1060	1010	1030	899	868	879	940	885	916	917	440	777
10	1060	996	1030	894	832	875	919	884	905	820	410	502
11	1050	991	1020	887	835	859	952	877	909	661	515	583
12	1120	975	1030	861	817	840	914	865	886	782	661	737
13	1000	955	973	896	830	870	955	878	919	841	778	818
14	1020	929	982	873	818	852	954	898	923	879	822	847
15	979	901	935	892	850	866	950	893	920	913	444	726
16	937	900	925	916	851	885	932	887	909	719	625	660
17	956	897	924	858	814	843	918	887	902	740	660	700
18	987	902	950	938	846	898	942	886	912	805	728	765
19	1030	953	994	925	861	895	931	864	896	816	752	787
20	1040	951	984	915	876	898	933	864	910	873	798	842
21	991	907	958	933	866	903	935	871	918	902	855	871
22	949	909	923	925	857	891	965	898	938	955	876	917
23	938	882	917	911	856	891	984	875	940	949	902	927
24	948	900	919	940	899	919	918	782	847	1000	907	947
25	967	899	934	998	877	928	864	777	824	963	787	884
26	1110	879	985	998	402	614	863	779	821	877	815	855
27	934	874	902	825	668	768	836	682	784	934	873	910
28	906	876	892	844	803	826	852	744	802	939	914	925
29	886	860	869	898	843	868	929	802	877	972	919	947
30	888	861	877	931	857	897	802	443	572	991	939	958
31	---	---	---	930	884	909	845	549	699	---	---	---
MONTH	1130	860	981	998	402	874	985	443	881	1000	410	823
YEAR	1180	402	957									

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	8.2	8.2	8.0	7.9	7.9	8.0	7.9	7.9	8.1	7.9	8.0
2	8.1	e8.0	8.1	8.0	7.8	7.9	7.9	7.8	7.9	8.1	7.9	8.0
3	8.1	8.0	8.1	8.0	7.9	7.9	7.9	7.7	7.8	8.2	8.0	8.1
4	8.0	7.9	8.0	8.0	7.8	7.9	8.0	7.8	7.9	8.1	8.0	8.1
5	8.1	8.0	8.0	7.9	7.8	7.8	7.9	7.8	7.8	8.1	7.9	8.0
6	8.1	8.0	8.1	7.9	7.7	7.8	7.9	7.8	7.8	8.1	7.9	8.0
7	8.2	8.0	8.1	7.9	7.7	7.8	7.9	7.8	7.8	8.1	7.9	8.0
8	8.2	8.0	8.1	7.9	7.7	7.8	7.8	7.8	7.8	8.1	7.9	8.0
9	8.1	8.0	8.1	8.2	7.7	7.9	7.9	7.8	7.8	8.3	7.8	8.0
10	8.1	8.0	8.1	8.1	8.0	8.1	7.9	7.8	7.8	8.3	8.1	8.2
11	8.2	8.1	8.1	8.1	8.0	8.0	7.9	7.8	7.8	8.2	8.1	8.1
12	8.2	8.1	8.1	8.1	8.0	8.1	7.9	7.8	7.9	8.3	8.1	8.2
13	8.2	8.1	8.1	8.1	8.0	8.0	7.9	7.8	7.9	8.3	8.1	8.2
14	8.2	8.1	8.2	8.1	8.0	8.0	8.2	7.8	7.9	8.3	8.0	8.1
15	8.2	8.1	8.2	8.1	7.9	8.0	8.1	7.9	8.0	8.2	8.0	8.1
16	8.2	8.1	8.2	8.1	7.9	8.0	8.1	7.8	7.9	8.1	7.9	8.0
17	8.2	8.0	8.1	8.0	7.9	8.0	8.0	7.9	8.0	8.1	7.9	8.0
18	8.1	8.0	8.0	8.0	7.8	7.9	8.2	8.0	8.1	8.2	8.0	8.1
19	8.1	8.0	8.0	8.1	7.9	8.0	8.2	8.1	8.1	8.2	8.0	8.1
20	8.4	8.3	8.1	8.1	7.9	8.0	8.1	8.0	8.1	8.3	8.0	8.1
21	8.1	8.0	8.1	8.2	7.9	8.0	8.1	8.0	8.0	8.2	8.0	8.1
22	8.1	8.0	8.1	8.0	7.8	7.9	8.1	8.0	8.0	8.2	8.0	8.1
23	8.1	8.0	8.1	8.0	7.8	7.9	8.2	8.0	8.1	8.1	7.9	8.0
24	8.1	8.0	8.1	8.1	7.9	8.0	8.2	8.0	8.1	8.3	8.0	8.1
25	8.1	8.0	8.1	8.0	7.8	7.9	8.2	8.1	8.1	8.3	8.1	8.2
26	8.1	7.9	8.0	8.0	7.9	7.9	8.2	8.1	8.1	8.3	8.1	8.2
27	8.0	7.9	8.0	8.0	7.8	7.9	8.2	8.1	8.1	8.2	8.0	8.1
28	8.0	7.9	8.0	7.9	7.7	7.9	8.1	8.0	8.1	8.2	8.0	8.1
29	8.0	7.9	8.0	8.0	7.8	7.9	8.1	8.0	8.0	8.2	7.9	8.1
30	8.0	7.9	7.9	8.1	7.9	8.0	8.1	8.0	8.0	8.1	7.9	8.0
31	8.0	7.9	7.9	---	---	---	8.1	8.0	8.0	8.2	8.0	8.1
MONTH	8.4	7.9	8.1	8.2	7.7	7.9	8.2	7.7	8.0	8.3	7.8	8.1

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.2	8.0	8.1	8.0	7.7	7.9	7.9	7.7	7.8	8.0	7.8	7.9
2	8.2	8.0	8.1	8.1	7.9	8.0	7.9	7.6	7.8	7.9	7.8	7.9
3	8.3	8.0	8.1	8.1	7.9	8.0	7.9	7.7	7.8	7.9	7.9	7.9
4	8.3	8.0	8.1	8.0	7.8	7.9	7.9	7.7	7.8	8.0	7.8	7.9
5	8.2	8.0	8.1	7.8	7.7	7.8	7.9	7.7	7.8	8.0	7.7	7.8
6	8.1	7.9	8.0	7.8	7.7	7.8	7.9	7.7	7.8	8.0	7.7	7.8
7	8.1	7.8	7.9	7.8	7.7	7.8	8.1	7.9	8.0	8.0	7.8	7.9
8	8.1	7.9	7.9	7.9	7.7	7.8	8.1	7.9	8.0	8.0	7.7	7.9
9	8.1	7.8	7.9	8.0	7.8	7.9	8.0	7.6	7.7	8.0	7.9	7.9
10	8.0	7.8	7.9	8.0	7.8	7.9	7.9	7.6	7.8	8.1	7.8	7.9
11	8.0	7.6	7.8	7.9	7.7	7.9	7.9	7.7	7.8	8.1	7.9	8.0
12	8.1	7.7	7.9	7.9	7.7	7.8	7.8	7.7	7.8	8.1	7.8	8.0
13	8.2	7.8	8.0	7.8	7.6	7.7	7.9	7.6	7.7	8.1	7.9	8.0
14	8.1	7.9	8.0	7.8	7.5	7.7	7.9	7.6	7.8	8.0	7.7	7.8
15	8.2	7.9	8.0	7.9	7.5	7.7	7.8	7.6	7.7	7.8	7.6	7.7
16	8.2	7.9	8.0	8.0	7.7	7.8	7.9	7.6	7.7	7.8	7.7	7.8
17	8.1	7.8	8.0	8.0	7.7	7.8	7.9	7.7	7.8	7.9	7.8	7.8
18	8.1	7.8	7.9	7.9	7.5	7.7	7.9	7.8	7.8	7.9	7.8	7.9
19	8.1	7.8	7.9	7.9	7.5	7.7	7.9	7.7	7.8	7.9	7.9	7.9
20	8.1	7.8	7.9	8.0	7.7	7.8	7.9	7.7	7.8	7.9	7.8	7.9
21	8.1	7.8	7.9	8.0	7.7	7.9	7.9	7.6	7.8	8.0	7.8	7.9
22	8.0	7.8	7.9	8.0	7.7	7.9	7.9	7.6	7.7	7.9	7.8	7.9
23	7.9	7.8	7.9	7.9	7.6	7.8	7.9	7.6	7.8	8.0	7.9	7.9
24	7.9	7.7	7.8	8.0	7.8	7.9	8.0	7.8	7.9	8.0	7.9	7.9
25	8.0	7.7	7.8	8.0	7.8	7.9	8.0	7.8	7.9	7.9	7.8	7.9
26	7.8	7.6	7.8	7.9	7.8	7.9	8.0	7.9	7.9	8.0	7.8	7.9
27	7.8	7.5	7.7	7.9	7.8	7.8	8.0	7.8	7.9	7.9	7.7	7.8
28	7.9	7.6	7.7	8.0	7.8	7.9	8.0	7.8	7.9	7.8	7.6	7.7
29	7.9	7.8	7.8	7.9	7.7	7.8	8.0	7.7	7.8	7.9	7.6	7.7
30	---	---	---	7.9	7.7	7.8	8.0	7.8	7.9	8.0	7.8	7.9
31	---	---	---	8.0	7.7	7.8	---	---	---	7.9	7.8	7.8
MONTH	8.3	7.5	7.9	8.1	7.5	7.8	8.1	7.6	7.8	8.1	7.6	7.9
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	7.8	7.9	7.9	7.7	7.8	8.1	7.9	8.0	8.2	8.0	8.1
2	8.1	7.8	7.9	7.9	7.7	7.8	8.1	8.0	8.0	8.2	8.1	8.1
3	8.0	7.8	7.9	7.9	7.8	7.8	8.1	8.0	8.0	8.1	8.0	8.1
4	7.9	7.7	7.8	7.9	7.7	7.8	8.2	8.0	8.1	8.1	8.0	8.1
5	8.1	7.7	7.9	7.9	7.6	7.7	8.1	8.0	8.1	8.1	8.1	8.1
6	8.0	7.8	7.9	7.9	7.6	7.7	8.1	8.0	8.0	8.1	8.1	8.1
7	8.0	7.8	7.9	7.9	7.7	7.8	8.1	8.0	8.1	8.2	8.1	8.1
8	8.1	7.8	8.0	8.1	8.0	8.1	8.1	8.0	8.0	8.1	8.0	8.0
9	8.1	7.8	8.0	7.9	7.9	7.9	8.2	8.0	8.1	8.0	7.9	8.0
10	8.0	7.8	7.9	8.0	7.9	7.9	8.2	8.1	8.1	8.0	7.8	7.9
11	8.1	7.8	7.9	8.0	7.9	7.9	8.2	8.0	8.1	7.9	7.8	7.9
12	7.9	7.8	7.9	8.0	7.9	7.9	8.0	7.9	8.0	8.0	7.9	8.0
13	7.9	7.9	7.9	8.0	7.8	7.9	8.0	7.9	8.0	8.0	7.8	7.9
14	7.9	7.9	7.9	8.0	7.8	7.9	8.1	7.9	8.0	8.0	7.9	7.9
15	8.0	7.9	8.0	8.0	7.8	7.9	8.1	8.0	8.1	7.9	7.7	7.9
16	8.0	7.9	8.0	8.0	7.8	7.9	8.1	8.0	8.1	7.9	7.8	7.8
17	8.0	7.8	7.9	8.1	8.0	8.0	8.2	8.0	8.1	7.9	7.8	7.9
18	8.0	7.8	7.9	8.1	7.8	7.9	8.1	7.9	8.0	7.9	7.8	7.8
19	7.9	7.7	7.8	8.0	7.8	7.9	8.1	8.0	8.0	7.9	7.8	7.9
20	7.9	7.7	7.8	8.1	7.8	7.9	8.1	7.9	8.0	7.9	7.8	7.9
21	7.9	7.6	7.8	8.1	7.9	8.0	8.1	7.9	8.0	8.0	7.9	7.9
22	8.0	7.9	7.9	8.1	7.9	8.0	8.1	8.0	8.0	8.0	7.8	7.9
23	8.0	7.9	8.0	8.2	8.0	8.1	8.0	7.9	8.0	8.0	7.8	7.8
24	8.0	7.8	7.9	8.2	8.0	8.1	7.9	7.8	7.9	7.9	7.8	7.8
25	7.9	7.7	7.8	8.2	7.8	8.1	7.9	7.8	7.9	7.9	7.8	7.8
26	7.8	7.7	7.7	7.9	7.7	7.8	8.0	7.7	7.9	7.9	7.7	7.8
27	8.0	7.6	7.8	7.9	7.7	7.8	8.1	8.0	8.1	7.9	7.8	7.9
28	8.1	7.9	8.0	8.0	7.9	7.9	8.3	8.1	8.2	7.9	7.8	7.8
29	8.1	8.0	8.0	8.1	7.9	8.0	8.2	8.1	8.2	7.9	7.8	7.8
30	8.0	7.9	7.9	8.0	8.0	8.0	8.2	7.9	8.1	8.1	7.8	7.9
31	---	---	---	8.0	7.9	8.0	8.1	7.9	8.0	---	---	---
MONTH	8.1	7.6	7.9	8.2	7.6	7.9	8.3	7.7	8.0	8.2	7.7	7.9
YEAR	8.4	7.5	7.9									

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	27.5	26.5	27.0	23.5	21.5	22.5	18.0	15.5	16.5	18.5	16.5	18.0
2	27.5	26.0	26.5	23.5	22.5	23.0	20.5	17.5	19.5	17.5	15.0	16.0
3	26.5	25.5	26.0	22.5	19.5	20.5	21.5	20.5	21.0	16.0	14.0	15.0
4	26.0	24.0	25.0	20.5	17.5	19.0	21.5	20.0	20.5	16.0	14.0	15.0
5	25.5	24.0	24.5	19.0	15.5	17.5	21.5	20.0	20.5	16.5	14.5	15.5
6	24.5	23.0	23.5	19.0	16.5	18.5	21.0	20.0	20.5	16.5	13.5	15.0
7	23.5	21.5	22.5	20.0	18.0	19.0	20.5	19.0	19.5	15.0	12.5	13.5
8	23.0	21.0	22.0	20.0	18.0	19.0	20.0	18.5	19.5	14.5	12.0	13.0
9	23.5	22.0	22.5	20.0	18.5	19.5	19.5	16.0	17.5	15.0	12.5	13.5
10	23.5	22.0	22.5	22.0	20.0	21.0	17.0	14.5	16.0	16.0	13.5	14.5
11	23.5	22.0	22.5	21.5	18.0	20.0	18.0	16.0	16.5	16.0	14.5	15.5
12	24.0	22.0	23.0	19.5	16.5	17.5	19.5	18.0	18.5	16.5	14.5	15.5
13	24.5	23.0	23.5	19.5	17.0	18.5	20.5	19.0	19.5	17.5	15.0	15.5
14	24.5	22.0	23.0	19.0	17.5	18.5	21.5	20.0	20.5	17.5	15.5	16.5
15	23.0	20.5	21.5	19.0	17.0	18.5	22.5	21.0	21.5	18.0	16.0	17.0
16	22.0	20.0	21.0	19.5	17.5	19.0	22.0	20.5	21.0	19.0	17.0	17.5
17	23.0	21.0	22.0	20.5	18.5	19.5	22.5	21.0	21.5	20.0	18.5	19.0
18	24.0	22.0	23.0	19.5	18.0	18.5	22.5	20.0	21.0	19.5	16.5	18.5
19	25.0	23.0	23.5	20.0	18.5	19.0	20.0	18.0	18.5	16.5	15.0	16.0
20	24.5	22.0	23.0	20.0	19.0	19.5	18.5	16.0	17.0	17.5	15.0	15.5
21	22.5	20.5	21.5	20.5	19.0	19.5	17.5	15.0	16.5	18.0	15.5	16.0
22	23.5	21.5	22.0	21.0	19.5	20.0	17.0	15.0	16.0	19.0	17.5	18.0
23	23.5	22.5	23.5	21.0	19.5	20.0	16.5	14.5	15.5	20.5	19.0	19.5
24	23.5	21.0	22.0	21.0	18.0	19.0	16.5	14.0	15.5	19.5	17.5	18.5
25	23.5	21.5	22.5	19.0	17.0	17.5	17.0	15.0	15.5	18.0	16.5	17.0
26	24.5	23.0	23.5	19.5	17.0	18.0	16.5	14.5	15.5	19.5	18.0	18.5
27	25.0	24.0	24.5	20.0	18.5	19.0	17.0	14.5	15.5	18.5	15.5	16.5
28	24.5	22.5	23.5	19.5	16.5	17.5	17.0	15.0	16.0	18.0	15.0	16.0
29	23.5	21.0	22.5	17.0	15.0	16.5	16.5	14.0	15.5	19.0	17.5	18.0
30	22.5	21.0	22.0	16.5	14.5	15.5	18.0	15.5	16.5	20.0	19.0	19.0
31	23.0	20.5	22.0	---	---	---	18.5	16.5	17.5	19.0	15.0	17.0
MONTH	27.5	20.0	23.0	23.5	14.5	19.0	22.5	14.0	18.0	20.5	12.0	16.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	15.5	13.0	14.5	17.5	14.5	15.5	22.0	20.0	21.0	24.5	22.0	23.0
2	14.0	12.0	13.5	18.0	15.0	16.0	21.0	19.5	20.5	24.5	23.0	23.5
3	14.0	11.5	13.0	19.0	15.5	17.0	22.0	20.0	21.0	25.0	24.0	24.5
4	14.0	11.0	12.5	19.5	18.0	18.5	23.5	21.5	22.0	25.5	24.0	25.0
5	14.0	11.5	13.0	21.5	19.5	20.5	22.5	19.5	20.5	26.0	25.0	25.5
6	17.0	14.0	15.0	22.5	20.5	21.5	20.0	18.5	19.0	26.0	25.5	25.5
7	18.0	16.0	16.5	20.5	18.0	18.5	20.0	17.5	19.0	26.0	25.0	25.5
8	19.0	17.5	18.0	18.0	16.0	17.0	21.5	18.0	19.5	26.5	25.5	26.0
9	19.5	17.5	18.5	17.5	15.0	16.0	22.5	19.5	20.5	27.0	25.5	26.0
10	21.0	19.0	19.5	18.0	15.0	16.0	23.5	21.0	22.0	26.5	26.0	26.0
11	20.5	18.5	19.5	19.0	16.0	17.0	23.5	22.5	22.5	26.5	25.5	26.0
12	19.0	17.0	17.5	20.0	17.5	18.0	24.5	23.0	23.5	26.5	25.0	26.0
13	18.5	16.5	17.5	21.5	19.0	20.0	25.0	22.5	23.5	27.5	25.5	26.5
14	19.5	17.5	18.0	23.0	20.5	21.5	25.0	23.5	24.5	27.5	26.0	26.5
15	19.5	18.0	18.5	23.5	21.5	22.5	24.0	22.0	23.0	28.0	26.0	27.0
16	18.5	17.0	18.0	23.5	22.0	22.5	23.0	21.0	22.0	28.5	26.5	27.0
17	18.5	16.0	17.0	23.5	21.5	22.5	24.0	22.0	23.0	28.0	26.5	27.0
18	19.5	17.5	18.0	22.5	21.0	21.5	25.5	22.5	24.0	28.0	26.5	27.0
19	20.5	18.5	19.5	21.0	19.0	20.0	26.5	24.5	25.5	28.0	26.0	27.0
20	21.0	18.5	19.5	20.5	18.5	19.5	26.0	25.0	25.5	28.5	26.5	27.5
21	21.5	19.0	20.0	20.5	18.5	19.5	26.0	25.0	25.5	29.0	27.0	28.0
22	22.5	20.0	21.0	22.0	19.5	20.5	25.5	24.5	25.0	29.0	27.0	28.0
23	23.5	21.5	22.0	21.5	20.0	21.0	24.5	23.0	24.0	29.0	27.0	28.0
24	22.0	20.5	21.5	22.5	21.0	21.5	25.0	22.5	23.5	28.0	27.0	27.5
25	22.5	21.0	22.0	22.0	19.5	21.0	26.0	23.5	24.5	28.5	27.0	27.5
26	23.0	22.0	22.5	19.5	17.0	18.5	25.5	24.5	24.5	28.0	26.5	27.5
27	23.5	22.5	23.0	18.0	16.5	17.5	25.5	24.0	25.0	28.0	27.0	27.5
28	22.5	19.0	20.5	20.0	17.5	18.5	26.0	24.5	25.0	28.5	27.5	28.0
29	19.0	16.0	17.5	19.5	18.0	19.0	25.5	22.0	24.0	29.5	27.5	28.5
30	---	---	---	22.0	19.5	20.5	23.5	21.5	22.0	29.5	28.0	28.5
31	---	---	---	21.5	20.0	21.0	---	---	---	28.5	27.5	28.0
MONTH	23.5	11.0	18.0	23.5	14.5	19.5	26.5	17.5	23.0	29.5	22.0	26.5

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29.0	27.0	28.0	29.5	28.0	29.0	31.0	29.0	30.0	28.0	26.5	27.5
2	29.0	27.5	28.5	30.0	28.5	29.0	31.0	29.0	30.0	29.0	27.0	28.0
3	29.0	27.0	28.0	30.0	28.5	29.5	31.0	29.5	30.0	29.5	28.0	28.5
4	29.0	27.0	28.0	30.0	28.5	29.5	31.0	29.0	30.0	29.0	28.0	28.5
5	29.5	27.5	28.5	30.0	28.5	29.0	30.5	29.0	30.0	29.0	28.0	28.5
6	29.5	27.5	28.5	30.5	28.5	29.5	30.5	29.0	30.0	29.5	28.0	28.5
7	28.5	27.0	28.0	30.5	28.5	29.5	31.0	29.0	30.0	28.5	27.5	28.0
8	28.5	26.5	27.5	30.5	29.0	29.5	30.0	29.0	29.5	29.0	27.5	28.0
9	28.0	26.0	27.0	30.0	29.0	29.5	30.5	28.5	29.5	28.5	27.0	28.0
10	28.5	26.5	27.5	30.0	28.5	29.0	30.0	29.0	29.5	27.5	25.5	26.5
11	28.5	26.5	27.5	29.5	28.5	29.0	30.5	29.0	29.5	27.5	26.0	27.0
12	29.5	27.5	28.5	30.0	28.5	29.0	31.0	29.0	30.0	28.0	26.5	27.0
13	29.5	28.0	28.5	30.0	28.5	29.5	31.0	29.5	30.5	27.5	27.0	27.0
14	30.0	28.0	29.0	30.0	29.0	29.5	30.5	29.5	30.0	28.0	26.5	27.0
15	30.0	28.0	29.0	30.5	29.0	29.5	30.0	28.5	29.5	28.0	26.0	26.5
16	30.0	28.0	29.0	30.5	29.0	29.5	30.0	28.5	29.0	27.5	25.5	26.5
17	30.0	28.0	29.0	30.0	28.5	29.5	30.0	28.5	29.5	28.5	27.0	27.5
18	30.5	28.5	29.5	30.5	29.0	29.5	30.0	28.5	29.0	29.0	27.5	28.0
19	31.0	28.5	29.5	30.5	29.0	30.0	30.0	28.5	29.0	29.0	28.0	28.5
20	31.0	29.0	30.0	31.0	29.0	30.0	30.0	28.5	29.0	29.0	28.0	28.5
21	30.5	29.0	30.0	30.5	29.0	30.0	29.5	28.5	29.0	28.5	27.5	28.0
22	30.0	29.0	29.5	30.5	29.0	30.0	29.0	28.0	28.5	28.5	27.5	28.0
23	30.0	28.5	29.0	30.5	29.0	30.0	28.0	27.5	28.0	29.0	27.5	28.5
24	30.0	28.5	29.0	30.5	29.0	30.0	28.0	27.0	27.0	29.0	28.0	28.5
25	29.5	29.0	29.0	31.0	29.0	30.0	28.0	27.0	27.0	28.5	26.5	27.5
26	29.0	28.0	28.5	29.5	25.5	27.0	27.5	27.0	27.0	28.5	27.5	27.5
27	29.5	28.5	29.0	29.5	27.5	28.5	28.0	26.5	27.0	28.0	25.5	27.0
28	29.5	28.5	29.0	30.0	28.5	29.0	29.0	27.5	28.0	25.5	24.0	24.5
29	29.5	28.0	28.5	30.5	28.5	29.5	29.0	28.0	28.5	24.5	22.5	23.5
30	29.5	28.0	28.5	30.5	29.0	29.5	28.5	26.0	26.5	24.0	23.0	23.5
31	---	---	---	31.0	29.0	30.0	28.5	27.0	27.0	---	---	---
MONTH	31.0	26.0	28.5	31.0	25.5	29.5	31.0	26.0	29.0	29.5	22.5	27.5
YEAR	31.0	11.0	23.0									

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.8	6.3	6.5	8.0	7.3	7.6	9.2	7.8	8.4	9.0	7.6	8.3
2	7.1	6.3	6.7	8.0	7.2	7.5	8.2	6.9	7.5	9.7	8.1	8.7
3	7.0	6.4	6.7	8.6	7.4	7.9	7.7	6.3	7.0	10.4	8.6	9.3
4	6.8	6.2	6.5	9.1	8.0	8.4	7.7	6.2	6.8	10.3	8.8	9.3
5	7.5	6.7	6.9	9.5	8.1	8.7	7.6	6.1	6.6	10.3	8.6	9.2
6	7.9	7.0	7.4	9.3	7.9	8.5	7.6	6.1	6.7	10.8	8.7	9.5
7	8.6	7.4	7.8	8.9	7.7	8.2	7.9	6.6	6.9	11.1	8.9	9.8
8	8.5	7.6	8.0	8.9	7.6	8.2	7.6	6.6	7.0	11.2	9.3	10.1
9	8.5	7.5	7.8	9.7	7.9	8.3	8.8	6.9	7.8	11.0	8.9	9.8
10	8.4	7.3	7.7	8.4	7.5	7.9	9.7	8.0	8.7	10.1	8.5	9.1
11	8.6	7.7	7.9	8.4	7.4	7.9	9.5	8.2	8.6	9.7	8.1	8.8
12	8.5	7.7	7.9	9.2	8.0	8.5	8.7	7.6	8.0	10.0	8.3	8.8
13	8.2	7.5	7.8	9.1	8.0	8.4	8.3	7.2	7.6	10.0	8.3	8.9
14	8.2	7.5	7.8	8.9	7.9	8.3	7.7	6.6	7.0	9.7	8.0	8.7
15	8.6	7.7	8.2	9.1	7.6	8.3	7.4	6.2	6.6	9.8	8.0	8.7
16	8.9	7.9	8.3	9.2	7.7	8.3	7.8	6.5	7.0	9.2	7.6	8.2
17	8.6	7.7	8.1	8.1	7.3	7.8	7.4	6.2	6.7	8.5	6.9	7.6
18	8.3	7.5	7.8	8.6	8.0	8.2	7.5	6.5	6.9	8.9	6.9	7.8
19	7.9	7.2	7.5	8.8	7.8	8.2	8.0	6.9	7.4	9.9	7.9	8.6
20	8.1	7.0	7.5	8.6	7.5	7.9	8.8	7.5	8.0	10.5	8.2	9.0
21	8.4	7.6	8.0	8.7	7.3	7.8	8.6	7.7	8.1	10.1	7.8	8.7
22	8.2	7.3	7.8	8.2	7.1	7.5	9.2	8.0	8.4	9.4	7.5	8.3
23	7.8	7.1	7.3	8.2	6.9	7.3	9.5	8.1	8.7	8.8	6.9	7.7
24	8.1	7.2	7.6	8.8	7.1	7.8	9.8	8.3	8.9	9.8	7.1	8.3
25	8.1	7.3	7.7	9.0	7.6	8.1	9.8	8.2	8.9	10.5	8.1	9.0
26	7.7	7.0	7.3	9.1	7.5	8.2	10.0	8.3	9.0	10.1	7.9	8.8
27	7.8	7.1	7.3	8.7	7.3	7.7	10.3	8.4	9.0	11.1	8.4	9.5
28	8.0	7.1	7.5	9.0	7.2	7.9	9.9	8.3	8.9	10.7	8.7	9.5
29	8.0	7.4	7.6	9.2	7.9	8.5	9.8	8.6	9.0	10.7	8.3	9.2
30	8.0	7.5	7.7	9.6	8.2	8.9	9.6	8.2	8.8	9.4	7.9	8.6
31	8.0	7.3	7.6	---	---	---	9.5	8.0	8.6	10.4	8.4	9.2
MONTH	8.9	6.2	7.6	9.7	6.9	8.1	10.3	6.1	7.9	11.2	6.9	8.9

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.7	9.1	9.8	9.3	8.6	9.0	6.6	4.7	5.8	7.6	6.6	6.9
2	12.1	9.9	10.7	10.2	8.8	9.2	6.4	4.5	5.5	7.0	6.4	6.7
3	13.2	10.5	11.4	10.0	8.4	9.0	6.3	5.1	5.6	7.4	6.6	7.0
4	13.7	10.9	11.8	8.8	7.0	8.2	5.8	4.3	5.1	6.9	6.0	6.4
5	12.9	10.6	11.3	8.1	7.2	7.6	5.9	4.3	5.1	6.4	5.5	6.0
6	12.1	9.6	10.5	8.0	6.8	7.4	6.3	4.1	5.1	6.5	5.2	5.8
7	11.0	8.4	9.3	8.6	7.5	8.0	7.3	5.6	6.4	6.4	4.9	5.7
8	10.9	8.4	9.2	9.8	8.2	8.9	7.4	6.1	6.6	6.1	5.1	5.6
9	10.3	7.7	8.7	10.5	8.6	9.4	8.5	5.0	6.6	6.6	5.6	6.1
10	9.8	7.3	8.2	10.5	8.6	9.3	8.6	7.2	8.0	6.9	5.9	6.4
11	9.7	5.8	7.7	9.6	8.0	8.7	8.1	6.8	7.5	7.3	6.2	6.9
12	11.1	7.6	9.1	8.9	7.3	8.0	7.8	6.4	7.1	7.7	6.0	7.0
13	10.8	6.0	8.7	8.4	6.5	7.4	7.4	5.8	6.6	7.8	6.5	7.3
14	10.3	5.6	7.7	7.5	5.6	6.7	7.1	5.4	6.3	7.3	6.3	6.9
15	10.3	7.9	8.8	7.2	5.4	6.4	6.8	5.6	6.3	7.7	6.6	7.1
16	10.5	8.0	9.0	8.0	5.8	6.8	7.4	6.0	6.6	8.1	6.7	7.4
17	11.2	8.4	9.4	8.1	5.5	6.9	7.8	6.7	7.2	8.3	6.9	7.4
18	10.2	7.7	8.7	7.2	5.3	6.4	7.8	6.5	7.2	8.0	6.8	7.3
19	9.9	7.1	8.1	8.3	5.1	6.7	7.4	6.3	6.7	7.6	6.4	6.8
20	9.2	6.7	7.7	9.0	6.2	7.6	6.9	5.6	6.4	7.2	6.1	6.5
21	8.9	6.7	7.5	8.7	6.7	7.8	7.0	5.4	6.4	7.0	5.8	6.2
22	8.3	6.1	7.1	8.7	6.4	7.6	6.9	5.3	5.8	7.0	5.8	6.3
23	8.2	6.1	7.0	7.5	4.6	6.2	7.0	5.9	6.4	7.2	5.7	6.3
24	8.3	6.0	7.0	9.0	6.6	7.6	8.0	6.7	7.3	7.2	6.0	6.5
25	8.4	6.2	7.2	8.7	6.6	7.8	7.9	6.8	7.4	6.9	5.8	6.3
26	7.4	5.9	6.7	8.6	7.6	8.1	7.6	6.6	7.1	6.9	5.6	6.3
27	7.0	5.8	6.4	9.5	7.6	8.5	7.4	6.5	7.0	6.5	5.5	6.1
28	8.0	6.2	7.0	10.4	8.6	9.3	7.3	6.3	6.8	6.0	5.1	5.6
29	9.1	8.0	8.5	8.9	6.9	8.2	7.0	5.8	6.4	5.8	4.6	5.1
30	---	---	---	9.5	7.6	8.4	7.6	6.6	7.0	6.2	3.8	4.8
31	---	---	---	9.6	6.4	8.1	---	---	---	6.0	5.0	5.5
MONTH	13.7	5.6	8.6	10.5	4.6	7.9	8.6	4.1	6.5	8.3	3.8	6.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6.8	4.9	5.9	5.6	5.0	5.3	7.4	6.7	7.0	7.6	6.9	7.3
2	7.1	4.9	6.1	5.6	4.8	5.2	7.3	6.6	6.9	7.6	6.7	7.1
3	6.2	4.7	5.4	6.8	5.2	5.9	7.2	6.5	6.8	7.5	7.0	7.2
4	5.5	3.9	4.7	7.1	5.9	6.4	7.2	6.5	6.7	7.3	6.5	7.2
5	6.6	4.2	5.4	6.8	5.4	6.2	7.0	6.5	6.7	7.3	6.6	7.2
6	6.3	4.8	5.6	6.5	5.0	5.9	7.1	6.5	6.7	7.7	7.2	7.3
7	6.2	4.9	5.7	6.4	5.0	5.8	7.3	6.4	6.8	7.9	7.6	7.8
8	7.2	5.4	6.3	6.1	5.1	5.6	7.3	6.5	6.9	7.7	7.5	7.6
9	6.7	5.3	6.2	6.3	5.4	5.8	7.4	6.4	6.9	7.8	7.2	7.6
10	6.6	5.3	6.1	6.9	5.5	6.0	7.3	6.6	6.9	7.5	6.3	7.1
11	7.3	5.5	6.3	7.1	6.0	6.5	7.1	6.4	6.7	7.6	7.2	7.5
12	7.4	5.4	6.3	7.0	6.2	6.5	6.8	6.3	6.6	7.5	6.9	7.2
13	7.7	6.4	7.1	6.7	6.0	6.4	6.7	6.0	6.4	7.0	6.7	6.8
14	7.2	6.3	6.6	6.5	5.9	6.2	7.0	6.3	6.7	6.9	6.5	6.8
15	6.8	5.9	6.2	6.4	5.4	5.9	7.3	6.4	6.8	7.1	5.2	6.6
16	6.6	5.6	6.0	6.2	5.6	5.8	7.3	6.6	6.9	---	---	---
17	6.7	5.7	6.0	6.2	5.7	6.0	7.8	6.9	7.2	---	---	---
18	6.3	5.3	5.7	6.4	5.6	6.0	7.9	6.9	7.3	---	---	---
19	5.9	4.7	5.3	6.1	5.4	5.8	---	---	---	---	---	---
20	6.1	5.1	5.5	6.0	5.1	5.6	7.7	6.9	7.2	---	---	---
21	5.9	4.7	5.4	6.2	4.9	5.5	7.8	7.0	7.3	---	---	---
22	6.2	5.1	5.7	7.6	4.9	6.4	7.6	7.0	7.2	---	---	---
23	6.6	5.3	5.8	7.3	6.3	6.8	7.6	7.1	7.2	---	---	---
24	6.2	5.0	5.5	7.1	6.1	6.5	7.3	6.3	7.0	---	---	---
25	5.7	4.3	5.1	7.0	5.2	6.4	7.1	6.3	6.9	---	---	---
26	5.6	5.1	5.4	6.9	5.2	6.0	7.3	5.8	6.8	---	---	---
27	5.5	4.5	5.0	6.2	5.7	5.9	7.2	7.0	7.1	---	---	---
28	5.7	5.0	5.3	6.4	6.0	6.2	7.3	6.9	7.1	---	---	---
29	5.9	5.0	5.3	6.6	6.2	6.4	7.2	7.1	7.1	---	---	---
30	6.3	5.0	5.5	6.7	6.2	6.4	7.8	6.9	7.2	---	---	---
31	---	---	---	7.2	6.4	6.8	7.7	7.1	7.4	---	---	---
MONTH	7.7	3.9	5.7	7.6	4.8	6.1	7.9	5.8	6.9	7.9	5.2	7.2
YEAR	13.7	3.8	7.3									

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX

LOCATION.--Lat 29°13'19", long 98°21'20", Bexar County, Hydrologic Unit 12100301, at downstream side of bridge on Farm Road 1604, 2.7 mi southwest of Elmendorf, 3.3 mi downstream from Braunig Plant lake, and 203.0 mi upstream from mouth.

DRAINAGE AREA.--1,743 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 380.00 ft above sea level. Sept. 12, 1962, to Dec. 19, 1980, at site 2.5 mi upstream at different datum. Dec. 19, 1980, to Dec. 23, 1986, at same site and datum. Dec. 24, 1986, to June 15, 1993, at site 2.8 mi upstream at different datum.

REMARKS.--Records good. Flow regulated by Medina Lake (station 08179500) and by Olmos flood-control reservoir (combined capacity, 269,500 acre-ft). Storage began in Medina Lake in 1913, and Olmos Dam was completed in 1926. Water is diverted above station from Medina River for irrigation in the vicinity of Devine and Lytle, with some water diverted for irrigation near San Antonio. During the current year, the city of San Antonio discharged 128,900 acre-ft of wastewater effluent into the San Antonio River from their Leon Creek, Salado Creek, and Dos Rios plants, but no wastewater effluent was discharged from their Mitchell Lake plant upstream from this station. There was, however, 2,500 acre-ft (not wastewater effluent) released from Mitchell Lake during the year. The San Antonio City Public Service Board pumped 6,810 acre-ft into Braunig Lake and 23,600 acre-ft into Calaveras Lake upstream from this station and released 139 acre-ft from Braunig Lake but did not release from Calaveras Lake upstream from this station. For additional information relating to wastewater effluent, see station 08181500. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08178700. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 61 ft in 1946. Second highest stage was 53 ft in 1913, from information by local residents. At site and datum in use prior to Dec. 19, 1980.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	275	219	194	262	184	531	200	177	109	125	101	1280
2	322	218	198	260	187	245	193	167	127	110	100	385
3	375	211	210	264	190	224	170	166	135	102	93	263
4	257	188	217	263	195	222	190	154	107	104	92	296
5	220	181	211	264	206	212	201	145	89	107	95	257
6	215	195	205	256	206	213	244	149	100	108	89	232
7	202	197	199	265	235	233	262	145	146	106	85	210
8	186	188	236	277	259	193	211	145	210	114	83	474
9	189	189	272	274	262	193	193	149	169	106	80	731
10	195	190	269	272	249	195	179	149	146	94	76	867
11	186	189	272	271	247	201	175	177	111	111	89	363
12	185	179	263	267	250	196	168	184	113	153	99	259
13	205	198	266	254	265	190	163	161	114	161	102	234
14	230	188	264	252	254	181	160	180	98	165	107	224
15	223	183	265	252	215	189	164	175	69	158	94	1120
16	212	187	255	268	177	190	160	134	73	164	83	875
17	189	371	275	258	176	187	150	125	86	134	97	319
18	188	456	332	264	185	199	149	117	72	139	162	209
19	189	267	309	225	189	235	151	113	74	129	124	228
20	188	231	271	193	199	230	146	134	80	105	88	219
21	175	237	265	194	190	231	144	153	79	100	101	e215
22	176	207	300	200	194	220	160	123	73	101	96	e203
23	193	197	275	196	193	175	180	115	108	103	172	e212
24	187	218	263	200	178	174	153	118	102	96	224	202
25	181	240	252	192	185	182	152	122	190	92	239	1110
26	185	241	251	192	196	189	150	118	481	703	269	467
27	190	255	264	181	194	225	142	403	293	239	305	249
28	178	252	265	183	191	211	138	406	211	200	348	209
29	173	248	266	198	274	198	440	132	163	192	356	198
30	184	219	261	204	---	188	247	94	147	136	476	200
31	196	---	269	185	---	185	---	87	---	104	660	---
TOTAL	6449	6739	7914	7286	6125	6637	5535	4917	4075	4561	5185	12310
MEAN	208	225	255	235	211	214	184	159	136	147	167	410
MAX	375	456	332	277	274	531	440	406	481	703	660	1280
MIN	173	179	194	181	176	174	138	87	69	92	76	198
AC-FT	12790	13370	15700	14450	12150	13160	10980	9750	8080	9050	10280	24420

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1996, BY WATER YEAR (WY)

MEAN	496	441	458	503	576	496	522	778	972	507	401	485
MAX	2424	1255	2176	2191	3803	3031	1997	3293	8527	3764	1760	2761
(WY)	1974	1977	1992	1968	1992	1992	1992	1992	1987	1973	1978	1973
MIN	144	153	160	168	146	143	150	130	88.6	81.9	52.8	120
(WY)	1963	1967	1971	1967	1967	1971	1967	1967	1967	1964	1963	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1962 - 1996	
ANNUAL TOTAL	124320		77733			
ANNUAL MEAN	341		212		552	
HIGHEST ANNUAL MEAN					1784	1992
LOWEST ANNUAL MEAN					166	1963
HIGHEST DAILY MEAN	5020	Jun 29	1280	Sep 1	27600	Sep 27 1973
LOWEST DAILY MEAN	123	May 21	69	Jun 15	25	Aug 26 1963
ANNUAL SEVEN-DAY MINIMUM	136	May 16	76	Jun 15	42	Aug 21 1963
INSTANTANEOUS PEAK FLOW			2300	Sep 15	40000	Sep 27 1973
INSTANTANEOUS PEAK STAGE			23.51	Sep 15	53.06	Jun 5 1986
ANNUAL RUNOFF (AC-FT)	246600		154200		400100	
10 PERCENT EXCEEDS	404		274		994	
50 PERCENT EXCEEDS	279		193		317	
90 PERCENT EXCEEDS	165		102		146	

e Estimated

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1964 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: January 1968 to September 1981; December 1992 to September 1994.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
pH: June 1984 to current year.
WATER TEMPERATURE: October 1966 to current year.
DISSOLVED OXYGEN: June 1984 to current year.

INSTRUMENTATION.--Beginning June 1984, a four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instruments. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,240 microsiemens Jan. 29, 1973, Aug. 8, 1975; minimum, 110 microsiemens July 16, 1990.
pH: Maximum, 9.0 units June 16, 17, 1993; minimum, 7.0 units Oct. 25 and 28, 1988, Jan. 11, 1989.
WATER TEMPERATURE: Maximum, 33.5°C June 19, 20, Sept. 2, 1996; minimum, 5.5°C Jan. 10, 1973.
DISSOLVED OXYGEN: Maximum, 13.2 mg/L Feb. 4, 1996; minimum, 0.0 mg/L Mar. 2, Apr. 14, 15, 1985.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,210 microsiemens Dec. 1; minimum, 218 microsiemens Sept. 15.
pH: Maximum, 8.3 units on Nov. 27, June 19-22; minimum, 7.2 units Sept. 25.
WATER TEMPERATURE: Maximum, 33.5°C June 19, 20, Sept. 2; minimum, 12.5°C Feb. 3, 4.
DISSOLVED OXYGEN: Maximum, 13.2 mg/L Feb. 4; minimum, 2.4 mg/L May 27.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
SEP 15-15	1155	1960	403	7.5	4.8	130	27	41	7.0	28	1

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
SEP 15-15	4.9	100	32	34	240	230	434	3.20	3.20	3.20

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)
SEP 15-15	0.020	4.5	1.3	0.32	0.34	1.3	1.00	0.510	17	<0.010

DATE	PHENOLS TOTAL (UG/L)	ARSENIC TOTAL (UG/L AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)
SEP 15-15	<1	5	<10	<1	7	10	23	<0.10	8	<1

DATE	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)
SEP 15-15	<1	50	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

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.	1995	6449	974	542	9440	100	1780	79	1370	300
NOV.	1995	6739	996	554	10100	110	1930	80	1450	300
DEC.	1995	7914	1020	568	12100	110	2370	82	1750	310
JAN.	1996	7286	1030	573	11300	110	2210	82	1620	310
FEB.	1996	6125	958	535	8840	99	1640	78	1280	300
MAR.	1996	6637	939	525	9400	96	1720	76	1370	290
APR.	1996	5535	977	544	8130	100	1540	79	1180	300
MAY	1996	4917	972	542	7190	100	1360	78	1040	300
JUNE	1996	4075	920	514	5660	94	1030	75	824	290
JULY	1996	4561	924	517	6360	94	1160	75	927	290
AUG.	1996	5185	892	500	7000	89	1250	73	1020	280
SEPT	1996	12310	624	357	11900	51	1700	54	1800	220
TOTAL		77733	**	**	107000	**	19700	**	15600	**
WTD.AVG.		212	916	512	**	94	**	74	**	290

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	951	917	935	1020	993	1010	1210	1090	1110	1010	977	991
2	935	748	900	1010	972	1000	1120	1090	1110	988	966	978
3	897	446	705	1010	986	997	1100	1070	1090	996	966	986
4	982	897	946	1030	1010	1020	1080	1020	1060	1020	996	1010
5	---	---	955	1050	1010	1030	1050	1020	1040	1030	1010	1020
6	1010	926	974	1020	958	996	1080	1040	1070	1040	1020	1030
7	1020	988	1000	977	968	1000	1080	1060	1070	1050	1020	1040
8	1010	969	996	---	---	1020	1080	1060	1070	1030	984	1010
9	982	940	966	---	---	1040	1080	1050	1060	1000	978	986
10	966	944	949	1050	1030	1050	1060	1020	1040	1040	1000	1020
11	---	---	960	1070	1040	1060	1030	989	1010	1050	1040	1040
12	---	---	980	1060	1020	1050	1010	989	1000	1070	1050	1050
13	---	---	1000	1030	1000	1020	1040	1000	1030	1080	1050	1060
14	1020	1000	1010	1020	998	1010	1060	1040	1050	1070	1040	1050
15	1020	993	1010	1040	1020	1040	1070	1040	1060	1040	1040	1030
16	993	955	980	1050	1030	1040	1060	1030	1040	1030	996	1010
17	970	950	960	1070	747	987	1030	1010	1020	1060	1030	1050
18	1020	970	1000	864	706	802	1040	954	989	1060	1040	1050
19	1040	1020	1030	902	779	836	1000	948	965	1080	1050	1070
20	1050	1040	1050	922	874	898	1020	985	1010	1080	1070	1080
21	1050	1030	1040	982	922	941	1030	1010	1020	1070	1050	1060
22	1040	1010	1030	1010	981	994	1030	1010	1020	1050	1020	1040
23	1020	981	1010	1040	1010	1020	1010	964	983	1030	1010	1020
24	1000	966	984	1050	1010	1040	994	978	984	1080	1030	1070
25	1040	1000	1030	1020	1010	1010	1000	968	984	1080	1060	1070
26	1050	1030	1040	1060	1010	1040	975	944	961	1070	1060	1060
27	1050	1040	1040	1040	1010	1030	981	939	958	1060	1050	1060
28	1060	1030	1040	1050	1010	1030	1000	981	994	1080	1060	1070
29	1040	1010	1030	1090	1040	1070	1020	1000	1010	1060	1020	1040
30	1010	979	1000	1150	1070	1090	1030	1010	1020	1030	1000	1010
31	993	975	985	---	---	---	1020	1000	1010	1050	1010	1030
MONTH	1060	446	985	1150	706	1010	1210	939	1030	1080	966	1040

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1080	1050	1070	895	623	731	997	944	980	993	960	973
2	1080	1070	1070	913	863	886	975	925	941	1040	993	1020
3	1070	1040	1050	967	913	937	1010	896	985	1040	1020	1030
4	1050	1010	1030	969	906	938	1030	994	1010	1050	1020	1040
5	1020	971	999	973	931	955	1010	975	993	1030	985	1010
6	996	930	955	995	964	981	976	839	896	1010	986	1000
7	979	937	963	981	864	945	924	839	891	1000	965	985
8	989	873	970	984	944	968	898	876	889	1040	988	1020
9	981	867	918	977	930	955	944	888	915	1050	1020	1040
10	992	886	930	942	921	933	1020	944	998	1050	1020	1040
11	932	893	910	949	901	931	1050	1010	1030	1050	988	1020
12	897	867	881	931	901	918	1060	1030	1040	1050	882	930
13	904	870	884	971	931	958	1070	1030	1050	978	932	952
14	915	864	887	978	950	964	1070	1040	1050	979	942	962
15	949	915	929	997	962	982	1040	990	1020	1030	979	1010
16	945	920	932	1000	960	984	1010	978	999	1050	1020	1030
17	965	921	945	980	945	960	1050	1000	1030	1050	1030	1040
18	955	927	943	988	918	947	1080	1040	1060	1050	1020	1040
19	938	909	926	960	894	929	1090	1060	1070	1050	1030	1040
20	920	898	912	1010	919	959	1080	1060	1070	1030	981	1010
21	984	916	951	1020	956	971	1070	986	1050	994	965	984
22	985	947	964	1010	943	969	1070	1010	1030	1030	987	1020
23	1000	925	983	984	945	967	1020	984	1000	1070	1030	1050
24	999	958	988	1000	957	975	1040	987	1010	1070	1050	1060
25	1020	941	992	962	931	947	1100	1040	1070	1070	1030	1050
26	977	827	929	956	926	941	1080	1060	1070	1060	1030	1040
27	953	923	945	1020	930	962	1070	1010	1040	1040	490	894
28	1020	948	977	1000	964	989	1050	991	1040	883	574	704
29	1050	1010	1040	996	963	977	993	605	800	938	852	891
30	---	---	---	1020	996	1010	961	724	833	998	931	962
31	---	---	---	1020	995	1010	---	---	---	1030	989	1000
MONTH	1080	827	961	1020	623	951	1100	605	995	1070	490	995

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1030	1000	1020	994	954	968	1010	994	1000	595	456	516
2	1030	898	938	977	942	957	1030	992	1010	746	589	641
3	953	886	934	1020	977	1010	1050	1010	1020	866	512	684
4	926	824	869	1050	1020	1040	1050	1010	1020	902	866	887
5	1020	900	961	1040	1020	1030	1020	969	988	902	839	859
6	1030	1010	1020	1040	1000	1010	1000	941	970	909	846	882
7	1050	1010	1030	1020	996	1010	1020	974	991	944	909	931
8	1070	899	957	1020	990	999	1060	999	1020	964	313	799
9	990	972	982	1010	972	989	1050	1020	1040	563	262	438
10	979	962	974	1030	1010	1020	1050	1030	1040	525	389	449
11	979	940	961	1060	1000	1020	1050	1010	1020	552	428	480
12	1030	974	1010	1060	974	1030	1020	989	1000	626	552	578
13	1060	1010	1040	983	949	972	1000	957	977	693	625	655
14	1060	1040	1050	978	948	965	1010	977	995	736	693	718
15	1060	1010	1040	968	945	959	1020	977	993	750	218	544
16	1060	1030	1040	979	930	958	1030	1010	1020	526	389	448
17	1030	989	1010	1030	967	999	1030	1010	1020	658	507	583
18	989	956	975	1030	992	1010	1020	1000	1010	694	645	667
19	1040	986	1010	1030	986	1000	1010	979	996	740	632	692
20	1070	1040	1060	1030	999	1020	1000	960	976	863	607	724
21	1090	1050	1070	1020	992	1000	1040	983	1010	939	789	906
22	1090	1060	1070	1010	972	991	1020	982	1000	893	859	875
23	1080	1020	1060	994	947	969	1020	939	997	889	789	844
24	1020	957	977	1030	979	1000	1010	831	947	969	859	907
25	1020	527	958	1050	1020	1040	1010	901	955	986	373	547
26	766	430	609	1100	469	677	961	884	920	696	415	578
27	805	685	748	816	691	750	935	857	880	840	686	758
28	908	802	856	915	816	902	975	836	904	884	825	852
29	959	908	927	940	892	921	846	459	760	916	865	891
30	987	943	974	952	910	923	829	495	686	932	895	908
31	---	---	---	1010	952	988	793	446	669	---	---	---
MONTH	1090	430	971	1100	469	972	1060	446	962	986	218	708
YEAR	1210	218	965									

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.0	7.9	7.9	8.0	7.9	7.9	8.2	8.0	8.1	8.1	7.9	8.0
2	8.0	7.9	7.9	8.0	7.9	7.9	8.2	8.0	8.1	8.1	8.0	8.0
3	7.9	7.8	7.8	8.0	7.9	8.0	8.1	8.0	8.1	8.1	8.0	8.0
4	---	---	---	8.0	8.0	8.0	8.1	8.0	8.0	8.0	7.9	8.0
5	---	---	---	8.0	7.9	8.0	8.1	8.0	8.0	8.0	7.9	7.9
6	---	---	---	7.9	7.8	7.9	8.2	8.0	8.1	8.0	7.9	7.9
7	---	---	---	---	---	---	8.1	7.9	8.0	8.1	7.9	8.0
8	---	---	---	---	---	---	8.0	7.9	7.9	8.1	7.9	8.0
9	---	---	---	---	---	---	8.1	7.9	8.0	8.0	7.9	7.9
10	---	---	---	8.0	7.8	7.9	8.1	7.9	8.0	8.1	7.9	8.0
11	---	---	---	8.1	7.9	8.0	8.1	7.9	8.0	8.0	7.8	7.9
12	---	---	---	8.1	8.0	8.0	8.0	7.9	7.9	7.9	7.8	7.8
13	---	---	---	8.1	8.0	8.0	8.0	7.9	7.9	8.0	7.8	7.9
14	---	---	---	8.1	7.9	8.0	8.0	7.9	7.9	8.0	7.8	7.9
15	---	---	---	8.1	8.0	8.0	7.9	7.8	7.9	8.0	7.8	7.9
16	---	---	---	8.1	8.0	8.0	8.0	7.9	7.9	8.0	7.8	7.9
17	---	---	---	8.0	7.9	8.0	8.0	7.9	7.9	8.0	7.9	7.9
18	---	---	---	8.0	7.9	8.0	8.0	7.9	7.9	8.0	7.8	7.9
19	---	---	---	8.1	7.9	8.0	8.0	7.9	8.0	8.0	7.8	7.9
20	---	---	---	8.1	8.0	8.0	8.0	7.9	7.9	8.0	7.9	7.9
21	---	---	---	8.2	8.0	8.1	8.0	7.9	8.0	8.1	7.8	7.9
22	---	---	---	8.2	8.0	8.1	7.9	7.8	7.9	8.0	7.8	7.9
23	7.9	7.8	7.9	8.1	8.0	8.0	8.0	7.9	7.9	8.0	7.8	7.9
24	8.0	7.9	7.9	8.2	8.0	8.1	8.0	7.9	7.9	8.0	7.8	7.9
25	8.0	7.9	7.9	8.2	8.0	8.1	8.0	7.9	7.9	8.1	7.8	7.9
26	8.0	7.9	7.9	8.2	8.0	8.1	8.0	7.9	7.9	8.1	7.9	8.0
27	8.0	7.9	7.9	8.3	8.0	8.1	8.0	7.9	7.9	8.1	7.9	8.0
28	8.0	7.9	7.9	8.2	8.0	8.1	8.0	7.9	7.9	8.1	7.9	8.0
29	8.0	7.9	7.9	8.2	8.1	8.1	8.0	7.9	7.9	8.1	7.9	8.0
30	8.0	7.9	7.9	8.2	8.0	8.1	8.0	7.9	7.9	8.0	7.9	7.9
31	8.0	7.9	7.9	---	---	---	8.0	7.9	8.0	8.0	7.8	7.9
MONTH	8.0	7.8	7.9	8.3	7.8	8.0	8.2	7.8	8.0	8.1	7.8	7.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.9	7.8	7.9	7.9	7.8	7.8	8.0	7.8	7.9	7.9	7.8	7.8
2	7.9	7.9	7.9	7.9	7.8	7.9	8.0	7.8	7.9	7.8	7.8	7.8
3	8.0	7.9	7.9	7.9	7.8	7.9	7.9	7.8	7.9	7.9	7.8	7.8
4	8.0	7.9	8.0	7.9	7.8	7.9	8.0	7.8	7.9	7.9	7.8	7.8
5	8.0	7.9	7.9	7.9	7.8	7.8	7.9	7.8	7.9	7.9	7.8	7.9
6	8.0	7.8	7.9	7.9	7.8	7.8	8.0	7.8	7.9	7.9	7.8	7.9
7	8.0	7.8	7.9	7.9	7.8	7.9	8.0	7.9	7.9	7.9	7.8	7.8
8	8.0	7.9	7.9	7.9	7.8	7.9	8.0	7.8	7.9	7.9	7.8	7.8
9	8.0	7.9	7.9	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.9	7.9
10	8.0	7.9	7.9	8.0	7.8	7.9	7.9	7.7	7.8	8.0	7.9	7.9
11	8.1	7.9	7.9	8.0	7.8	7.9	7.9	7.7	7.8	8.0	7.9	8.0
12	8.1	7.9	8.0	8.0	7.8	7.9	7.8	7.7	7.8	8.0	7.9	8.0
13	8.1	7.9	7.9	7.9	7.8	7.9	7.9	7.7	7.8	8.0	7.8	7.9
14	8.1	7.9	8.0	7.9	7.7	7.8	7.9	7.7	7.8	7.9	7.8	7.8
15	8.1	7.9	8.0	7.8	7.7	7.7	7.9	7.7	7.8	7.9	7.8	7.8
16	8.1	7.9	8.0	7.9	7.7	7.8	7.8	7.6	7.7	8.0	7.8	7.9
17	8.1	7.9	8.0	7.9	7.7	7.8	7.8	7.6	7.7	8.0	7.9	7.9
18	8.1	7.9	8.0	8.0	7.7	7.8	7.8	7.6	7.7	8.1	7.9	8.0
19	8.1	7.9	8.0	7.9	7.7	7.8	7.8	7.6	7.7	8.1	7.9	8.0
20	8.1	7.9	7.9	7.9	7.6	7.7	7.8	7.7	7.7	8.1	7.9	8.0
21	7.9	7.8	7.9	7.9	7.6	7.8	7.8	7.7	7.7	8.1	7.9	8.0
22	8.0	7.8	7.9	7.9	7.7	7.8	7.8	7.7	7.7	8.1	7.9	8.0
23	7.9	7.8	7.9	7.9	7.7	7.7	7.8	7.6	7.7	8.1	7.8	7.9
24	8.0	7.8	7.9	7.8	7.7	7.7	7.8	7.7	7.7	8.1	7.9	8.0
25	8.0	7.8	7.9	7.9	7.7	7.8	7.9	7.7	7.8	8.1	7.9	8.0
26	8.0	7.8	7.9	7.8	7.6	7.6	7.9	7.7	7.8	8.1	7.9	8.0
27	7.9	7.8	7.9	7.7	7.6	7.6	7.9	7.8	7.8	8.1	7.4	7.8
28	7.9	7.8	7.9	7.7	7.6	7.6	7.9	7.8	7.8	---	---	---
29	7.9	7.9	7.9	7.7	7.6	7.6	7.9	7.4	7.6	7.8	7.7	7.8
30	---	---	---	7.7	7.6	7.6	7.8	7.6	7.7	7.9	7.8	7.8
31	---	---	---	7.8	7.6	7.7	---	---	---	7.9	7.8	7.8
MONTH	8.1	7.8	7.9	8.0	7.6	7.8	8.0	7.4	7.8	8.1	7.4	7.9

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.9	7.8	7.8	8.0	7.9	7.9	7.9	7.8	7.8	---	---	---
2	7.9	7.8	7.8	8.0	7.9	7.9	7.9	7.8	7.8	---	---	---
3	7.9	7.9	7.9	8.0	7.9	7.9	8.0	7.9	7.9	7.8	7.7	7.8
4	7.9	7.8	7.9	8.1	7.9	8.0	8.0	7.8	7.9	7.8	7.7	7.8
5	7.9	7.8	7.9	8.1	8.0	8.0	7.9	7.8	7.9	7.8	7.7	7.7
6	7.9	7.8	7.9	8.1	8.0	8.0	7.9	7.8	7.9	7.8	7.8	7.8
7	7.9	7.8	7.8	8.0	7.9	8.0	7.9	7.8	7.9	7.9	7.8	7.8
8	7.9	7.7	7.8	8.0	7.9	8.0	7.9	7.8	7.8	7.9	7.5	7.8
9	7.9	7.7	7.8	8.0	7.9	8.0	7.9	7.7	7.8	7.8	7.5	7.7
10	8.0	7.8	7.9	8.0	7.9	8.0	7.9	7.7	7.8	7.8	7.6	7.7
11	8.0	7.8	7.9	8.0	7.9	8.0	7.9	7.7	7.8	7.7	7.6	7.7
12	8.0	7.8	7.9	8.0	7.6	7.9	7.9	7.8	7.9	7.7	7.7	7.7
13	8.0	7.8	7.9	8.0	7.8	7.9	7.9	7.8	7.8	7.8	7.7	7.7
14	8.0	7.8	7.9	8.0	7.8	7.9	8.0	7.8	7.9	7.8	7.8	7.8
15	8.0	7.8	7.9	8.0	7.8	7.9	8.0	7.8	7.9	7.8	7.4	7.7
16	8.2	7.8	8.0	7.9	7.8	7.9	8.1	7.8	7.9	7.7	7.6	7.6
17	8.2	7.8	8.0	8.0	7.8	7.9	8.1	7.8	7.9	7.8	7.7	7.7
18	8.2	7.7	7.9	8.0	7.8	7.9	8.1	7.8	7.9	7.8	7.7	7.7
19	8.3	7.7	8.0	8.0	7.9	7.9	8.1	7.8	7.9	7.8	7.7	7.8
20	8.3	7.9	8.1	8.0	7.8	7.9	8.1	7.8	7.9	7.8	7.8	7.8
21	8.3	7.9	8.1	8.0	7.8	7.9	8.0	7.8	7.9	7.9	7.8	7.8
22	8.3	7.9	8.1	8.0	7.8	7.9	8.0	7.9	7.9	7.9	7.8	7.8
23	8.2	7.9	8.1	8.0	7.8	7.9	7.9	7.8	7.8	7.9	7.8	7.8
24	8.2	7.9	8.1	8.0	7.8	7.9	7.9	7.8	7.8	7.8	7.8	7.8
25	8.1	7.5	7.9	8.0	7.9	7.9	7.9	7.8	7.8	7.8	7.2	7.5
26	7.7	7.4	7.6	8.0	7.4	7.5	7.8	7.7	7.8	7.7	7.6	7.6
27	7.8	7.7	7.7	7.6	7.5	7.6	7.8	7.7	7.7	7.8	7.7	7.7
28	7.8	7.7	7.8	7.7	7.6	7.7	7.8	7.7	7.8	7.8	7.8	7.8
29	7.9	7.8	7.8	7.8	7.7	7.7	7.9	7.7	7.7	7.9	7.8	7.8
30	8.0	7.8	7.9	7.8	7.7	7.7	7.7	7.6	7.7	7.9	7.8	7.8
31	---	---	---	7.8	7.7	7.7	7.7	7.4	7.6	---	---	---
MONTH	8.3	7.4	7.9	8.1	7.4	7.9	8.1	7.4	7.8	7.9	7.2	7.7
YEAR	8.3	7.2	7.9									

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	29.0	28.0	28.5	25.0	23.5	24.0	20.0	18.5	19.0	19.5	18.0	19.0
2	29.0	27.5	28.5	25.5	24.5	24.5	21.0	20.0	20.5	18.0	15.5	16.5
3	27.5	25.0	26.5	24.5	20.5	22.0	22.5	21.0	22.0	16.5	15.0	15.5
4	27.0	25.5	26.0	21.0	18.5	20.0	22.5	21.5	21.5	17.0	15.5	16.0
5	28.5	24.5	26.0	19.5	18.0	19.0	22.5	21.5	22.0	17.0	16.5	16.5
6	26.0	24.0	25.0	20.0	18.5	19.5	22.5	21.0	21.5	17.5	14.5	16.0
7	25.5	24.0	24.5	---	---	---	22.0	20.0	21.0	15.0	13.5	14.0
8	25.5	23.5	24.5	---	---	---	20.5	19.5	20.0	15.0	13.5	14.0
9	25.5	24.0	25.0	---	---	---	20.5	17.5	18.5	16.0	14.0	14.5
10	25.5	24.0	25.0	23.5	22.0	23.0	17.5	15.5	16.5	17.0	15.0	15.5
11	---	---	---	24.0	20.0	22.0	19.0	17.0	17.5	17.5	16.5	17.0
12	---	---	---	20.0	19.0	19.5	20.5	19.0	19.5	17.5	16.0	16.5
13	---	---	---	20.5	19.0	20.0	21.5	20.5	21.0	17.5	16.0	16.5
14	26.5	24.5	25.5	21.5	20.0	20.5	22.5	21.5	22.0	18.0	16.5	17.0
15	24.5	23.0	23.5	21.0	19.5	20.5	23.0	22.5	22.5	18.5	17.5	18.0
16	24.0	22.5	23.0	21.5	20.5	21.0	23.0	22.0	22.0	20.0	18.5	19.0
17	24.0	22.5	23.5	22.0	19.5	21.0	23.0	22.0	22.5	20.5	19.5	20.0
18	25.0	23.5	24.5	20.5	19.5	20.0	23.0	20.5	22.0	20.5	17.0	19.0
19	26.5	24.5	25.5	21.5	20.0	20.5	20.5	18.5	19.0	17.0	15.5	16.0
20	26.0	23.5	24.5	22.0	20.5	21.0	19.0	17.0	18.0	16.5	15.0	16.0
21	23.5	22.0	23.0	22.5	21.0	21.5	18.0	16.0	17.0	17.0	16.0	16.5
22	24.0	22.5	23.5	22.5	21.5	22.0	17.5	16.5	16.5	19.5	17.0	18.5
23	25.0	23.5	24.5	22.5	21.5	22.0	17.5	15.5	16.0	21.0	19.5	20.5
24	24.5	22.5	23.5	22.0	20.0	21.0	16.5	15.5	16.0	20.5	18.5	19.0
25	24.0	22.5	23.5	20.5	19.5	20.0	17.0	16.5	16.5	18.5	17.0	18.0
26	25.5	24.0	24.5	20.5	19.5	20.0	17.5	16.0	16.5	20.5	18.5	19.5
27	26.5	25.0	26.0	21.5	20.0	21.0	17.0	16.0	16.5	19.0	16.5	17.5
28	26.0	24.0	25.0	21.5	18.5	19.5	17.5	16.5	17.0	17.0	16.5	16.5
29	24.5	22.5	23.5	19.0	17.5	18.0	17.5	16.0	16.5	20.0	17.0	19.0
30	23.5	22.5	23.0	19.0	17.5	18.0	18.0	17.0	17.5	21.0	20.0	20.5
31	23.5	23.0	23.5	---	---	---	19.0	18.0	18.5	20.5	15.5	17.5
MONTH	29.0	22.0	24.5	25.5	17.5	21.0	23.0	15.5	19.0	21.0	13.5	17.5

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16.0	14.5	15.0	15.5	13.5	14.0	22.5	20.5	22.0	25.0	22.5	24.0
2	14.0	13.5	13.5	17.5	14.5	16.0	22.0	20.0	21.0	25.0	24.0	24.5
3	13.5	12.5	13.0	19.0	17.0	18.0	22.5	20.5	21.5	27.0	24.5	25.5
4	13.5	12.5	13.0	20.5	19.0	19.5	23.5	22.0	23.0	27.5	25.5	26.5
5	15.5	13.5	14.0	22.0	20.5	21.0	23.5	19.0	21.0	27.5	25.5	26.5
6	18.0	15.5	16.5	23.0	21.5	22.5	20.5	18.5	19.5	27.0	26.0	26.5
7	19.5	17.5	18.0	21.5	18.5	19.0	20.5	18.5	19.5	27.0	26.0	26.5
8	20.0	18.5	19.0	18.5	16.5	17.0	22.0	19.0	20.5	27.0	25.5	26.5
9	20.5	19.0	19.5	17.5	16.0	16.5	23.5	20.5	22.0	28.0	26.0	27.0
10	21.5	20.0	21.0	18.0	16.0	17.0	24.0	22.0	23.0	28.5	26.5	27.0
11	21.5	19.0	20.5	19.0	17.0	18.0	24.5	23.0	23.5	28.0	26.0	27.0
12	19.0	17.5	18.0	20.0	18.0	19.0	25.5	23.5	24.0	28.0	26.0	27.0
13	19.0	17.5	18.0	22.0	19.5	20.5	26.5	23.5	25.0	29.0	26.5	28.0
14	20.0	17.5	18.5	23.5	21.0	22.0	27.0	24.5	25.5	29.0	26.5	28.0
15	20.0	19.0	19.5	24.0	22.5	23.5	25.5	23.0	24.0	29.5	27.0	28.0
16	19.5	17.5	18.5	25.0	23.0	24.0	24.0	21.5	23.0	30.0	27.0	28.5
17	19.0	16.5	18.0	25.0	23.0	24.0	25.0	22.0	23.5	30.0	27.0	28.5
18	20.0	18.5	19.5	23.5	21.5	22.5	27.0	23.5	25.5	30.0	27.0	28.5
19	21.0	19.5	20.5	21.5	19.5	21.0	28.5	25.0	26.5	30.0	27.0	28.5
20	21.5	19.5	20.5	21.0	19.0	20.0	27.5	26.0	26.5	30.5	27.0	29.0
21	22.0	20.0	21.0	21.0	19.0	20.0	28.0	25.5	26.5	31.0	27.5	29.0
22	23.0	21.0	22.0	22.0	20.0	21.0	27.0	25.0	26.0	31.0	27.5	29.5
23	24.0	22.5	23.0	22.0	20.5	21.5	26.0	23.5	24.5	30.5	27.5	29.0
24	23.0	21.0	22.0	23.0	21.0	22.0	26.0	23.0	24.5	29.5	27.5	28.5
25	23.5	22.0	22.5	23.0	20.0	21.5	27.0	23.5	25.5	30.0	27.5	28.5
26	23.0	22.5	23.0	20.0	17.0	18.0	26.5	25.0	25.5	29.0	27.5	28.5
27	24.0	23.0	23.5	18.0	17.0	17.5	26.5	25.0	26.0	29.0	26.0	27.5
28	23.5	18.5	21.0	20.5	17.5	19.0	27.5	25.5	26.5	28.5	26.5	27.5
29	18.5	16.0	17.0	20.5	19.0	19.5	26.0	23.5	24.5	31.0	28.0	29.0
30	---	---	---	23.0	20.5	21.5	24.0	21.5	23.0	31.5	28.5	30.0
31	---	---	---	22.5	21.0	22.0	---	---	---	30.0	28.5	29.0
MONTH	24.0	12.5	19.0	25.0	13.5	20.0	28.5	18.5	23.5	31.5	22.5	27.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.5	27.5	29.0	32.5	29.0	30.5	33.0	29.5	31.0	27.5	27.0	27.5
2	31.5	28.5	29.5	33.0	29.0	31.0	33.0	30.0	31.5	33.5	27.5	29.0
3	30.5	28.5	29.5	32.5	29.0	30.5	33.0	30.0	31.5	30.0	26.0	28.5
4	31.0	28.0	29.5	32.5	29.0	31.0	33.0	29.5	31.0	30.0	29.0	29.5
5	31.5	28.5	30.0	33.0	29.0	30.5	32.5	29.5	31.0	30.0	28.5	29.0
6	31.5	28.0	30.0	33.0	29.0	31.0	32.5	29.5	31.0	30.0	28.5	29.5
7	30.5	28.0	29.0	33.0	29.0	31.0	32.5	29.5	31.0	30.0	28.5	29.0
8	29.5	27.0	28.5	33.0	29.5	31.0	31.5	29.5	30.5	29.5	27.5	28.5
9	29.5	27.0	28.5	32.5	29.5	31.0	32.5	29.0	30.5	29.0	27.5	28.0
10	30.5	27.5	29.0	31.0	29.5	30.0	32.5	29.5	31.0	28.5	27.0	27.5
11	30.5	27.5	29.0	32.5	29.0	30.5	33.0	29.5	31.0	29.0	27.0	28.0
12	31.5	28.0	29.5	32.5	29.5	31.0	33.0	30.0	31.0	29.0	27.0	28.0
13	31.5	28.5	30.0	32.5	29.5	31.0	33.0	30.0	31.5	28.5	27.5	28.0
14	32.5	29.0	30.5	32.0	30.0	31.0	33.0	30.0	31.0	28.5	27.5	28.0
15	32.0	29.0	30.5	32.0	30.0	31.0	32.0	29.0	30.5	28.5	25.0	27.0
16	32.0	28.5	30.5	32.0	29.5	30.5	32.5	29.0	30.5	28.0	26.0	27.0
17	33.0	29.0	31.0	32.5	29.5	31.0	32.5	29.0	30.5	29.5	27.0	28.0
18	33.0	29.0	31.0	32.0	29.5	31.0	31.5	29.0	30.5	29.5	28.5	29.0
19	33.5	29.5	31.0	32.5	29.5	31.0	31.0	29.5	30.0	30.0	28.5	29.5
20	33.5	29.5	31.5	33.0	29.5	31.0	31.0	28.5	29.5	30.0	28.5	29.5
21	32.5	29.5	31.0	33.0	29.5	31.0	30.5	28.5	29.5	30.0	29.0	29.5
22	31.5	29.5	30.5	33.0	29.5	31.0	29.5	28.5	29.0	30.0	29.0	29.5
23	31.5	29.0	30.0	33.0	29.5	31.0	29.0	28.5	28.5	30.0	28.5	29.5
24	31.5	29.0	30.5	32.5	30.0	31.0	29.5	28.0	29.0	30.5	29.0	29.5
25	31.5	29.5	30.5	32.5	29.5	31.0	29.0	28.0	28.5	29.5	26.0	27.0
26	29.5	28.5	29.0	31.0	27.5	29.0	29.0	28.0	28.5	28.5	26.0	27.0
27	30.5	28.5	29.5	30.5	28.5	29.5	29.5	28.0	28.5	28.0	26.0	27.5
28	30.5	29.0	30.0	31.5	29.0	30.5	30.0	28.0	29.0	26.0	24.5	25.0
29	31.5	29.0	30.0	32.0	29.5	30.5	29.5	26.5	29.0	25.5	24.0	24.5
30	32.0	28.5	30.5	32.5	29.5	30.5	28.5	27.0	28.0	25.0	24.0	24.5
31	---	---	---	32.5	29.5	31.0	28.5	27.5	28.0	---	---	---
MONTH	33.5	27.0	30.0	33.0	27.5	30.5	33.0	26.5	30.0	33.5	24.0	28.0
YEAR	33.5	12.5	24.5									

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.6	6.0	6.3	8.4	7.7	8.0	9.9	8.5	9.0	10.1	9.1	9.6
2	6.3	5.5	6.0	8.3	7.7	7.9	10.1	8.1	8.8	10.9	9.5	10.2
3	6.3	5.6	5.8	9.1	7.8	8.4	9.3	7.6	8.3	11.2	10.2	10.7
4	---	---	---	9.4	8.4	8.9	9.4	7.7	8.4	11.2	10.3	10.7
5	---	---	---	9.3	8.7	9.0	9.2	7.8	8.3	10.9	10.1	10.5
6	---	---	---	9.4	8.6	9.0	10.1	7.9	8.7	11.4	9.9	10.6
7	---	---	---	---	---	---	9.4	8.0	8.6	12.3	10.7	11.5
8	---	---	---	---	---	---	9.4	8.3	8.7	12.4	11.0	11.6
9	---	---	---	---	---	---	9.9	8.3	9.1	11.9	10.9	11.3
10	---	---	---	9.5	8.6	9.0	10.4	9.0	9.8	11.7	10.6	11.0
11	---	---	---	9.9	8.4	9.1	10.1	8.9	9.5	10.8	10.0	10.3
12	---	---	---	10.3	9.1	9.7	9.6	8.6	9.0	11.0	9.9	10.4
13	---	---	---	10.5	9.1	9.7	9.0	8.2	8.6	11.0	9.8	10.3
14	---	---	---	10.2	8.9	9.5	8.9	8.0	8.5	10.8	9.6	10.2
15	---	---	---	10.1	9.0	9.5	8.6	7.7	8.2	10.8	9.3	10.0
16	---	---	---	9.9	8.8	9.3	9.0	7.9	8.4	10.4	9.3	9.8
17	---	---	---	9.4	8.5	8.8	8.9	8.0	8.4	9.7	8.9	9.3
18	9.6	8.6	9.6	9.4	8.6	9.0	9.3	8.2	8.8	10.6	8.8	9.6
19	9.0	8.2	8.5	9.5	8.8	9.1	9.9	8.9	9.4	11.2	10.0	10.6
20	9.3	8.0	8.6	9.8	8.6	9.1	10.2	9.4	9.8	11.5	10.2	10.8
21	9.5	8.5	9.0	10.3	8.5	9.2	10.5	9.6	10.0	11.6	9.9	10.7
22	9.0	7.7	8.3	10.6	8.4	9.2	10.7	9.8	10.2	10.7	9.5	10.1
23	8.4	7.0	7.7	9.9	8.1	8.8	11.1	10.1	10.7	10.3	9.0	9.6
24	8.7	7.8	8.2	10.1	8.2	9.0	11.2	10.1	10.7	10.5	8.9	9.7
25	8.7	8.0	8.3	10.4	8.5	9.3	11.0	10.2	10.6	11.1	9.4	10.2
26	8.4	7.8	8.0	10.0	8.4	9.1	11.0	10.0	10.5	11.0	9.3	10.1
27	8.3	7.5	7.8	10.5	8.1	9.1	11.0	10.0	10.5	11.7	9.6	10.6
28	8.6	7.5	8.0	10.6	8.4	9.3	10.8	9.8	10.3	11.0	10.0	10.5
29	8.2	7.7	8.0	10.7	8.8	9.6	10.7	9.8	10.2	11.0	9.5	10.1
30	8.4	7.8	8.1	10.1	8.0	9.2	10.2	9.7	10.0	9.8	8.9	9.3
31	8.2	7.9	8.0	---	---	---	10.1	9.3	9.7	10.7	9.1	9.9
MONTH	9.6	5.5	7.9	10.7	7.7	9.1	11.2	7.6	9.3	12.4	8.8	10.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.9	10.0	10.5	10.3	9.9	10.2	9.8	8.4	9.0	7.9	7.3	7.6
2	12.0	10.9	11.5	10.3	9.6	10.0	9.5	8.2	8.8	7.6	7.1	7.3
3	12.9	11.2	12.0	10.4	9.5	9.8	9.3	8.3	8.7	7.7	7.1	7.4
4	13.2	11.4	12.4	9.6	8.9	9.3	9.1	7.9	8.4	7.8	6.9	7.3
5	12.5	11.1	11.8	9.4	8.4	8.9	8.7	7.9	8.1	7.9	7.0	7.4
6	11.1	10.1	10.7	9.2	8.5	8.8	9.9	8.7	9.2	7.5	6.9	7.2
7	10.6	9.6	10.0	10.4	8.9	9.6	9.6	8.7	9.1	7.6	7.0	7.2
8	10.2	9.2	9.7	11.2	10.0	10.6	9.9	8.8	9.2	7.6	7.1	7.3
9	10.2	9.1	9.6	11.6	10.5	11.0	9.7	8.3	8.9	7.5	6.9	7.2
10	9.9	9.0	9.4	11.7	10.5	11.0	9.1	7.8	8.4	7.7	6.9	7.2
11	10.1	8.7	9.4	11.4	10.2	10.7	8.7	7.6	8.1	7.7	6.7	7.1
12	10.6	9.3	10.0	10.9	9.7	10.2	8.7	7.7	8.1	7.9	6.9	7.3
13	10.6	9.6	10.0	10.5	9.2	9.8	8.8	7.6	8.0	8.5	6.9	7.6
14	10.6	9.5	9.9	10.2	8.7	9.3	8.9	7.3	8.0	8.5	7.6	8.1
15	10.3	9.1	9.7	9.7	8.4	9.0	9.1	7.8	8.4	8.6	7.6	8.0
16	10.7	9.3	10.0	9.6	8.1	8.8	9.3	8.1	8.6	8.8	7.6	8.0
17	10.9	9.6	10.1	9.8	8.1	8.8	9.2	8.0	8.5	8.8	7.4	7.9
18	10.5	9.2	9.6	9.9	8.1	9.1	9.1	7.6	8.2	8.9	7.4	8.0
19	10.2	8.7	9.4	10.2	8.8	9.5	8.5	7.0	7.7	9.5	7.6	8.3
20	10.0	8.7	9.3	10.6	8.9	9.7	8.1	6.9	7.4	9.6	7.6	8.3
21	10.2	8.7	9.2	10.8	9.1	9.9	8.2	6.9	7.4	9.0	7.4	8.0
22	10.0	8.4	9.0	10.4	8.7	9.5	7.6	7.0	7.3	9.5	7.2	8.0
23	9.6	8.1	8.7	9.4	8.4	8.9	8.1	7.4	7.7	9.5	7.1	8.0
24	9.7	8.2	8.9	9.6	8.3	8.8	8.2	7.5	7.8	9.4	7.1	8.0
25	9.5	8.2	8.7	10.1	8.1	9.1	8.1	7.2	7.6	9.6	7.2	8.2
26	8.9	8.1	8.5	10.0	9.0	9.5	7.6	6.8	7.2	9.1	7.4	8.2
27	8.7	7.9	8.3	10.3	9.4	9.8	7.7	7.0	7.3	8.7	2.4	6.6
28	9.3	7.9	8.6	10.4	9.2	9.8	7.8	7.0	7.3	5.5	4.9	5.1
29	10.0	9.2	9.6	9.6	8.9	9.2	7.4	5.8	6.5	6.1	5.3	5.7
30	---	---	---	9.6	8.4	8.9	7.8	6.7	7.3	7.3	5.8	6.7
31	---	---	---	9.6	8.1	8.8	---	---	---	7.3	6.5	6.9
MONTH	13.2	7.9	9.8	11.7	8.1	9.6	9.9	5.8	8.1	9.6	2.4	7.5

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.4	6.8	7.0	6.5	5.6	6.1	7.4	6.6	7.0	---	---	---
2	7.6	6.7	7.0	7.1	5.8	6.3	7.8	6.6	7.1	---	---	---
3	7.9	6.9	7.3	7.6	6.2	6.9	8.1	6.7	7.1	7.4	7.0	7.2
4	7.9	6.7	7.2	8.0	6.6	7.1	8.1	6.7	7.2	7.3	7.1	7.2
5	8.1	6.7	7.2	8.2	6.6	7.3	8.2	6.7	7.2	7.8	7.2	7.6
6	8.2	6.8	7.2	8.3	6.7	7.3	7.9	6.7	7.2	7.6	7.2	7.4
7	7.7	6.6	7.1	8.4	6.6	7.3	7.8	6.6	7.0	7.6	7.2	7.4
8	7.8	6.8	7.2	8.2	6.6	7.2	8.0	6.6	7.1	8.0	5.8	7.2
9	8.1	6.8	7.4	7.8	6.8	7.2	8.5	7.1	7.5	7.8	5.7	7.0
10	8.3	7.0	7.6	7.7	6.5	7.0	8.4	6.9	7.5	7.7	6.5	7.1
11	8.1	6.8	7.4	8.1	6.3	7.0	8.7	6.9	7.6	7.6	7.1	7.3
12	8.5	6.7	7.4	8.6	6.7	7.4	8.6	7.0	7.6	7.6	7.2	7.4
13	8.5	6.8	7.5	7.9	6.9	7.3	8.0	6.3	7.0	7.5	7.1	7.3
14	8.4	6.7	7.4	8.1	6.9	7.3	8.9	7.0	7.6	7.5	7.2	7.3
15	8.3	6.6	7.4	7.9	6.9	7.3	9.3	7.1	7.8	8.0	3.7	6.7
16	8.8	6.8	7.6	8.0	7.0	7.3	9.2	6.9	7.6	7.4	6.9	7.2
17	9.0	6.7	7.6	7.9	6.6	7.2	9.6	6.7	7.6	7.1	6.3	6.8
18	9.0	6.4	7.4	7.7	6.3	6.9	8.5	7.0	7.6	7.1	6.1	6.6
19	9.2	6.2	7.4	7.4	6.4	6.8	8.2	6.8	7.3	6.6	6.2	6.4
20	9.6	6.0	7.4	7.8	6.4	6.9	8.5	6.8	7.4	6.6	6.2	6.5
21	9.6	5.9	7.4	8.0	6.4	7.0	8.8	6.7	7.5	7.0	6.3	6.6
22	9.2	5.5	6.9	8.5	6.3	7.1	8.7	7.4	7.9	7.3	6.6	6.9
23	8.9	6.0	7.1	8.7	6.5	7.2	8.2	7.0	7.8	7.5	7.0	7.2
24	8.8	5.8	6.9	8.5	6.3	7.0	8.1	7.2	7.5	8.1	7.0	7.5
25	8.8	4.8	6.7	8.4	6.3	7.0	8.3	7.9	8.1	7.8	2.5	6.5
26	6.5	4.7	5.9	6.9	3.9	5.7	8.3	7.9	8.1	7.5	7.0	7.4
27	6.5	6.0	6.3	6.8	6.2	6.6	8.2	7.6	7.9	7.4	7.0	7.2
28	6.4	6.2	6.3	6.8	6.6	6.8	7.9	7.4	7.7	7.7	7.3	7.6
29	6.5	5.7	6.2	7.0	6.7	6.9	8.7	7.1	7.5	7.9	7.5	7.7
30	6.7	6.1	6.4	6.9	6.5	6.8	7.8	7.1	7.3	8.1	7.5	7.7
31	---	---	---	7.2	6.6	6.9	7.9	7.4	7.7	---	---	---
MONTH	9.6	4.7	7.1	8.7	3.9	7.0	9.6	6.3	7.5	8.1	2.5	7.1
YEAR	13.2	2.4	8.4									

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX

LOCATION.--Lat 28°57'05", long 98°03'50", Karnes County, Hydrologic Unit 12100303, on left bank 23 ft downstream from bridge on Farm Road 791, 0.9 mi upstream from Scared Dog Creek, 3.6 mi southwest of Falls City, and 150.5 mi upstream from mouth.

DRAINAGE AREA.--2,113 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1925 to current year.

REVISED RECORDS.--WSP 1732: 1947(M). WSP 1923: Drainage area. WDR TX-87-3: 1983-84.

GAGE.--Water-stage recorder. Datum of gage is 285.49 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. For diversions and regulation above station, see REMARKS paragraph for Salado Creek (upper station) at San Antonio (station 08178700), Medina River at San Antonio (station 08181500), and San Antonio River near Elmendorf (station 08181800). Flow slightly regulated by Calaveras Lake on Calaveras Creek and by Braunig Lake. Flow from Braunig Lake enters the San Antonio River above the station near Elmendorf, and flow from Calaveras Creek enters the San Antonio River some distance downstream from the station near Elmendorf. Flow is affected at times by discharge from the flood-detention pools of ten floodwater-retarding structures with a combined detention capacity of 26,130 acre-ft. These structures control runoff from 73.8 mi². Records provided by the San Antonio City Public Service Board show that during the current year, no water was released into Calaveras Creek from Calaveras Lake and that 139 acre-ft was released from Braunig Lake. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1913 reached a stage of 28.4 ft, from floodmark, from information by local residents. Maximum stage since at least 1875, that of Sept. 29, 1946.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	320	206	283	304	208	194	188	426	101	167	128	565
2	330	227	236	302	189	566	166	240	100	144	85	1200
3	386	237	222	291	196	343	201	199	222	95	78	779
4	459	235	238	294	205	251	176	191	196	79	86	355
5	329	216	241	297	203	227	169	185	171	74	81	317
6	258	202	245	291	211	221	222	177	126	67	72	341
7	242	195	238	290	226	210	216	159	103	78	78	315
8	236	209	230	287	221	233	310	166	128	84	69	436
9	221	209	224	301	270	216	258	163	248	77	69	517
10	205	202	290	310	284	202	212	162	244	87	67	804
11	217	190	319	306	281	202	197	165	217	78	64	1030
12	214	186	311	300	272	196	185	168	162	73	59	634
13	208	183	315	300	263	202	179	231	138	105	65	367
14	205	180	312	295	271	195	174	194	136	159	82	300
15	246	191	312	285	287	181	172	180	141	175	107	327
16	259	183	309	278	264	173	161	220	106	170	108	771
17	252	201	321	292	201	186	164	171	63	162	86	1250
18	221	251	319	295	182	187	146	137	81	161	74	582
19	213	560	356	288	190	170	144	128	88	125	135	341
20	207	389	386	282	187	209	146	117	69	139	197	338
21	206	279	337	227	200	229	147	109	74	114	123	404
22	202	252	316	216	197	229	139	155	79	86	97	303
23	190	254	320	211	193	234	136	139	92	71	116	293
24	191	224	347	213	198	205	164	115	108	86	123	383
25	206	210	314	213	191	173	175	109	152	85	325	1290
26	198	263	295	214	186	163	152	119	127	88	571	922
27	195	273	281	202	193	177	154	116	500	472	434	859
28	198	278	295	198	197	215	157	143	404	489	375	373
29	204	290	301	192	194	219	171	634	301	262	450	286
30	197	283	302	196	---	216	330	273	220	236	1540	245
31	192	---	305	212	---	204	---	132	---	196	800	---
TOTAL	7407	7258	9120	8182	6360	6828	5511	5823	4897	4484	6744	16927
MEAN	239	242	294	264	219	220	184	188	163	145	218	564
MAX	459	560	386	310	287	566	330	634	500	489	1540	1290
MIN	190	180	222	192	182	163	136	109	63	67	59	245
AC-FT	14690	14400	18090	16230	12620	13540	10930	11550	9710	8890	13380	33570

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1996, BY WATER YEAR (WY)

MEAN	427	371	370	405	461	385	460	634	745	416	291	483
MAX	2926	1592	2668	2705	4803	3536	2615	4303	10120	3662	1564	4100
(WY)	1974	1977	1992	1968	1992	1992	1992	1992	1987	1973	1978	1946
MIN	57.5	67.3	70.6	89.0	94.9	75.6	61.2	84.7	38.0	55.3	40.4	57.7
(WY)	1956	1956	1955	1957	1956	1956	1956	1956	1956	1954	1954	1930

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1925 - 1996	
ANNUAL TOTAL	131607		89541			
ANNUAL MEAN	361		245		456	
HIGHEST ANNUAL MEAN					2253	1992
LOWEST ANNUAL MEAN					92.0	1956
HIGHEST DAILY MEAN	3950	Jul 1	1540	Aug 30	42200	Sep 29 1946
LOWEST DAILY MEAN	103	May 5	59	Aug 12	19	Jun 27 1956
ANNUAL SEVEN-DAY MINIMUM	132	May 17	67	Aug 7	23	Jun 8 1956
INSTANTANEOUS PEAK FLOW			2100	Aug 30	47400	Sep 29 1946
INSTANTANEOUS PEAK STAGE			4.19	Aug 30	33.80	Sep 29 1946
ANNUAL RUNOFF (AC-FT)	261000		177600		330000	
10 PERCENT EXCEEDS	481		359		819	
50 PERCENT EXCEEDS	304		206		246	
90 PERCENT EXCEEDS	183		94		91	

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1959. Chemical and biochemical analyses: May 1965 to September 1981, October 1986 to August 1995. Sediment analyses: November 1958 to February 1975.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1987 to September 1996 (discontinued).
pH: January 1987 to September 1996 (discontinued).
WATER TEMPERATURE: January 1987 to September 1996 (discontinued).
DISSOLVED OXYGEN: January 1987 to September 1996 (discontinued).

INSTRUMENTATION.--Beginning January 1987, a four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunction of the instrument or probe fouling. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,330 microsiemens May 6, 1995; minimum, 71 microsiemens May 24, 1993.
WATER TEMPERATURE: Maximum, 34.5°C Aug. 12, 1996; minimum, 5.5°C Dec. 24, 1989.
pH: Maximum, 8.9 units Jan. 19, 20, Dec. 11, 14, 1989; minimum, 7.0 units on many days during period of record.
DISSOLVED OXYGEN: Maximum, 15.6 mg/L July 12, 1988; minimum, 0.0 mg/L May 16, 1987, July 3, 1990.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,310 microsiemens Dec. 4; minimum, 210 microsiemens Sept. 25.
WATER TEMPERATURE: Maximum, 34.5°C Aug. 12; minimum, 9.0°C Feb. 4,5.
pH: Maximum, 8.4 units several days during Oct.-Feb.; minimum, 7.3 units on July 28.
DISSOLVED OXYGEN: Maximum, 11.9 mg/L Apr. 18, 24; minimum, 2.8 mg/L Sept. 9, 11.

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICRO-SIEMENS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1995	7407	1010	556	11100	110	2170	95	1890	310
NOV.	1995	7258	1000	551	10800	110	2110	94	1840	310
DEC.	1995	9120	1090	595	14600	120	2990	100	2530	320
JAN.	1996	8182	1080	589	13000	120	2640	100	2240	320
FEB.	1996	6360	1090	596	10200	120	2090	100	1770	320
MAR.	1996	6828	1060	583	10700	120	2170	100	1850	320
APR.	1996	5511	1120	611	9090	130	1900	110	1580	330
MAY	1996	5823	1080	588	9240	120	1910	100	1600	320
JUNE	1996	4897	992	547	7230	110	1410	93	1230	300
JULY	1996	4484	988	544	6580	110	1290	93	1120	300
AUG.	1996	6744	764	428	7800	75	1360	71	1290	250
SEPT	1996	16927	647	369	16800	57	2620	59	2690	220
TOTAL		89541	**	**	127000	**	24700	**	21600	**
WTD.AVG.		245	955	527	**	100	**	90	**	290

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	967	933	952	1120	1110	1110	1090	1070	1080	1070	1050	1060
2	978	949	962	1110	1070	1090	1130	1090	1110	1090	1060	1080
3	969	790	904	1070	1020	1050	1170	1130	1150	1080	1070	1070
4	1030	748	925	1060	1020	1030	1310	1160	1200	1070	1040	1060
5	931	736	879	1070	1050	1060	1210	1170	1180	1040	1030	1040
6	799	562	690	1080	1060	1060	1180	1150	1170	1050	1020	1030
7	1000	799	929	1080	1060	1070	1160	1140	1160	1070	1040	1050
8	1010	1000	1010	1100	1080	1090	1140	1110	1130	1080	1060	1070
9	1030	994	1010	1100	1070	1090	1130	1110	1120	1090	1060	1080
10	1060	1020	1030	1080	1040	1060	1150	1120	1140	1080	1050	1070
11	1060	1040	1050	1060	1040	1050	1120	1100	1110	1050	1020	1040
12	1050	1020	1040	1100	1060	1080	1130	1110	1120	1020	1010	1010
13	1020	1000	1020	1100	1090	1090	1110	1090	1110	1050	1010	1030
14	1010	973	1000	---	---	1080	1090	1070	1090	1070	1050	1060
15	1030	1010	1030	---	---	1070	1080	1060	1070	1090	1060	1080
16	1030	1010	1020	---	---	1060	1100	1070	1080	1100	1070	1090
17	1040	1020	1030	---	---	1070	1110	1090	1110	1100	1080	1090
18	1050	1020	1030	---	---	900	1130	1090	1110	1080	1040	1060
19	1090	1040	1060	---	---	600	1110	1070	1090	1040	1020	1030
20	1090	1060	1080	---	---	850	1070	1060	1070	1080	1030	1060
21	1060	1050	1060	---	---	900	1070	1000	1030	1110	1070	1080
22	1100	1060	1090	---	---	930	1070	995	1010	1140	1110	1120
23	1120	1100	1110	976	952	962	1050	1010	1040	1160	1140	1140
24	1140	1120	1130	1020	959	983	1060	1050	1060	1160	1140	1150
25	1140	1120	1130	1080	1020	1040	1080	1050	1070	1140	1120	1130
26	1120	1110	1110	1090	1070	1080	1070	1030	1050	1120	1090	1100
27	1110	1080	1090	1110	1080	1090	1060	1050	1060	1110	1080	1090
28	1080	1050	1060	1110	1070	1080	1060	1040	1060	1150	1110	1130
29	1100	1080	1090	1100	1060	1080	1040	999	1030	1150	1140	1140
30	1110	1090	1100	1100	1080	1090	1020	1000	1010	1150	1140	1150
31	1110	1110	1110	---	---	---	1050	1020	1040	1150	1130	1130
MONTH	1140	562	1020	1120	952	1030	1310	995	1090	1160	1010	1080

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1130	1120	1120	1120	1080	1100	1130	1110	1120	1100	989	1030
2	1120	1080	1100	1080	1040	1060	1140	1110	1120	989	683	759
3	1090	1070	1080	1070	693	865	1150	1120	1140	877	721	810
4	1110	1070	1090	924	699	804	1120	1110	1110	1040	877	946
5	1120	1100	1120	1010	924	987	1120	1090	1110	1070	1040	1060
6	1130	1120	1120	1040	987	1010	1110	1050	1080	1210	1070	1140
7	1120	1090	1110	1070	1040	1050	1100	1050	1080	1230	1210	1220
8	1100	1040	1060	1060	1020	1030	1120	1080	1100	1230	1220	1230
9	1050	999	1020	1070	1020	1040	1100	1070	1080	1240	1200	1220
10	1030	994	1010	1090	1070	1080	1100	1030	1070	1210	1200	1200
11	1060	1030	1040	1120	1080	1100	1060	1030	1050	1200	1150	1170
12	1070	1040	1060	1130	1110	1120	1070	1040	1060	1210	1160	1180
13	1100	1060	1080	1120	1110	1110	1080	1040	1060	1210	1160	1200
14	1080	1060	1070	1110	1090	1100	1130	1080	1110	1160	1140	1150
15	1060	1030	1050	1110	1080	1090	1150	1130	1140	1210	1140	1180
16	1040	1010	1030	1110	1080	1090	1160	1140	1150	1200	1050	1090
17	1060	1030	1050	1140	1110	1130	1170	1150	1160	1110	1060	1080
18	1120	1050	1080	1130	1120	1120	1170	1140	1150	1150	1080	1110
19	1150	1120	1140	1160	1130	1140	1160	1150	1150	1190	1150	1170
20	1140	1120	1130	1160	1100	1140	1150	1130	1140	1240	1190	1230
21	1150	1120	1140	1100	1060	1080	1160	1140	1150	1270	1230	1250
22	1150	1120	1140	1070	1040	1050	1190	1160	1170	1290	1260	1270
23	1140	1110	1130	1110	1050	1070	1210	1190	1200	1260	1180	1210
24	1110	1100	1110	1120	1090	1100	1220	1190	1200	1210	1180	1200
25	1140	1110	1120	1170	1120	1150	1190	1140	1160	1220	1180	1210
26	1160	1130	1140	1170	1150	1160	1150	1130	1140	1230	1180	1210
27	1160	1150	1150	1150	1130	1140	1150	1110	1130	1230	1210	1220
28	1160	1140	1150	1140	1100	1130	1150	1120	1130	1250	1230	1240
29	1140	1120	1120	1100	1050	1070	1170	1120	1150	1260	620	1060
30	---	---	---	1100	1070	1070	1190	1100	1160	620	547	570
31	---	---	---	1120	1100	1110	---	---	---	678	606	646
MONTH	1160	994	1100	1170	693	1070	1220	1030	1130	1290	547	1110

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	861	678	745	911	845	865	980	947	967	934	555	715
2	1090	861	1010	986	911	934	1030	980	997	958	477	706
3	1110	1080	1090	1030	986	1010	1100	1030	1060	635	375	471
4	1080	877	964	1090	1030	1050	1100	1090	1100	642	470	533
5	957	653	821	1160	1090	1120	1120	1090	1100	890	642	738
6	1070	950	1030	1180	1160	1170	1180	1120	1140	1030	890	942
7	1080	1020	1040	1180	1160	1170	1200	1180	1190	1060	894	1010
8	1100	1050	1090	1170	1140	1160	1210	1180	1200	1020	744	884
9	1050	982	1010	1160	1140	1150	1210	1190	1200	840	409	542
10	1040	1030	1040	1200	1160	1170	1230	1210	1220	1080	453	894
11	1090	971	1050	1210	1170	1190	1240	1200	1230	735	390	563
12	1020	962	984	1170	1140	1160	1210	1110	1180	766	550	671
13	1070	1020	1050	1170	1150	1160	1180	1160	1170	643	548	597
14	1080	1060	1070	1170	1050	1120	1190	1180	1190	817	643	721
15	1080	1040	1060	1060	1050	1050	1180	1140	1160	855	748	821
16	1070	1010	1060	1080	1060	1080	1140	1070	1110	983	812	906
17	1140	1070	1100	1070	1040	1050	1070	1040	1050	905	315	485
18	1240	1140	1170	1040	1020	1030	1070	1050	1060	611	513	542
19	1290	1220	1270	1050	1020	1040	1080	1040	1060	686	611	650
20	1220	1180	1200	1070	1040	1050	1070	983	1010	812	679	740
21	1230	1190	1200	1070	1040	1060	988	978	983	848	591	695
22	1250	1210	1230	1130	1050	1070	1010	978	993	835	705	793
23	1210	1140	1170	1150	1120	1140	1040	1010	1020	953	832	912
24	1160	1100	1120	1180	1130	1160	1040	989	1020	1010	764	965
25	1130	1060	1110	1190	1150	1180	990	666	931	764	210	347
26	1140	1100	1120	1220	1180	1200	747	282	618	956	351	659
27	1170	955	1070	1220	1030	1150	801	472	557	497	395	429
28	999	503	672	1070	518	661	844	773	814	---	---	475
29	836	590	733	667	598	641	784	653	750	---	---	550
30	852	789	821	820	649	745	678	278	452	---	---	675
31	---	---	---	947	796	840	734	514	603	---	---	---
MONTH	1290	503	1040	1220	518	1050	1240	278	1000	1080	210	688
YEAR	1310	210	1030									

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.9	7.9	7.9	8.0	7.9	7.9	8.3	8.2	8.3	8.2	8.1	8.1
2	7.9	7.9	7.9	8.0	7.9	8.0	8.3	8.2	8.2	8.2	8.1	8.1
3	7.9	7.7	7.9	8.0	7.9	7.9	8.3	8.2	8.2	8.3	8.1	8.2
4	7.9	7.7	7.9	7.9	7.9	7.9	8.3	8.2	8.2	8.3	8.1	8.2
5	8.0	7.9	7.9	8.0	7.9	8.0	8.3	8.2	8.2	8.3	8.1	8.1
6	7.9	7.7	7.8	8.0	7.9	8.0	8.4	8.1	8.2	8.1	8.1	8.1
7	8.0	7.8	7.9	8.0	8.0	8.0	8.2	8.1	8.1	8.2	8.1	8.1
8	8.0	7.9	7.9	8.0	8.0	8.0	8.1	8.1	8.1	8.4	8.1	8.2
9	8.0	7.9	8.0	8.0	8.0	8.0	8.2	8.1	8.1	8.3	8.1	8.2
10	8.1	7.9	8.0	8.1	8.0	8.1	8.3	8.1	8.2	8.3	8.1	8.2
11	8.1	7.9	8.0	8.1	8.0	8.0	8.3	8.2	8.2	8.2	8.2	8.2
12	8.1	8.0	8.0	8.1	8.0	8.0	8.3	8.2	8.2	8.2	8.2	8.2
13	8.2	8.0	8.0	8.1	8.0	8.1	8.3	8.2	8.2	8.2	8.2	8.2
14	8.1	8.0	8.0	---	---	---	8.2	8.1	8.2	8.2	8.2	8.2
15	8.3	8.0	8.1	---	---	---	8.2	8.1	8.2	8.2	8.2	8.2
16	8.3	8.0	8.1	---	---	---	8.3	8.0	8.1	8.2	8.1	8.2
17	8.3	8.0	8.1	---	---	---	8.1	8.0	8.0	8.1	8.1	8.1
18	8.4	8.0	8.1	---	---	---	8.1	8.0	8.0	8.1	8.1	8.1
19	8.1	8.0	8.0	---	---	---	8.1	8.0	8.1	8.2	8.1	8.2
20	8.0	8.0	8.0	---	---	---	8.2	8.1	8.1	8.2	8.2	8.2
21	8.0	7.9	8.0	---	---	---	8.2	8.1	8.2	8.2	8.2	8.2
22	8.0	7.9	8.0	---	---	---	8.2	8.1	8.2	8.3	8.2	8.2
23	8.0	8.0	8.0	---	---	---	8.2	8.1	8.2	8.2	8.2	8.2
24	8.0	8.0	8.0	8.2	8.1	8.2	8.2	8.2	8.2	8.3	8.2	8.3
25	8.1	8.0	8.0	8.2	8.1	8.2	8.2	8.2	8.2	8.3	8.3	8.3
26	8.1	8.0	8.1	8.3	8.1	8.2	8.3	8.1	8.1	8.3	8.3	8.3
27	8.1	8.0	8.1	8.2	8.1	8.1	8.2	8.1	8.1	8.3	8.3	8.3
28	8.1	8.0	8.1	8.2	8.1	8.2	8.3	8.1	8.1	8.3	8.3	8.3
29	8.1	8.0	8.0	8.3	8.2	8.2	8.1	8.1	8.1	8.3	8.3	8.3
30	8.0	8.0	8.0	8.3	8.2	8.3	8.2	8.1	8.1	8.3	8.2	8.3
31	8.0	7.9	8.0	---	---	---	8.2	8.1	8.1	8.3	8.2	8.2
MONTH	8.4	7.7	8.0	8.3	7.9	8.1	8.4	8.0	8.2	8.4	8.1	8.2

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.3	8.3	8.3	8.0	7.9	8.0	8.2	8.0	8.1	8.0	7.9	8.0
2	8.3	8.3	8.3	8.0	7.9	8.0	8.1	8.0	8.1	7.9	7.7	7.8
3	8.3	8.3	8.3	7.9	7.4	7.7	8.1	8.0	8.1	7.8	7.7	7.8
4	8.4	8.3	8.3	7.8	7.5	7.7	8.1	8.0	8.1	7.9	7.8	7.9
5	8.4	8.3	8.4	7.9	7.8	7.8	8.1	8.0	8.1	8.0	7.9	7.9
6	8.3	8.3	8.3	7.9	7.9	7.9	8.1	8.1	8.1	8.1	7.9	8.0
7	8.3	8.3	8.3	8.0	7.9	8.0	8.1	8.1	8.1	8.0	7.9	7.9
8	8.3	8.2	8.3	8.0	7.9	8.0	8.1	8.1	8.1	8.0	7.9	8.0
9	8.4	8.3	8.3	8.1	8.0	8.0	8.1	8.1	8.1	8.0	8.0	8.0
10	8.4	8.3	8.3	8.1	8.0	8.0	8.1	8.1	8.1	8.1	8.0	8.0
11	8.3	8.2	8.3	8.1	8.0	8.1	8.1	8.1	8.1	8.0	8.0	8.0
12	8.3	8.2	8.3	8.1	8.0	8.1	8.1	8.1	8.1	8.1	8.0	8.0
13	8.3	8.2	8.2	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.0	8.0
14	8.2	8.1	8.2	8.2	8.1	8.1	8.1	8.1	8.1	8.1	8.0	8.1
15	8.1	7.8	8.0	8.2	8.1	8.1	8.1	8.0	8.1	8.1	8.0	8.1
16	8.1	7.9	8.0	8.1	8.0	8.1	8.1	8.0	8.0	8.1	8.0	8.1
17	8.1	8.0	8.1	8.1	8.0	8.1	8.1	8.0	8.1	8.1	8.0	8.1
18	8.1	8.1	8.1	8.1	8.0	8.1	8.1	8.0	8.1	8.2	8.0	8.1
19	8.2	8.1	8.1	8.2	8.0	8.1	8.1	8.0	8.1	8.2	8.0	8.1
20	8.1	8.1	8.1	8.2	8.1	8.1	8.1	8.0	8.1	8.2	8.0	8.1
21	8.2	8.1	8.1	8.2	8.1	8.1	8.1	8.0	8.0	8.2	8.0	8.1
22	8.2	7.9	8.1	8.2	8.1	8.1	8.0	8.0	8.0	8.2	8.0	8.1
23	7.9	7.9	7.9	8.1	8.1	8.1	8.1	8.0	8.0	8.2	8.1	8.2
24	7.9	7.9	7.9	8.2	8.0	8.1	8.1	8.0	8.1	8.2	8.1	8.2
25	7.9	7.9	7.9	8.2	8.0	8.1	8.2	8.0	8.1	8.2	8.1	8.2
26	7.9	7.9	7.9	8.1	8.1	8.1	8.1	8.0	8.1	8.2	8.2	8.2
27	7.9	7.9	7.9	8.1	8.1	8.1	8.1	8.0	8.1	8.2	8.2	8.2
28	7.9	7.9	7.9	8.2	8.1	8.1	8.1	8.0	8.1	8.3	8.1	8.2
29	7.9	7.9	7.9	8.2	8.1	8.2	8.1	7.9	8.0	8.2	7.8	8.0
30	---	---	---	8.1	8.1	8.1	8.1	7.9	8.0	7.8	7.7	7.8
31	---	---	---	8.2	8.1	8.1	---	---	---	7.9	7.8	7.8
MONTH	8.4	7.8	8.1	8.2	7.4	8.0	8.2	7.9	8.1	8.3	7.7	8.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.9	7.8	7.9	8.0	7.9	7.9	8.0	7.8	7.9	7.9	7.7	7.8
2	8.1	7.8	8.0	8.2	7.8	8.0	8.2	7.8	8.0	8.0	7.6	7.8
3	8.1	7.9	8.0	8.2	7.8	8.0	8.2	7.8	8.0	7.7	7.6	7.7
4	8.1	7.9	8.0	8.2	7.9	8.0	8.2	7.9	8.0	7.7	7.6	7.7
5	8.0	7.7	7.9	8.2	7.8	8.0	8.2	7.9	8.0	7.9	7.7	7.8
6	8.0	7.8	7.9	8.2	8.0	8.1	8.2	8.0	8.1	8.0	7.9	8.0
7	8.0	7.9	8.0	8.2	8.0	8.1	8.0	7.9	8.0	8.1	8.0	8.0
8	8.1	7.9	8.0	8.2	8.0	8.1	8.1	7.8	7.9	8.1	8.0	8.0
9	8.0	7.9	8.0	8.2	8.0	8.1	8.1	7.9	8.0	8.1	7.8	8.0
10	8.1	8.0	8.0	8.2	8.0	8.1	8.1	7.9	8.0	8.2	8.0	8.1
11	8.1	8.0	8.0	8.3	8.1	8.1	8.0	7.9	8.0	8.1	7.9	8.0
12	8.1	8.0	8.0	8.3	8.1	8.2	8.1	7.9	8.0	---	---	---
13	8.2	7.9	8.0	8.3	8.0	8.1	---	---	---	---	---	---
14	8.2	8.0	8.1	8.3	8.1	8.2	---	---	---	---	---	---
15	8.1	7.9	8.0	8.2	8.1	8.2	---	---	---	---	---	---
16	8.2	7.9	8.0	8.3	8.1	8.2	---	---	---	---	---	---
17	8.2	7.9	8.0	8.2	8.1	8.2	---	---	---	---	---	---
18	8.2	8.0	8.1	8.1	8.0	8.0	---	---	---	---	---	---
19	8.3	7.9	8.1	8.1	8.0	8.0	---	---	---	---	---	---
20	8.3	8.0	8.1	8.1	7.9	8.0	---	---	---	---	---	---
21	8.3	8.0	8.1	8.1	7.9	8.0	---	---	---	---	---	---
22	8.3	8.1	8.2	8.1	8.0	8.0	---	---	---	---	---	---
23	8.2	8.1	8.2	8.1	7.9	8.0	---	---	---	---	---	---
24	8.2	8.0	8.1	8.0	7.9	7.9	---	---	---	---	---	---
25	8.1	7.9	8.0	8.0	7.9	7.9	---	---	---	---	---	---
26	8.2	8.1	8.1	8.2	7.9	8.0	---	---	---	---	---	---
27	8.2	8.0	8.1	7.6	7.4	7.5	8.0	7.9	7.9	---	---	---
28	8.0	7.8	7.9	7.5	7.3	7.4	8.0	7.9	7.9	---	---	---
29	8.0	7.8	7.9	7.6	7.4	7.5	7.9	7.7	7.9	---	---	---
30	8.0	7.9	8.0	7.8	7.5	7.7	8.1	7.7	7.9	---	---	---
31	---	---	---	7.9	7.8	7.8	7.8	7.6	7.7	---	---	---
MONTH	8.3	7.7	8.0	8.3	7.3	8.0	8.2	7.6	8.0	8.2	7.6	7.9
YEAR	8.4	7.3	8.1									

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.0	27.5	27.5	22.5	22.5	22.5	17.0	16.0	16.0	16.5	15.5	16.0
2	28.0	27.5	27.5	23.5	22.5	23.0	18.0	17.0	17.0	16.0	14.5	15.5
3	27.5	26.0	27.0	22.5	20.0	21.5	19.0	18.0	18.5	14.5	13.5	14.0
4	26.5	25.5	26.0	20.0	18.0	19.0	19.5	19.0	19.0	13.5	13.0	13.5
5	26.0	25.0	25.5	18.0	17.0	17.5	20.0	19.0	19.5	13.5	13.0	13.5
6	25.0	23.5	24.0	17.0	17.0	17.0	20.0	20.0	20.0	13.5	12.0	13.0
7	23.5	23.0	23.0	18.0	17.0	17.5	20.0	19.0	19.5	12.0	11.0	11.5
8	23.5	22.5	23.0	18.0	17.5	18.0	19.0	18.0	18.5	11.0	10.5	10.5
9	23.5	22.5	23.0	18.0	17.5	18.0	18.0	16.0	17.0	11.0	10.0	10.5
10	24.0	23.0	23.0	20.0	18.0	19.0	16.0	14.0	14.5	11.5	10.5	11.0
11	24.0	23.0	23.0	20.0	19.0	19.5	15.0	14.0	14.0	13.0	11.5	12.0
12	23.5	23.0	23.0	19.0	17.5	18.0	16.0	15.0	15.5	13.0	12.0	12.5
13	24.5	23.0	24.0	17.5	17.0	17.5	17.5	16.0	16.5	13.5	12.5	13.0
14	24.5	23.0	24.0	---	---	---	19.0	17.5	18.0	14.5	13.5	14.0
15	23.0	22.0	22.5	---	---	---	20.5	19.0	19.5	15.0	14.5	15.0
16	22.0	21.5	21.5	---	---	---	20.5	20.0	20.5	16.5	15.0	15.5
17	22.0	21.0	21.5	---	---	---	21.5	20.5	21.0	18.0	16.5	17.0
18	23.0	21.5	22.0	---	---	---	21.5	20.5	21.0	18.0	16.5	17.5
19	23.5	22.0	22.5	---	---	---	20.5	18.0	19.0	16.5	14.0	15.0
20	23.0	22.0	22.5	---	---	---	18.0	17.0	17.5	14.0	13.5	14.0
21	22.0	20.5	21.5	---	---	---	17.0	14.5	15.5	14.5	13.5	14.0
22	21.5	20.5	21.0	---	---	---	14.5	14.0	14.5	15.5	14.5	15.0
23	22.0	21.5	22.0	20.0	19.5	20.0	14.0	13.0	13.5	17.0	15.5	16.5
24	22.0	21.0	21.5	20.0	19.0	19.5	13.0	13.0	13.0	17.0	16.0	16.5
25	21.0	20.5	21.0	19.0	18.0	18.5	13.5	13.0	13.0	16.0	15.5	15.5
26	22.0	21.0	21.5	18.5	17.5	18.0	13.5	13.0	13.5	17.0	15.5	16.5
27	24.0	22.0	23.0	19.0	18.0	18.5	13.5	12.5	13.0	16.5	15.0	16.0
28	23.5	22.5	23.0	19.0	17.0	18.0	14.0	13.0	13.5	15.0	14.0	14.5
29	22.5	21.5	22.0	17.0	16.0	16.5	13.5	13.0	13.5	15.5	14.0	15.0
30	21.5	21.5	21.5	16.0	15.0	15.5	14.0	13.0	13.5	17.0	15.5	16.5
31	---	---	---	---	---	---	15.5	14.0	15.0	17.0	14.0	15.5
MONTH	28.0	20.5	23.0	23.5	15.0	18.5	21.5	12.5	16.5	18.0	10.0	14.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	14.0	12.0	13.0	16.0	14.0	15.0	21.0	19.5	20.0	24.0	22.5	23.0
2	12.0	10.5	11.0	15.0	13.5	14.5	20.5	19.5	20.0	23.5	23.0	23.5
3	10.5	9.5	10.0	15.0	14.0	14.5	20.0	19.5	19.5	25.0	23.5	24.0
4	9.5	9.0	9.0	16.0	15.0	15.5	21.0	20.0	20.5	26.0	24.0	25.0
5	9.5	9.0	9.0	18.0	16.0	17.0	21.0	19.0	20.5	26.0	25.0	25.5
6	11.5	9.5	10.5	20.0	18.0	19.0	19.0	17.5	18.0	26.5	25.5	26.0
7	14.0	11.5	13.0	19.5	17.5	18.5	18.5	17.5	18.0	26.5	26.0	26.0
8	15.5	14.0	15.0	17.5	15.5	16.0	19.0	17.5	18.5	26.5	25.5	26.0
9	17.5	15.5	16.5	15.5	14.5	15.0	20.0	18.5	19.5	27.0	25.5	26.0
10	19.0	17.5	18.0	15.0	14.0	14.5	22.0	20.0	21.0	28.0	26.0	26.5
11	19.0	18.0	18.5	15.0	14.0	14.5	22.0	21.0	21.5	28.0	26.5	27.0
12	18.0	16.5	17.0	16.0	15.0	15.5	23.5	22.0	22.5	28.5	26.5	27.0
13	16.5	16.0	16.5	18.0	16.0	17.0	25.5	22.5	23.5	28.0	26.5	27.5
14	17.0	16.0	16.5	20.0	18.0	19.0	25.5	24.0	24.5	28.5	27.0	27.5
15	17.5	16.5	17.0	22.0	19.5	20.5	24.5	23.0	24.0	29.0	27.5	28.0
16	17.0	16.0	16.5	23.0	21.0	22.0	24.0	22.0	23.0	29.0	27.5	28.0
17	16.0	15.0	15.5	24.0	22.5	23.0	23.5	22.0	22.5	30.0	28.0	28.5
18	17.0	15.5	16.0	23.0	21.5	22.5	27.0	22.5	24.0	30.0	28.0	28.5
19	18.0	16.5	17.5	21.5	20.0	21.0	27.5	24.0	25.5	30.5	28.0	28.5
20	19.0	18.0	18.5	20.0	19.0	19.5	27.5	25.5	26.5	30.5	28.0	29.0
21	20.0	18.5	19.0	19.0	18.0	18.5	27.0	26.0	26.5	31.5	28.0	29.5
22	21.0	19.5	20.0	19.5	18.0	19.0	26.0	25.0	26.0	31.5	28.5	29.5
23	22.0	20.5	21.0	19.5	19.0	19.0	26.0	24.0	25.0	31.0	29.0	29.5
24	21.5	20.5	21.0	20.5	19.0	19.5	26.0	23.5	24.5	30.0	28.5	29.0
25	22.0	20.5	21.0	20.5	19.0	20.0	26.5	23.5	24.5	29.5	28.5	29.0
26	22.0	21.5	22.0	19.0	16.5	17.5	25.5	24.5	25.0	30.0	28.5	29.0
27	23.5	22.0	22.5	16.5	14.5	15.5	25.5	24.5	25.0	30.0	28.5	29.0
28	22.5	19.5	21.0	16.5	14.5	15.5	26.5	25.0	25.5	30.5	28.5	29.0
29	19.5	16.0	17.5	16.5	16.5	16.5	25.0	23.5	24.5	29.5	28.5	29.0
30	---	---	---	19.0	16.5	17.5	23.5	22.5	23.0	29.5	28.0	28.5
31	---	---	---	19.5	18.5	19.0	---	---	---	29.5	28.5	29.0
MONTH	23.5	9.0	16.5	24.0	13.5	18.0	27.5	17.5	22.5	31.5	22.5	27.5

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.5	28.0	29.0	33.0	30.0	31.0	33.0	30.0	31.0	28.0	26.5	27.5
2	33.0	28.5	30.0	34.0	30.5	31.5	34.0	30.0	31.5	28.0	28.0	28.0
3	30.5	29.0	29.5	33.5	30.5	31.5	32.5	30.0	31.0	28.0	27.0	27.5
4	32.5	28.5	29.5	33.5	30.5	31.5	32.5	30.0	31.0	29.0	28.0	28.5
5	30.5	28.0	29.0	33.5	30.5	31.5	32.5	30.0	31.0	29.0	28.0	28.5
6	31.5	29.0	30.0	34.0	30.5	32.0	33.0	30.5	31.5	29.0	28.5	29.0
7	29.5	29.0	29.5	33.5	30.5	32.0	33.0	30.5	31.5	29.5	28.0	28.5
8	31.0	28.0	29.0	33.0	31.0	32.0	32.0	30.5	31.0	29.0	27.5	28.0
9	28.5	28.0	28.5	33.0	31.0	31.5	33.0	30.0	31.0	28.5	26.5	27.5
10	29.0	28.0	28.5	32.0	31.0	31.5	32.5	30.0	31.0	29.5	28.0	29.0
11	29.5	28.0	28.5	32.5	30.5	31.0	33.0	30.0	31.5	28.5	28.0	28.0
12	31.5	28.5	29.5	33.0	30.0	31.0	34.5	30.5	32.0	28.0	27.5	27.5
13	32.5	29.0	30.0	33.0	30.5	31.5	34.0	30.5	32.0	28.0	27.5	27.5
14	33.0	29.5	30.5	33.0	30.5	31.5	32.5	31.0	31.5	28.0	27.0	27.5
15	32.0	30.0	30.5	32.5	30.5	31.0	33.0	30.5	31.5	28.5	27.0	28.0
16	33.0	30.0	31.0	32.5	30.5	31.0	32.5	29.5	30.5	28.5	27.5	28.0
17	33.5	30.0	31.5	32.5	30.5	31.0	32.5	29.5	30.5	28.0	26.0	27.0
18	34.0	30.5	31.5	32.5	30.5	31.0	32.0	29.5	30.5	28.0	27.5	27.5
19	34.0	30.5	32.0	33.0	30.5	31.0	30.0	29.0	29.5	29.0	28.0	28.5
20	34.0	30.5	32.0	33.0	30.5	31.5	31.0	28.5	29.0	29.0	28.0	29.0
21	33.5	31.0	32.0	32.5	30.5	31.5	31.5	29.0	29.5	29.0	27.0	28.5
22	32.0	31.0	31.5	32.5	30.0	31.0	29.5	28.5	29.0	29.0	28.0	28.5
23	31.0	30.0	30.5	33.0	30.5	31.5	29.5	28.0	28.5	29.5	28.5	29.0
24	31.0	29.0	30.0	31.5	30.5	31.0	29.5	28.0	29.0	30.0	27.5	29.0
25	29.5	29.0	29.0	33.5	30.0	31.0	28.0	26.5	28.0	27.5	24.0	25.0
26	30.0	29.0	29.5	32.5	30.0	31.0	26.5	25.5	26.0	28.5	25.5	27.5
27	30.0	29.0	29.5	30.5	30.0	30.0	28.0	26.0	27.0	28.0	25.5	27.0
28	30.0	29.5	30.0	30.0	29.0	29.5	28.5	28.0	28.0	25.5	17.5	23.0
29	30.5	29.0	29.5	30.5	29.0	29.5	29.0	28.0	28.5	25.5	14.5	19.0
30	31.5	29.5	30.5	31.0	29.5	30.0	28.0	24.5	25.5	26.0	14.0	19.5
31	---	---	---	33.0	29.5	30.5	27.0	26.5	26.5	---	---	---
MONTH	34.0	28.0	30.0	34.0	29.0	31.0	34.5	24.5	30.0	30.0	14.0	27.0
YEAR	34.5	9.0	23.0									

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.3	5.8	6.0	7.9	7.1	7.5	8.4	8.0	8.2	8.6	8.2	8.4
2	6.2	5.8	5.9	7.2	7.0	7.1	8.3	7.4	7.9	8.6	8.1	8.3
3	6.6	4.9	5.9	8.0	7.2	7.5	8.1	7.3	7.6	9.2	8.4	8.8
4	6.2	4.9	5.9	7.9	7.3	7.6	7.3	6.8	7.0	9.6	9.1	9.2
5	6.6	5.9	6.0	8.8	7.8	8.1	7.3	6.7	7.1	9.4	9.1	9.2
6	6.7	6.0	6.3	8.5	8.0	8.3	7.7	6.9	7.3	9.7	8.9	9.4
7	7.3	6.1	7.0	8.3	8.0	8.2	7.2	6.8	7.0	10.4	8.9	9.9
8	7.6	6.9	7.3	8.4	7.8	8.0	7.2	6.9	7.1	11.2	10.1	10.5
9	7.5	6.4	7.0	8.2	7.7	7.9	7.9	7.1	7.5	11.1	10.4	10.6
10	7.2	6.4	7.0	7.8	7.3	7.5	8.9	7.9	8.5	10.7	10.4	10.6
11	7.2	6.6	6.9	7.6	7.1	7.3	8.9	8.6	8.8	10.7	10.1	10.3
12	7.5	6.6	7.0	8.3	7.2	7.7	8.8	8.3	8.5	10.2	9.7	9.9
13	7.4	6.6	6.8	8.4	7.7	8.1	8.6	8.0	8.2	10.0	9.6	9.7
14	7.4	6.6	6.9	---	---	---	8.1	7.1	7.5	9.8	9.4	9.5
15	7.6	6.7	7.1	---	---	---	7.3	6.6	6.9	9.5	9.0	9.2
16	7.2	6.9	7.0	---	---	---	6.8	6.4	6.5	9.2	8.8	9.0
17	7.8	6.9	7.3	---	---	---	6.5	6.1	6.3	8.9	8.5	8.6
18	8.1	7.0	7.4	---	---	---	6.4	5.9	6.1	8.5	8.2	8.3
19	9.6	7.0	7.9	---	---	---	7.1	6.1	6.5	9.1	8.4	8.7
20	9.6	8.2	8.8	---	---	---	7.7	7.0	7.4	9.3	9.1	9.2
21	9.5	8.5	9.2	---	---	---	8.3	7.7	8.0	9.3	9.0	9.2
22	10.2	8.8	9.5	---	---	---	8.7	8.3	8.5	9.2	9.0	9.1
23	9.7	8.6	9.0	---	---	---	9.0	8.6	8.7	9.0	8.4	8.8
24	9.1	8.4	8.8	7.0	6.8	6.9	9.3	9.0	9.1	8.5	8.3	8.4
25	9.2	8.2	8.8	7.3	6.8	7.2	9.3	9.1	9.2	8.7	8.4	8.6
26	9.3	7.9	8.6	8.0	7.3	7.5	9.2	8.9	9.1	8.7	8.4	8.6
27	7.9	7.5	7.7	7.4	7.1	7.2	9.3	9.0	9.2	8.6	8.3	8.5
28	7.9	7.3	7.5	7.5	7.2	7.3	9.4	9.0	9.2	8.8	8.5	8.7
29	7.5	7.2	7.3	8.2	7.5	7.8	9.2	9.0	9.1	8.9	8.5	8.7
30	7.7	7.2	7.4	8.4	8.0	8.2	9.2	8.9	9.1	8.7	8.1	8.4
31	7.8	7.4	7.5	---	---	---	9.0	8.4	8.8	8.4	8.2	8.3
MONTH	10.2	4.9	7.4	8.8	6.8	7.6	9.4	5.9	7.9	11.2	8.1	9.1

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.1	8.4	8.7	8.5	7.6	8.1	8.1	7.0	7.4	7.8	5.1	5.9
2	9.9	9.1	9.4	9.2	8.4	8.8	8.1	7.1	7.4	5.6	4.7	5.0
3	10.4	9.9	10.1	8.4	4.7	6.8	7.7	6.9	7.2	8.6	5.2	6.0
4	11.0	10.3	10.7	7.6	5.6	6.9	7.3	6.5	6.9	8.4	5.4	6.2
5	11.1	10.9	11.0	7.6	7.0	7.3	7.1	6.4	6.7	7.2	5.4	6.1
6	10.9	10.3	10.7	7.4	6.6	6.9	8.1	6.6	7.3	6.6	5.6	6.1
7	10.4	9.5	9.9	7.7	6.7	7.1	8.9	7.4	7.8	6.6	5.9	6.2
8	9.5	8.9	9.2	8.8	6.9	7.7	8.8	7.1	7.8	6.6	5.8	6.2
9	8.9	8.4	8.7	11.0	7.9	8.6	9.5	7.0	7.7	7.0	6.0	6.4
10	8.4	8.0	8.2	11.7	8.0	8.9	9.3	6.8	7.4	6.9	6.0	6.4
11	8.0	7.9	7.9	11.7	8.0	9.1	8.7	6.6	7.1	6.7	5.7	6.2
12	8.5	8.0	8.2	10.7	7.7	8.6	9.5	5.7	6.5	7.8	5.6	6.2
13	8.6	8.5	8.5	9.7	7.7	8.3	10.9	5.5	6.7	7.1	5.8	6.2
14	8.6	8.4	8.5	10.5	7.0	8.0	9.8	5.2	6.4	7.2	5.6	6.1
15	9.0	8.4	8.6	9.4	6.2	7.4	9.2	5.5	6.5	8.3	5.6	6.3
16	8.6	8.5	8.6	8.8	5.4	6.7	11.1	5.8	7.0	8.2	5.6	6.3
17	8.8	8.6	8.7	8.8	5.7	6.4	10.5	6.2	7.2	8.7	5.4	6.2
18	8.8	8.5	8.7	7.4	5.7	6.6	11.9	5.8	7.3	9.3	5.3	6.4
19	8.5	8.2	8.4	7.6	6.7	7.1	11.1	5.4	6.9	9.1	5.1	6.3
20	8.4	8.2	8.3	7.8	6.9	7.4	11.8	4.9	6.4	8.5	5.1	6.3
21	9.1	8.1	8.5	8.1	7.2	7.6	9.4	5.1	6.2	8.3	5.0	6.1
22	8.3	7.8	8.0	8.1	7.1	7.7	6.6	4.8	5.3	6.8	4.8	5.5
23	8.4	7.5	7.9	7.7	7.2	7.5	11.3	4.6	6.2	6.4	4.8	5.3
24	7.8	7.4	7.6	7.6	6.8	7.1	11.9	4.7	6.5	5.8	4.8	5.1
25	7.9	7.3	7.6	7.6	6.7	7.1	11.3	5.1	6.5	5.6	4.7	5.1
26	7.6	6.9	7.3	7.8	7.3	7.6	7.9	4.8	5.8	5.6	4.7	5.0
27	7.2	6.6	6.9	8.2	7.7	8.0	9.5	5.3	6.3	5.3	4.6	4.9
28	7.0	6.6	6.8	8.8	8.2	8.5	10.0	5.1	6.3	6.0	4.5	4.9
29	7.6	6.9	7.2	8.7	8.0	8.3	8.6	5.1	5.8	4.8	3.4	4.3
30	---	---	---	8.4	7.8	8.1	10.9	5.0	6.3	4.0	3.3	3.6
31	---	---	---	8.1	7.3	7.7	---	---	---	4.1	3.7	3.9
MONTH	11.1	6.6	8.6	11.7	4.7	7.7	11.9	4.6	6.8	9.3	3.3	5.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4.3	3.7	4.1	6.1	4.8	5.2	6.6	5.3	5.8	4.2	3.9	4.0
2	6.0	3.8	4.5	7.5	4.9	5.8	8.0	5.2	6.2	4.2	3.2	3.7
3	5.5	4.4	4.8	7.5	4.8	6.0	8.4	5.3	6.4	3.5	2.9	3.2
4	5.8	4.3	4.8	8.3	4.8	6.2	7.5	5.3	6.1	3.7	3.3	3.4
5	5.3	4.0	4.6	7.6	4.9	5.9	7.9	5.6	6.4	3.8	3.6	3.6
6	6.1	4.9	5.4	6.8	5.0	5.8	7.9	5.7	6.6	4.0	3.8	3.9
7	5.6	5.0	5.3	6.9	5.0	5.8	7.6	5.9	6.6	4.1	3.9	3.9
8	6.1	4.9	5.3	7.3	5.0	5.8	7.4	5.9	6.6	3.9	3.3	3.6
9	5.5	4.9	5.2	7.4	5.2	6.0	7.7	6.0	6.8	3.4	2.8	3.1
10	5.7	4.9	5.3	6.7	5.2	5.8	8.1	6.2	7.2	3.5	3.0	3.3
11	5.8	5.3	5.4	7.7	5.1	6.1	8.6	6.7	7.4	3.1	2.8	3.0
12	6.1	5.1	5.5	7.5	5.5	6.4	7.6	6.9	7.2	---	---	---
13	6.5	5.2	5.6	8.7	5.4	6.5	6.9	5.9	6.3	---	---	---
14	6.4	5.1	5.6	7.3	5.7	6.4	6.2	5.4	5.8	---	---	---
15	6.1	4.9	5.4	7.1	5.8	6.4	6.2	5.1	5.6	---	---	---
16	6.3	4.7	5.4	7.7	6.3	6.8	6.6	5.2	5.8	---	---	---
17	7.6	4.8	5.7	7.9	6.2	6.8	6.2	4.7	5.4	---	---	---
18	7.3	4.9	5.9	7.1	5.2	6.1	6.0	5.0	5.5	---	---	---
19	7.1	4.8	5.7	8.0	4.9	6.2	5.6	4.8	5.2	---	---	---
20	7.4	4.8	5.8	6.4	4.4	5.2	5.3	4.2	4.8	---	---	---
21	6.8	4.9	5.6	7.0	4.0	5.1	5.3	4.9	5.1	---	---	---
22	6.6	5.0	5.6	7.8	4.4	5.8	5.0	4.0	4.8	---	---	---
23	5.6	4.8	5.2	6.3	4.5	5.1	4.5	3.7	4.0	---	---	---
24	5.4	4.6	5.0	5.3	3.5	4.5	5.2	3.8	4.4	---	---	---
25	5.1	4.4	4.8	6.2	4.2	5.2	5.4	4.2	5.1	---	---	---
26	6.0	4.9	5.3	7.0	5.4	6.1	5.2	4.6	5.0	---	---	---
27	5.5	4.8	5.2	6.5	5.7	6.0	4.9	4.2	4.6	---	---	---
28	4.8	4.2	4.4	5.7	3.9	4.7	4.4	4.2	4.3	---	---	---
29	5.0	4.5	4.8	5.2	4.9	5.1	4.3	3.9	4.2	---	---	---
30	5.2	4.8	5.0	5.7	5.0	5.4	4.5	3.6	4.2	---	---	---
31	---	---	---	6.0	5.4	5.6	4.2	4.0	4.1	---	---	---
MONTH	7.6	3.7	5.2	8.7	3.5	5.8	8.6	3.6	5.6	4.2	2.8	3.5
YEAR	11.9	2.8	6.9									

08185000 CIBOLO CREEK AT SELMA, TX

LOCATION.--Lat 29°35'38", long 98°18'39", Bexar-Guadalupe County line, Hydrologic Unit 12100304, on right bank 0.6 mi downstream from Missouri-Kansas-Texas Railroad Co. bridge and 0.9 mi upstream from bridge on Interstate Highway 35 at Selma.

DRAINAGE AREA.--274 mi².

PERIOD OF RECORD.--March 1946 to current year. Figures for water year 1960 in WSP 1813 are in error and should be disregarded.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 728.34 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. One known diversion above station. Considerable flow of Cibolo Creek enters the Edwards and associated limestones in the Balcones Fault Zone above this station. Rain gage at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 26 ft occurred in 1889, from information by local residents. Maximum stage since at least 1869, that of July 16, 1973.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
2	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
3	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
4	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
5	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
6	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
7	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
8	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
9	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
10	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
11	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
12	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
13	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00
14	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	e.00	e.00
15	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	e.00	e.00
16	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	e.00	e.00
17	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	e.00	e.00
18	.00	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	e.00	e.00
19	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00	e.00	e.00
20	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00	e.00	e.00
21	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00	e.00	e.00
22	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00	e.00	e.00
23	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00	e.00	e.00
24	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00	e.00	e.82
25	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00	e.00	e9.7
26	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00	.00
27	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00	.00
28	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00	.00
29	.00	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	e.00	.00
30	.00	.00	.00	.00	---	.00	e.00	e.00	.00	.00	e.00	.00
31	.00	---	.00	.00	---	.00	---	e.00	---	.00	e.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.52
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.35
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.7
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1996, BY WATER YEAR (WY)

MEAN	12.3	2.73	26.7	9.05	16.5	13.2	11.1	48.0	47.6	21.4	3.74	15.0
MAX	304	44.7	1143	371	646	483	217	622	1010	1044	80.6	370
(WY)	1974	1947	1992	1968	1992	1992	1957	1972	1987	1973	1971	1952
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1948	1948	1948	1948	1947	1947	1946	1947	1947	1946	1946	1947

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1946 - 1996	
ANNUAL TOTAL	11.68		10.52			
ANNUAL MEAN	.032		.029		19.0	
HIGHEST ANNUAL MEAN					257	1992
LOWEST ANNUAL MEAN					.000	1956
HIGHEST DAILY MEAN	11	Jun 29	9.7	Sep 25	22500	Jul 16 1973
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Apr 1 1946
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Apr 1 1946
INSTANTANEOUS PEAK FLOW			93	Sep 24	65000	Jul 16 1973
INSTANTANEOUS PEAK STAGE			3.78	Sep 24	26.20	Jul 16 1973
ANNUAL RUNOFF (AC-FT)	23		21		13740	
10 PERCENT EXCEEDS	.00		.00		.00	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated

08186000 CIBOLO CREEK NEAR FALLS CITY, TX

LOCATION.--Lat 29°00'50", long 97°55'48", Karnes County, Hydrologic Unit 12100304, at right downstream abutment of bridge on State Highway 123, 5.7 mi northeast of Falls City, and 10.4 mi upstream from mouth.

DRAINAGE AREA.--827 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 733: 1931. WSP 1058: 1935. WSP 1562: 1931(M), 1933. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 264.28 ft above sea level. Nov. 4, 1930, to Aug. 4, 1940, water-stage recorder at site 1,600 ft upstream at datum 0.56 ft higher. Aug. 5 to Sept. 13, 1940, nonrecording gage at site 150 ft to the left at same datum. Sept. 14, 1940, to Mar. 15, 1990, water-stage recorder at site 150 ft to the left at same datum. Mar. 16, 1990, to July 15, 1993, water-stage recorder at site 50 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. There are several diversions for irrigation above station. Much of the base flow is effluent from the Carrizo Sands in the vicinity of Sutherland Springs. Flow is affected at times by discharge from the flood-detention pools of ten floodwater-retarding structures with a combined detention capacity of 16,620 acre-ft. These structures control runoff from 62.9 mi². Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 35 ft occurred in October 1913 (discharge, about 35,000 ft³/s). Maximum stage since at least 1890, that of Sept. 28, 1973.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	21	26	27	26	25	25	15	14	11	6.4	37
2	30	21	27	27	26	24	24	17	11	11	5.4	21
3	28	21	27	26	26	27	24	19	13	11	6.0	24
4	55	21	27	26	26	32	24	18	24	10	6.5	27
5	37	21	27	27	26	29	23	18	17	9.9	7.1	24
6	29	21	26	26	26	28	23	17	14	8.7	6.9	21
7	25	22	27	26	27	27	23	17	15	7.3	5.1	19
8	24	21	26	26	28	25	23	17	14	6.4	3.9	331
9	23	21	26	26	28	24	22	16	13	6.0	5.8	66
10	23	23	25	26	28	24	22	16	13	6.7	7.0	51
11	23	22	25	26	28	24	22	15	15	6.8	5.9	22
12	22	22	25	26	27	25	22	13	14	7.1	6.4	18
13	22	21	26	26	26	25	20	13	12	6.7	7.2	17
14	21	21	26	26	25	26	18	12	11	7.0	5.8	16
15	20	21	27	26	25	27	18	12	9.7	8.1	7.7	49
16	20	22	27	26	24	26	16	12	9.8	8.5	11	42
17	20	30	33	27	23	26	14	11	8.9	7.6	9.3	29
18	20	31	38	27	23	25	15	8.6	8.7	7.6	7.2	111
19	20	27	31	26	23	23	17	7.7	7.5	7.4	8.4	278
20	20	27	31	26	22	21	17	11	6.7	6.7	9.1	133
21	19	29	28	26	22	21	16	9.5	6.9	6.1	10	69
22	20	27	30	26	23	22	17	10	6.6	6.2	11	29
23	19	26	29	26	24	22	18	7.3	80	4.7	11	21
24	18	26	27	26	24	22	15	7.5	73	5.7	13	70
25	17	25	26	26	23	22	14	6.4	14	5.4	50	252
26	17	25	26	26	22	21	14	5.0	11	6.1	53	55
27	19	25	26	26	22	22	14	8.0	11	5.8	33	86
28	19	25	27	25	23	24	14	6.1	16	5.8	81	55
29	19	24	26	25	24	24	17	5.2	13	5.6	36	54
30	21	25	26	25	---	25	16	4.8	11	6.7	65	43
31	21	---	26	26	---	25	---	9.1	---	7.1	63	---
TOTAL	721	714	850	808	720	763	567	364.2	493.8	226.7	564.1	2070
MEAN	23.3	23.8	27.4	26.1	24.8	24.6	18.9	11.7	16.5	7.31	18.2	69.0
MAX	55	31	38	27	28	32	25	19	80	11	81	331
MIN	17	21	25	25	22	21	14	4.8	6.6	4.7	3.9	16
AC-FT	1430	1420	1690	1600	1430	1510	1120	722	979	450	1120	4110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1996, BY WATER YEAR (WY)

MEAN	104	85.2	102	96.4	115	68.0	165	250	248	98.5	54.0	158
MAX	996	565	2156	1627	1756	860	1492	2230	2821	1357	909	1579
(WY)	1974	1941	1992	1968	1992	1992	1977	1972	1987	1942	1946	1973
MIN	8.49	8.08	9.99	10.3	9.64	7.04	5.23	4.59	1.74	1.96	2.40	5.41
(WY)	1932	1932	1955	1956	1956	1956	1971	1971	1967	1971	1956	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1931 - 1996	
ANNUAL TOTAL	19379		8861.8			
ANNUAL MEAN	53.1		24.2		128	
HIGHEST ANNUAL MEAN					717	1992
LOWEST ANNUAL MEAN					10.4	1956
HIGHEST DAILY MEAN	1190	Jun 30	331	Sep 8	27300	Sep 28 1973
LOWEST DAILY MEAN	17	Aug 20	3.9	Aug 8	.00	Jul 30 1956
ANNUAL SEVEN-DAY MINIMUM	18	Aug 20	5.6	Jul 23	.00	Aug 4 1956
INSTANTANEOUS PEAK FLOW			955	Sep 8	33600	Jul 6 1942
INSTANTANEOUS PEAK STAGE			5.96	Sep 8	35.44	Sep 28 1973
ANNUAL RUNOFF (AC-FT)	38440		17580		93030	
10 PERCENT EXCEEDS	63		30		124	
50 PERCENT EXCEEDS	31		22		26	
90 PERCENT EXCEEDS	20		7.0		9.5	

08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1961 to September 1996 (discontinued). Chemical and biochemical analyses: December 1969 to September 1996 (discontinued). Sediment analyses: 1960, November 1965 to May 1975.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to Sept. 1991.
WATER TEMPERATURE: October 1968 to Sept. 1991.

INSTRUMENTATION.--Beginning March 1981, specific conductance and water temperature are recorded continuously at this station. The water quality monitor was discontinued Sept. 30, 1991.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum specific conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1969-91): Maximum, 2,270 microsiemens May 20, 21, 1971; minimum, 115 microsiemens Dec. 22, 23, 1986.
WATER TEMPERATURE (water years 1969-91): Maximum, 34.0°C July 31, Aug. 8, 9, 1980; minimum, 0.0°C Dec. 25, 26, 1983, Dec. 23, 24, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT										
25...	1115	18	1170	8.3	18.5	8.2	87	330	120	99
FEB										
08...	1050	28	1310	8.3	18.0	12.5	132	330	130	96
MAY										
06...	1035	17	1340	8.1	25.0	7.2	90	340	130	100
AUG										
01...	1105	7.8	1550	8.1	29.0	6.4	--	350	160	100
14...	1345	5.0	1600	8.0	29.5	6.5	86	350	190	97

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT										
25...	19	110	3	9.0	200	190	120	0.30	6.8	679
FEB										
08...	22	130	3	8.1	210	210	150	0.30	3.2	748
MAY										
06...	23	140	3	11	210	230	170	0.40	15	818
AUG										
01...	25	180	4	11	190	290	200	0.50	15	940
14...	27	190	4	11	160	300	200	0.40	15	939

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)
OCT										
25...	0.640	--	<0.010	0.640	0.640	0.020	0.18	0.20	0.070	0.070
FEB										
08...	0.960	0.960	0.020	0.980	0.980	<0.015	--	0.30	<0.010	0.010
MAY										
06...	0.490	0.490	0.010	0.500	0.500	0.060	0.34	0.40	0.090	0.080
AUG										
01...	0.060	--	<0.010	0.060	0.060	0.050	0.35	0.40	0.060	0.070
14...	--	--	0.010	--	<0.050	0.030	0.27	0.30	0.050	0.050

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
OCT										
25...	0.21	--	--	--	--	--	--	--	--	--
FEB										
08...	0.03	<1	63	<0.50	<1.0	<5.0	<3.0	<10	11	<10
MAY										
06...	0.25	--	--	--	--	--	--	--	--	--
AUG										
01...	0.21	4	82	<0.50	<1.0	6.0	<3.0	<10	8.0	<10
14...	0.15	--	--	--	--	--	--	--	--	--

08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT										
25...	--	--	--	--	--	--	--	--	--	--
FEB										
08...	65	12	<0.1	<10	<10	1	<1.0	940	<6	10
MAY										
06...	--	--	--	--	--	--	--	--	--	--
AUG										
01...	8/	11	<0.1	<10	<10	<1	<1.0	1000	<6	33
14...	--	--	--	--	--	--	--	--	--	--

08188500 SAN ANTONIO RIVER AT GOLIAD, TX

LOCATION.--Lat 28°38'58", long 97°23'04", Goliad County, Hydrologic Unit 12100303, on right bank at upstream side of bridge on U.S. Highway 183, 1.2 mi southeast of courthouse in Goliad, 11.7 mi upstream from Manahuilla Creek, and 66.5 mi upstream from mouth.

DRAINAGE AREA.--3,921 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1924 to March 1929, February 1939 to current year.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 91.08 ft above sea level. Prior to Mar. 31, 1929, nonrecording gage at Texas and New Orleans Railroad Co. bridge 1.1 mi upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. There are many diversions and regulations above station (see station 08181800). Flow is affected at times by discharge from the flood-detention pools of 36 floodwater-retarding structures, with a combined detention capacity of 66,730 acre-ft. These structures control runoff from 213 mi² in the drainage area above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in October 1913 and June 15, 1935, reached about the same stage as flood in 1942. Maximum stage since about 1800 occurred in 1869 and was several feet higher than flood of Sept. 23, 1967. Maximum stage since 1869, that of Sept. 23, 1967. Flood of July 9, 1942, reached a stage of 44.9 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	352	213	293	315	231	230	244	188	275	289	187	1630
2	346	209	292	311	242	237	239	284	226	231	166	857
3	348	215	291	308	248	253	233	357	164	193	130	912
4	402	231	260	308	237	486	219	249	129	172	100	1050
5	397	246	245	301	238	345	224	216	185	149	86	571
6	446	246	253	304	242	290	226	201	225	122	83	374
7	341	237	258	304	244	265	214	197	175	117	86	345
8	287	222	261	301	242	256	228	190	153	108	81	441
9	270	215	258	300	250	247	245	181	135	103	78	571
10	263	224	250	299	254	257	293	181	131	108	76	1670
11	247	227	248	308	283	252	278	176	187	108	70	849
12	233	218	295	312	295	235	242	175	221	105	67	854
13	236	210	319	310	294	234	227	176	200	109	79	835
14	235	209	314	307	289	232	215	175	172	101	78	508
15	227	208	312	305	285	237	204	199	143	100	72	366
16	222	202	312	304	285	235	195	197	135	136	77	329
17	249	229	337	301	292	229	190	174	136	153	89	428
18	261	244	330	295	281	220	188	191	128	158	96	1050
19	256	254	882	301	246	222	184	181	106	150	89	847
20	235	306	526	304	221	223	178	149	87	151	84	766
21	221	493	389	303	218	217	167	136	107	134	94	427
22	216	369	398	300	220	225	166	127	96	130	155	608
23	218	298	355	268	221	249	166	121	98	130	161	437
24	217	272	331	253	227	251	165	123	101	108	130	321
25	209	268	330	247	225	257	161	143	395	103	134	299
26	207	248	341	249	224	245	163	118	779	99	212	1960
27	216	238	318	247	225	220	180	111	264	210	896	1010
28	212	270	309	246	218	216	168	112	190	278	641	1080
29	209	279	298	240	217	218	171	119	402	340	415	629
30	217	283	309	238	---	229	181	136	362	356	393	409
31	218	---	314	233	---	250	---	430	---	211	1590	---
TOTAL	8213	7583	10228	8922	7194	7762	6154	5713	6107	4962	6695	22433
MEAN	265	253	330	288	248	250	205	184	204	160	216	748
MAX	446	493	882	315	295	486	293	430	779	356	1590	1960
MIN	207	202	245	233	217	216	161	111	87	99	67	299
AC-FT	16290	15040	20290	17700	14270	15400	12210	11330	12110	9840	13280	44500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1996h, BY WATER YEAR (WY)

MEAN	762	592	533	574	691	523	755	1080	1158	595	393	924
MAX	7084	2574	4628	4309	7682	4379	4488	6169	15370	4723	1736	12050
(WY)	1974	1941	1992	1968	1992	1992	1992	1992	1987	1973	1978	1967
MIN	75.1	76.2	86.5	104	107	83.9	86.8	137	26.2	52.4	47.9	66.8
(WY)	1956	1956	1955	1956	1956	1956	1956	1971	1956	1956	1963	1954

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1924 - 1996h	
ANNUAL TOTAL	163096		101966			
ANNUAL MEAN	447		279		722	
HIGHEST ANNUAL MEAN					3289	1992
LOWEST ANNUAL MEAN					98.2	1956
HIGHEST DAILY MEAN	4350	Jul 2	1960	Sep 26	121000	Sep 23 1967
LOWEST DAILY MEAN	177	Aug 16	67	Aug 12	2.1	Jun 14 1956
ANNUAL SEVEN-DAY MINIMUM	183	Aug 10	74	Aug 10	5.0	Jun 12 1956
INSTANTANEOUS PEAK FLOW			2460	Sep 26	138000	Sep 23 1967
INSTANTANEOUS PEAK STAGE			13.09	Sep 26	53.70	Sep 23 1967
ANNUAL RUNOFF (AC-FT)	323500		202200		523200	
10 PERCENT EXCEEDS	636		402		1210	
50 PERCENT EXCEEDS	366		235		326	
90 PERCENT EXCEEDS	213		112		116	

h See PERIOD OF RECORD paragraph.

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1941 to December 1942, November 1944 to September 1946, September 1958 to September 13, 1996 (discontinued). Chemical and biochemical analyses: January 1968 to September 13, 1996 (discontinued). Pesticide analyses: January 1968 to May 1982. Sediment analyses: April 1959, October 1974 to August 1994.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1942 to September 1946, September 1958 to September 1994.
WATER TEMPERATURE: September 1958 to September 1994.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,580 microsiemens July 22, 1978; minimum daily, 138 microsiemens Oct. 27, 1960.
WATER TEMPERATURE: Maximum daily, 36.0°C June 5, 1969; minimum daily, 0.0°C on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
OCT 27...	1000	216	1190	8.2	23.5	6	55	7.8	92	--	--	330
FEB 14...	0810	285	1160	8.4	14.0	--	--	9.7	94	230	220	320
MAY 08...	1005	191	946	8.0	24.5	--	--	13.6	--	210	330	270
JUL 30...	1142	391	1170	8.1	31.5	--	--	6.6	--	350	450	310
AUG 15...	0845	99	1410	8.4	28.0	--	--	5.4	69	--	--	340
SEP 13...	1020	914	500	8.1	27.5	--	--	6.8	85	--	--	150

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 27...	120	95	22	110	3	9.1	210	120	140	0.40	14	683
FEB 14...	110	96	20	100	2	8.8	220	110	140	0.50	11	664
MAY 08...	88	78	17	86	2	9.6	180	100	120	0.50	16	559
JUL 30...	90	93	19	110	3	11	220	120	150	0.70	15	701
AUG 15...	110	100	22	140	3	11	230	140	200	0.60	19	807
SEP 13...	24	46	8.5	37	1	7.1	130	40	44	0.40	12	287

DATE	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	RESIDUE VOLATILE, SUSPENDED (MG/L)	RESIDUE FIXED NON FILTERABLE (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS DISSOLVED (MG/L AS P)
OCT 27...	95	30	65	8.98	8.98	0.020	9.00	9.00	0.020	0.38	0.40	1.50
FEB 14...	--	--	--	9.88	9.88	0.020	9.90	9.90	<0.015	--	0.40	1.40
MAY 08...	--	--	--	4.78	4.78	0.020	4.80	4.80	0.040	0.36	0.40	0.830
JUL 30...	--	--	--	9.95	9.95	0.050	10.0	10.0	0.070	0.53	0.60	1.10
AUG 15...	--	--	--	6.83	6.83	0.070	6.90	6.90	0.080	0.42	0.50	0.960
SEP 13...	--	--	--	3.28	3.28	0.020	3.30	3.30	<0.015	--	0.30	0.670

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT 27...	1.40	4.3	4.7	3	73	<0.50	<1.0	<5.0	<3.0	<10	<3.0
FEB 14...	1.30	4.0	--	--	--	--	--	--	--	--	--
MAY 08...	0.800	2.5	--	2	54	<0.50	<1.0	<5.0	<3.0	<10	<3.0
JUL 30...	1.20	3.7	--	4	100	<0.50	<1.0	<5.0	<3.0	<10	<3.0
AUG 15...	0.980	3.0	--	5	100	1.2	<1.0	<5.0	<3.0	<10	<3.0
SEP 13...	0.700	2.1	--	--	--	--	--	--	--	--	--

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 27...	<10	29	5.0	<0.1	20	<10	1	<1.0	1000	14	4.0
FEB 14...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	20	26	2.0	<0.1	<10	<10	1	<1.0	810	7	4.0
JUL 30...	<10	27	<1.0	<0.1	20	<10	<1	<1.0	890	13	12
AUG 15...	20	32	6.0	<0.1	<10	<10	2	<1.0	1100	13	<3.0
SEP 13...	--	--	--	--	--	--	--	--	--	--	--

08188600 GBRA CALHOUN CANAL PUMP STATION NEAR LONG MOTT, TX

LOCATION.--Lat 28°30'00", long 96°46'43", Calhoun County, Hydrologic Unit 12100204, at raw water pump station on Goff Bayou, 0.6 mi upstream from State Highway 185, and 1.3 mi northwest of Long Mott.

PERIOD OF RECORD.--March 1968 to February 1970 (monthly discharge only), March 1970 to current year.

GAGE.--Totalizing flow meters on rated pumps. March 1968 to Mar. 6, 1981, Parshall flume and deflection-vane recorder. Mar. 7, 1981, to Oct. 5, 1989, water-stage and velocity recorders with duplex water-stage recorder. Oct. 6, 1989, to June 30, 1992, non-recording gage. All at former site 0.5 mi downstream.

REMARKS.--No estimated daily discharges. Records good. Flow is diverted from Guadalupe River 550 ft upstream from Guadalupe River near Tivoli (station 08188800), and then through a system of canals, Hog Bayou, and Goff Bayou, a distance of 8.2 mi to the pumping station on Goff Bayou. Satellite telemeter at station.

COOPERATION.--Log of pumping station on Goff Bayou provided by the Guadalupe-Blanco River Authority.

AVERAGE DISCHARGE.--28 years (water years 1969-96), 89.7 ft^3/s (64,990 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 311 ft^3/s July 7, 1968; no flow at times in 1968-74 and 1977-96.

TOTAL
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	19	20	20	29	22	91	130	164	140	109	64
2	83	18	20	18	50	22	118	156	183	166	93	58
3	62	28	20	18	49	22	134	174	183	157	75	53
4	55	20	36	22	22	22	118	178	184	157	85	63
5	84	29	50	24	21	22	79	172	188	157	90	69
6	89	48	50	21	17	25	67	141	198	155	98	86
7	87	30	40	19	22	27	60	138	192	151	78	89
8	89	20	20	21	40	27	65	130	196	166	71	78
9	89	29	18	42	35	26	89	128	187	150	69	73
10	85	60	15	68	23	37	120	134	196	144	75	74
11	74	80	13	37	23	41	122	126	213	158	69	62
12	76	79	38	19	23	55	118	114	228	158	68	73
13	80	74	72	17	22	47	126	126	220	156	69	55
14	75	75	72	17	50	55	121	146	219	156	77	71
15	52	52	69	38	61	82	132	170	216	141	80	53
16	58	20	68	62	69	88	118	173	222	136	82	52
17	60	19	66	70	70	77	113	171	227	146	81	58
18	76	19	38	70	69	58	104	175	239	161	84	73
19	79	18	37	43	45	53	92	183	241	142	80	82
20	84	37	46	21	16	85	103	187	264	156	80	88
21	87	53	46	19	18	97	108	198	253	144	70	89
22	87	30	37	18	22	92	121	226	231	151	69	88
23	72	19	17	18	22	78	114	224	216	144	28	90
24	67	31	17	17	22	66	121	227	151	140	.00	89
25	63	44	17	16	22	66	154	214	85	127	18	66
26	65	21	16	48	42	70	167	208	75	135	33	65
27	67	20	37	69	48	84	156	201	102	147	43	80
28	74	19	31	68	48	119	137	208	112	130	59	86
29	73	22	21	68	33	128	91	195	121	136	56	85
30	61	21	20	41	---	92	97	186	126	124	51	84
31	31	---	20	19	---	66	---	181	---	115	38	---
TOTAL	2267	1054	1087	1068	1033	1851	3356	5320	5632	4546	2078.00	2196
MEAN	73.1	35.1	35.1	34.5	35.6	59.7	112	172	188	147	67.0	73.2
MAX	89	80	72	70	70	128	167	227	264	166	109	90
MIN	31	18	13	16	16	22	60	114	75	115	.00	52
AC-FT	4500	2090	2160	2120	2050	3670	6660	10550	11170	9020	4120	4360

CAL YR 1995 TOTAL 26199.00 MEAN 71.8 MAX 205 MIN .00 AC-FT 51970
WTR YR 1996 TOTAL 31488.00 MEAN 86.0 MAX 264 MIN .00 AC-FT 62460

08188800 GUADALUPE RIVER NEAR TIVOLI, TX

LOCATION.--Lat 28°30'20", long 96°53'04", Calhoun-Refugio County line, Hydrologic Unit 12100204, on right bank at diversion and saltwater barrier, one orifice located upstream and one downstream, 550 ft downstream from Calhoun County Irrigation Canal intake, 0.4 mi downstream from San Antonio River, 3.5 mi north of Tivoli, and at mile 10.2.

DRAINAGE AREA.--10,128 mi².

WATER-STAGE RECORDS

PERIOD OF RECORD.--September 1965 to current year.

REVISED RECORDS.--WRD TX-68-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 0.04 ft above sea level.

REMARKS.--Many small diversions above station. Some regulation by powerplants. Upstream regulation same as that for Guadalupe River at Cuero (station 08175800) and San Antonio River at Goliad (station 08188500).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height (upstream from barrier), 13.7 ft Sept. 22, 1967; minimum, 1.2 ft July 2, 1984, Jan. 25, 1990. Maximum gage height (downstream from barrier), 13.6 ft Sept. 22, 1967; minimum, 0.5 ft July 12, 14, 1967, Mar. 25, 1996. Maximum stage since at least 1936, that of Sept. 22, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1936 reached a stage of 11 ft, present site and datum. Levees along the Navigation Canal from San Antonio Bay to Victoria were built in 1961, thus decreasing the flood plain.

EXTREMES FOR CURRENT YEAR.--Maximum gage height (upstream from barrier), 7.5 ft Sept. 27, 28; minimum, 1.3 ft Mar. 20. Maximum gage height (downstream from barrier), 7.2 ft Sept. 27, 28; minimum, 0.5 ft Mar. 25.

GAGE HEIGHT, IN FEET, UPSTREAM AND DOWNSTREAM FROM SALTWATER BARRIER
WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
MAXIMUM VALUES

DAY	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	4.1	4.1	3.9	3.9	3.0	2.9	3.3	3.2	2.5	2.5	2.5	2.4
2	4.4	4.4	3.6	3.6	3.0	3.0	2.7	2.6	2.2	2.2	2.6	2.6
3	4.2	4.2	2.7	2.7	2.9	2.9	2.6	2.5	2.3	2.3	2.5	2.5
4	4.0	4.0	3.0	2.9	2.9	2.8	2.6	2.5	2.2	2.2	2.8	2.7
5	4.0	4.0	3.3	3.3	2.7	2.7	2.7	2.6	2.2	2.2	3.1	3.0
6	3.8	3.7	3.5	3.4	2.7	2.6	2.6	2.6	2.4	2.3	3.2	3.2
7	3.9	3.9	3.4	3.3	2.8	2.8	2.5	2.4	2.6	2.5	3.0	3.0
8	3.9	3.9	3.1	3.1	2.9	2.9	2.3	2.3	2.6	2.6	2.1	2.1
9	3.7	3.7	3.1	3.0	2.8	2.8	2.4	2.4	2.6	2.6	2.2	2.1
10	3.3	3.2	3.6	3.6	2.6	2.6	2.5	2.4	2.5	2.5	2.3	2.3
11	3.1	3.1	3.6	3.6	2.8	2.8	2.4	2.3	2.4	2.4	2.4	2.4
12	3.1	3.1	2.9	2.9	3.0	3.0	2.2	2.2	2.2	2.2	2.4	2.3
13	3.4	3.4	2.7	2.7	3.1	3.1	2.4	2.4	2.4	2.4	2.5	2.5
14	3.3	3.3	2.7	2.7	2.9	2.9	2.6	2.5	2.5	2.4	2.5	2.5
15	3.4	3.3	2.7	2.7	3.0	3.0	2.6	2.6	2.5	2.4	2.6	2.6
16	3.3	3.3	2.8	2.8	2.9	2.9	2.6	2.6	2.2	2.1	2.6	2.6
17	3.3	3.3	3.0	3.0	3.6	3.5	3.3	3.2	2.2	2.2	2.5	2.4
18	3.4	3.4	3.2	3.2	3.8	3.8	3.3	3.3	2.6	2.5	2.6	2.6
19	3.2	3.2	3.3	3.3	3.6	3.5	2.6	2.6	2.6	2.6	1.8	1.8
20	3.1	3.1	3.4	3.3	3.9	3.8	2.6	2.6	2.5	2.4	1.6	1.6
21	3.1	3.1	3.4	3.3	4.7	4.7	2.5	2.4	2.4	2.4	2.0	1.9
22	3.1	3.0	3.3	3.2	4.6	4.6	2.8	2.8	2.4	2.4	2.4	2.2
23	3.2	3.2	3.5	3.5	4.2	4.1	2.9	2.9	2.6	2.5	2.1	2.1
24	2.8	2.7	3.4	3.3	4.0	4.0	2.7	2.7	2.6	2.5	2.2	2.2
25	2.8	2.8	3.2	3.1	3.6	3.6	2.8	2.8	2.6	2.6	3.9	2.2
26	3.2	3.1	3.2	3.2	3.2	3.2	2.9	2.9	2.8	2.8	4.1	2.2
27	3.2	3.2	3.2	3.2	2.7	2.7	2.8	2.7	2.9	2.8	4.2	2.6
28	3.3	3.3	2.9	2.8	2.8	2.8	2.8	2.7	2.5	2.5	4.2	2.7
29	3.7	3.7	2.7	2.6	3.0	3.0	2.8	2.8	2.2	2.1	4.2	2.7
30	4.2	4.2	2.8	2.7	3.2	3.1	2.8	2.8	---	---	4.1	2.3
31	4.2	4.2	---	---	3.4	3.3	2.6	2.6	---	---	4.1	2.2
MAX	4.4	4.4	3.9	3.9	4.7	4.7	3.3	3.3	2.9	2.8	4.2	3.2
MIN	2.8	2.7	2.7	2.6	2.6	2.6	2.2	2.2	2.2	2.1	1.6	1.6

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

GAGE HEIGHT, IN FEET, UPSTREAM AND DOWNSTREAM FROM SALTWATER BARRIER
WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
MAXIMUM VALUES

DAY	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	4.1	2.2	4.2	2.5	4.0	2.8	4.0	2.4	4.0	2.4	5.9	5.7
2	4.2	2.3	4.1	2.6	4.1	2.6	4.0	2.3	4.0	2.2	6.5	6.4
3	4.2	2.7	4.2	2.8	4.0	2.6	4.0	2.2	4.0	2.2	6.5	6.4
4	4.2	2.8	4.2	2.8	4.0	2.6	4.0	2.0	4.0	2.2	6.2	6.0
5	4.2	2.5	4.2	2.8	4.1	2.7	4.0	2.2	4.0	2.3	6.1	5.9
6	4.1	2.3	4.1	2.7	4.0	2.5	4.0	2.1	4.0	2.2	6.1	5.9
7	4.1	2.3	4.2	2.7	4.0	2.6	4.0	2.1	4.0	2.3	5.1	5.0
8	4.1	2.3	4.2	2.8	4.0	1.6	4.0	2.2	4.0	2.3	3.6	3.4
9	4.2	2.6	4.2	2.8	4.0	1.7	4.0	2.2	4.0	2.2	4.5	4.3
10	4.2	2.7	4.2	3.0	4.0	1.9	4.0	2.2	4.0	2.2	6.0	5.8
11	4.2	3.0	4.1	3.0	4.0	2.0	4.0	2.2	4.0	2.1	7.1	6.9
12	4.2	3.3	4.1	2.4	4.0	2.1	3.9	1.7	4.0	2.2	7.1	7.0
13	4.2	3.1	4.0	2.6	4.0	2.3	3.7	1.7	4.1	1.8	7.1	6.9
14	4.2	2.8	4.1	2.8	4.0	2.2	3.7	1.7	4.6	1.6	7.1	6.8
15	4.1	2.1	4.1	2.8	4.0	2.2	3.8	1.9	4.6	1.6	6.9	6.7
16	4.1	2.2	4.0	2.6	4.0	2.2	3.9	1.9	4.1	1.8	6.2	6.0
17	4.1	2.5	4.1	2.7	4.0	2.0	4.0	2.1	4.0	1.8	4.6	4.4
18	4.1	2.6	4.1	2.7	4.0	2.0	4.0	2.3	3.9	2.1	4.1	3.9
19	4.2	2.8	4.1	2.8	4.0	2.0	4.0	2.4	3.7	2.0	4.8	4.6
20	4.2	2.8	4.0	2.7	4.0	1.6	4.0	2.2	3.8	1.9	5.2	4.9
21	4.2	3.1	4.0	2.6	4.0	2.0	4.0	2.0	3.8	2.2	6.3	6.0
22	4.2	3.0	4.0	2.5	4.0	2.2	4.0	2.0	3.9	3.0	6.7	6.4
23	4.0	2.3	4.0	2.6	4.0	2.5	4.0	1.9	3.0	2.9	7.0	6.7
24	4.1	2.4	4.0	2.6	4.0	2.2	4.0	1.6	3.0	3.0	7.2	6.9
25	4.2	3.0	3.9	2.7	4.0	2.3	3.9	1.7	2.8	2.7	7.2	6.9
26	4.1	3.0	3.9	2.9	4.1	2.5	4.0	1.6	2.6	2.6	7.1	6.8
27	4.1	2.7	3.9	2.8	4.5	3.4	4.0	1.6	2.6	2.5	7.5	7.2
28	4.2	2.8	4.0	2.6	4.6	3.5	4.0	2.0	3.8	3.7	7.5	7.2
29	4.0	2.7	4.0	2.6	4.5	3.1	4.0	2.2	4.7	4.5	7.4	7.0
30	4.2	2.3	4.0	2.5	4.1	2.5	4.0	2.4	4.7	4.5	7.2	6.9
31	---	---	4.0	2.6	---	---	4.0	2.4	4.4	4.3	---	---
MAX	4.2	3.3	4.2	3.0	4.6	3.5	4.0	2.4	4.7	4.5	7.5	7.2
MIN	4.0	2.1	3.9	2.4	4.0	1.6	3.7	1.6	2.6	1.6	3.6	3.4

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1965 to current year. Chemical and biochemical analyses: January 1968 to September 1996 (discontinued). Pesticide analyses: October 1970 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1965 to October 1982.
WATER TEMPERATURES: August 1965 to October 1982.

INSTRUMENTATION.--From August 1965 to October 1982, a water-quality monitor continuously recorded conductance at this station.
From March 1981 to October 1982, a water-quality monitor continuously recorded water temperature at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,000 microsiemens June 1, 1971, Aug. 3, 1978; minimum daily, 159 microsiemens Apr. 28, 1980.
WATER TEMPERATURES (1965-69, 1981-82): Maximum daily, 32.0°C on many days during summer months; minimum daily, 8.0°C Jan. 15, 1968.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
OCT												
26...	1000	799	8.2	22.0	7.8	89	260	55	74	18	60	2
FEB												
13...	1235	847	8.3	15.5	9.6	95	260	49	76	18	67	2
APR												
11...	1315	808	8.2	21.5	8.2	92	260	38	73	18	70	2
JUN												
06...	0930	855	8.1	28.5	7.5	97	240	41	68	18	72	2
JUL												
23...	1415	1060	7.9	29.0	--	--	260	41	72	19	110	3
SEP												
13...	0900	298	7.6	27.0	5.6	70	91	0	29	4.5	19	0.9

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)
OCT											
26...	4.6	200	54	79	0.30	13	440	3.09	3.09	0.010	3.10
FEB											
13...	4.5	220	62	86	0.80	6.1	467	3.37	3.37	0.030	3.40
APR											
11...	4.9	220	64	93	0.40	12	483	3.48	3.48	0.020	3.50
JUN											
06...	5.5	200	63	92	0.50	18	480	3.98	3.98	0.020	4.00
JUL											
23...	6.6	220	90	140	0.50	18	588	--	--	--	--
SEP											
13...	5.7	130	16	19	0.20	13	192	1.16	1.16	0.040	1.20

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)
OCT											
26...	3.10	<0.015	--	<0.20	0.400	0.410	1.3	--	--	--	--
FEB											
13...	3.40	0.020	0.18	0.20	0.380	0.340	1.0	1	80	<0.50	<1.0
APR											
11...	3.50	0.040	0.16	0.20	0.510	0.450	1.4	--	--	--	--
JUN											
06...	4.00	0.050	0.35	0.40	0.530	0.530	1.6	3	90	<0.50	<1.0
JUL											
23...	--	--	--	--	--	--	--	6	120	<0.50	<1.0
SEP											
13...	1.20	<0.020	--	0.50	0.230	0.250	0.77	--	--	--	--

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)
OCT 26...	--	--	--	--	--	--	--	--	--	--	--
FEB 13...	<5.0	<3.0	<10	<3.0	<10	20	3.0	<0.1	<10	<10	<1
APR 11...	--	--	--	--	--	--	--	--	--	--	--
JUN 06...	<5.0	<3.0	<10	4.0	<10	19	4.0	<0.1	<10	<10	<1
JUL 23...	<5.0	<3.0	<10	4.0	<10	25	2.0	0.2	<10	<10	<1
SEP 13...	--	--	--	--	--	--	--	--	--	--	--

DATE	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	PCNS UNFILT RECOVER (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TECHNICAL TOTAL (UG/L)	P,P'-DDD UNFILT RECOVER (UG/L)	DDE, TOTAL (UG/L)	P,P'-DDT UNFILT RECOVER (UG/L)
OCT 26...	--	--	--	--	--	--	--	--	--	--	--
FEB 13...	<1.0	710	<6	3.0	--	--	--	--	--	--	--
APR 11...	--	--	--	--	--	--	--	--	--	--	--
JUN 06...	2.0	660	9	<3.0	<0.100	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010
JUL 23...	<1.0	760	9	<3.0	<0.100	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010
SEP 13...	--	--	--	--	--	--	--	--	--	--	--

DATE	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	DISULFOTON UNFILT RECOVER (UG/L)	ENDOSULFAN, I TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
OCT 26...	--	--	--	--	--	--	--	--	--	--	--
FEB 13...	--	--	--	--	--	--	--	--	--	--	--
APR 11...	--	--	--	--	--	--	--	--	--	--	--
JUN 06...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
JUL 23...	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
SEP 13...	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL PARATHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
OCT 26...	--	--	--	--	--	--	--	--	--	--	--
FEB 13...	--	--	--	--	--	--	--	--	--	--	--
APR 11...	--	--	--	--	--	--	--	--	--	--	--
JUN 06...	<0.010	<0.010	<0.010	<0.100	<0.010	<0.010	<1.00	<0.010	0.020	<0.010	<0.010
JUL 23...	<0.010	<0.010	<0.010	<0.100	<0.010	<0.010	<1.00	<0.010	<0.010	<0.010	<0.010
SEP 13...	--	--	--	--	--	--	--	--	--	--	--

08189200 COPANO CREEK NEAR REFUGIO, TX

LOCATION.--Lat 28°18'12", long 97°06'44", Refugio County, Hydrologic Unit 12100405, on right bank at downstream end of bridge on Farm Road 774, 3.6 mi upstream from Alameda Creek, 8.1 mi east of Refugio, and 11.9 mi upstream from mouth.

DRAINAGE AREA.--87.8 mi².

PERIOD OF RECORD.--June 1970 to current year.
Water-quality records.--Chemical and biochemical analyses: July 1970 to December 1988. Pesticide analyses: July 1970 to July 1981.

GAGE.--Water-stage recorder. Datum of gage is 17.25 ft above sea level.

REMARKS.--Records good. There are no known diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1921, 22 ft in September 1967, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.1	.00	.00	.00	.00	.00	36	.00	4.3
2	.00	.00	.00	.79	.00	.00	.00	.00	.00	e20	.00	7.6
3	.00	.00	.00	.55	.00	.00	.00	.00	.00	e11	.00	5.2
4	.00	.00	.00	.36	.00	.00	.00	.00	.00	e6.0	.00	5.1
5	.00	.00	.00	.20	.00	.00	.00	.00	.00	e4.0	.00	2.2
6	.00	.00	.00	.08	.00	.00	.00	.00	.00	e2.5	.00	2.4
7	.00	.00	.00	.01	.00	.00	.00	.00	.00	e1.8	.00	2.9
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	e1.0	.00	3.4
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.10	.00	42
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	97
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	133
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	92
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	43
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	28
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	11
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.9
17	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.1
18	.00	1.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.4
19	.00	2.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.3
20	.00	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	11
21	.00	.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	15
22	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.00	11
23	.00	.00	.00	.00	.00	.00	.00	.00	.50	.00	.00	6.0
24	.00	.00	.00	.00	.00	.00	.00	.00	10	.00	.00	3.5
25	.00	.00	.69	.00	.00	.00	.00	.00	6.8	.00	.00	2.2
26	.00	.00	2.2	.00	.00	.00	.00	.00	11	.00	.00	1.5
27	.00	.00	2.5	.00	.00	.00	.00	.00	83	.00	.00	1.0
28	.00	.00	2.5	.00	.00	.00	.00	.00	149	.00	.27	.72
29	.00	.00	2.1	.00	.00	.00	.00	.00	112	.00	.78	.39
30	.00	.00	1.7	.00	---	.00	.00	.00	62	.00	1.9	.17
31	.00	---	1.4	.00	---	.00	---	.00	---	.00	1.9	---
TOTAL	0.00	4.99	13.09	3.09	0.00	0.00	0.00	0.00	434.30	82.40	4.85	557.28
MEAN	.000	.17	.42	.10	.000	.000	.000	.000	14.5	2.66	.16	18.6
MAX	.00	2.1	2.5	1.1	.00	.00	.00	.00	149	36	1.9	133
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17
AC-FT	.00	9.9	26	6.1	.00	.00	.00	.00	861	163	9.6	1110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1996, BY WATER YEAR (WY)

MEAN	52.2	41.4	24.3	24.9	39.8	22.1	24.8	66.7	74.2	45.7	2.55	90.5
MAX	551	589	240	189	459	168	229	508	499	416	16.6	1028
(WY)	1984	1982	1992	1979	1992	1992	1992	1981	1981	1990	1973	1971
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1978	1989	1971	1983	1971	1971	1971	1971	1971	1971	1974	1977

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1970 - 1996	
ANNUAL TOTAL	4891.62		1100.00			
ANNUAL MEAN	13.4		3.01		42.5	
HIGHEST ANNUAL MEAN					138	1992
LOWEST ANNUAL MEAN					.52	1989
HIGHEST DAILY MEAN	437	May 31	149	Jun 28	5960	Sep 12 1971
LOWEST DAILY MEAN	.00	Jan 21	.00	Oct 1	.00	Aug 14 1970
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 21	.00	Oct 1	.00	Aug 14 1970
INSTANTANEOUS PEAK FLOW			159	Jun 28	6300	Sep 12 1971
INSTANTANEOUS PEAK STAGE			6.28	Jun 28	21.00	Sep 12 1971
ANNUAL RUNOFF (AC-FT)	9700		2180		30780	
10 PERCENT EXCEEDS	12		2.5		63	
50 PERCENT EXCEEDS	.00		.00		.06	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated

08189500 MISSION RIVER AT REFUGIO, TX

LOCATION.--Lat 28°17'30", long 97°16'44", Refugio County, Hydrologic Unit 12100406, on left bank at upstream side of upstream bridge of two bridges on U.S. Highway 77, 560 ft upstream from Missouri Pacific Railroad Co. bridge, and 0.2 mi southwest of Refugio.

DRAINAGE AREA.--690 mi².

PERIOD OF RECORD.--July 1939 to current year.
Water-quality records: Chemical analyses: September 1961 to August 1993. Chemical and biochemical analyses: January 1968 to August 1993. Pesticide analyses: October 1970 to April 1979. Sediment analyses: January 1978 to August 1993.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.00 ft above sea level. Prior to Nov. 25, 1958, nonrecording gage at site 59 ft downstream at same datum. Nov. 26, 1958, to Apr. 18, 1963, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. There are several small diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in August 1914 and May 17, 1938, reached a stage of 32.3 ft, from information by local residents. Maximum stage since about 1899, that of Sept. 12, 1971.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 27	0900	3,650	20.12				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	3.1	3.7	6.3	5.0	5.2	4.2	3.1	.63	62	3.8	20
2	5.1	3.0	3.6	6.1	5.2	5.2	3.8	3.0	.70	36	3.8	48
3	3.5	3.1	3.6	6.1	5.1	4.9	3.8	3.2	.92	27	3.4	21
4	3.6	4.5	3.6	6.1	4.9	5.0	3.7	3.3	1.3	23	3.1	16
5	3.1	3.8	3.6	6.1	4.9	5.2	5.6	3.0	1.4	20	3.1	18
6	2.9	3.2	3.6	6.1	5.0	5.2	5.9	2.8	1.4	18	2.9	15
7	2.5	3.1	3.6	6.1	5.2	4.7	4.9	2.4	1.4	17	4.6	45
8	2.5	2.9	3.7	5.9	5.2	4.7	4.7	2.2	1.2	15	8.6	60
9	2.3	2.9	3.7	6.0	5.2	4.6	4.9	2.3	.81	13	3.8	24
10	2.3	2.9	3.6	6.1	5.3	4.5	4.9	2.2	.57	11	10	15
11	2.3	3.1	3.6	6.1	5.3	4.7	4.6	2.4	.42	10	3.6	13
12	2.1	3.1	3.6	6.1	5.2	4.9	4.6	6.4	.31	10	3.0	9.8
13	2.2	3.1	3.7	6.1	5.2	4.9	4.6	4.7	.24	9.3	2.7	8.4
14	2.6	3.1	3.6	5.8	5.2	e4.9	4.6	3.8	.16	8.9	2.6	7.7
15	2.4	3.1	3.6	5.8	5.2	e4.8	4.6	2.7	.10	8.5	2.6	7.2
16	2.1	3.1	3.8	5.8	4.9	e4.8	4.5	2.1	.04	7.6	2.7	6.5
17	2.1	7.3	97	5.9	4.9	e4.7	4.6	1.8	.04	7.5	2.4	6.2
18	2.2	6.9	311	5.8	4.9	e4.7	4.6	1.8	.04	7.5	2.2	6.9
19	2.3	5.0	190	5.8	4.9	e4.7	4.7	1.7	.01	6.7	2.1	12
20	2.5	4.7	51	5.8	4.9	e8.0	4.5	1.6	.01	6.4	2.1	25
21	2.3	4.6	24	5.8	4.9	e10	4.5	1.5	.01	6.1	3.7	28
22	2.4	4.4	19	5.8	4.9	e7.5	4.4	1.2	.01	5.8	4.1	18
23	1.9	4.6	18	5.8	4.9	e5.5	4.1	1.1	.50	5.8	4.9	13
24	1.9	4.1	15	5.5	4.9	e4.9	3.6	.98	26	5.5	61	11
25	1.9	3.8	12	5.5	4.9	e4.8	3.3	.87	317	5.3	138	9.6
26	1.9	3.8	9.7	5.5	4.9	e4.7	3.1	1.0	2800	4.9	47	59
27	1.9	3.9	8.3	5.5	4.9	4.6	3.1	1.1	3430	4.9	67	58
28	1.9	3.8	7.3	5.3	4.9	4.4	3.1	.87	1260	4.7	41	21
29	3.8	3.6	6.7	5.2	5.0	4.3	3.1	.87	259	4.6	36	14
30	8.2	3.7	6.8	5.6	---	4.3	3.1	.81	137	4.1	21	11
31	5.9	---	6.6	5.2	---	4.1	---	.65	---	3.8	16	---
TOTAL	88.1	115.3	840.6	180.6	145.8	159.4	127.7	67.45	8241.22	379.9	512.8	627.3
MEAN	2.84	3.84	27.1	5.83	5.03	5.14	4.26	2.18	275	12.3	16.5	20.9
MAX	8.2	7.3	311	6.3	5.3	10	5.9	6.4	3430	62	138	60
MIN	1.9	2.9	3.6	5.2	4.9	4.1	3.1	.65	.01	3.8	2.1	6.2
AC-FT	175	229	1670	358	289	316	253	134	16350	754	1020	1240
CFSM	.00	.01	.04	.01	.01	.01	.01	.00	.40	.02	.02	.03
IN.	.00	.01	.05	.01	.01	.01	.01	.00	.44	.02	.03	.03

08189500 MISSION RIVER AT REFUGIO, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1996, BY WATER YEAR (WY)

MEAN	158	62.7	61.8	47.3	107	49.8	93.9	189	187	140	57.2	305
MAX	1882	1380	849	417	1178	377	851	1387	1848	2135	1076	7646
(WY)	1974	1982	1992	1992	1958	1992	1992	1972	1973	1990	1942	1967
MIN	.051	.63	.62	.66	.66	2.20	1.90	.46	.65	.40	.096	.027
(WY)	1990	1990	1990	1990	1990	1989	1940	1989	1990	1989	1989	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1939 - 1996	
ANNUAL TOTAL	8826.4		11486.17			
ANNUAL MEAN	24.2		31.4		122	
HIGHEST ANNUAL MEAN					647	1967
LOWEST ANNUAL MEAN					1.74	1989
HIGHEST DAILY MEAN	2010	Apr 5	3430	Jun 27	78800	Sep 22 1967
LOWEST DAILY MEAN	1.9	Oct 23	.01	Jun 19	.00	Sep 1 1989
ANNUAL SEVEN-DAY MINIMUM	2.0	Oct 22	.02	Jun 16	.00	Aug 30 1989
INSTANTANEOUS PEAK FLOW			3650	Jun 27	79000	Sep 12 1971
INSTANTANEOUS PEAK STAGE			20.12	Jun 27	38.25	Sep 12 1971
ANNUAL RUNOFF (AC-FT)	17510		22780		88220	
ANNUAL RUNOFF (CFSM)	.035		.045		.18	
ANNUAL RUNOFF (INCHES)	.48		.62		2.40	
10 PERCENT EXCEEDS	20		18		91	
50 PERCENT EXCEEDS	7.5		4.7		11	
90 PERCENT EXCEEDS	3.1		1.8		2.2	

e Estimated

08189700 ARANSAS RIVER NEAR SKIDMORE, TX

LOCATION.--Lat 28°16'56", long 97°37'14", Bee County, Hydrologic Unit 12100407, on right bank 160 ft downstream from centerline of county road bridge, 3.8 mi downstream from confluence of West Aransas and Poesta Creeks, and 4.4 mi northeast of Skidmore.

DRAINAGE AREA.--247 mi².

PERIOD OF RECORD.--March 1964 to current year.
Water-quality records.--Chemical analyses: October 1965 to September 1966. Sediment records: February 1966 to September 1975.

GAGE.--Water-stage recorder. Datum of gage is 72.37 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. The city of Beeville discharges wastewater effluent into the river via Poesta Creek 3.8 mi upstream. There are no known diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of September 1954 reached a stage of 33 ft (discharge, 19,600 ft³/s), from information by local resident. Maximum stage since at least 1914, that of Sept. 22, 1967.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Aug. 27	0600	751	10.58				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	6.4	4.0	4.0	4.4	3.7	3.9	2.1	2.5	3.3	1.2	21
2	2.6	4.4	4.0	4.0	4.4	4.1	3.7	2.3	3.2	2.8	1.2	15
3	2.7	3.6	4.1	3.3	4.4	4.3	3.7	2.7	14	2.4	1.2	8.3
4	2.7	3.7	4.1	3.3	4.3	4.5	4.1	2.7	12	2.2	1.1	6.5
5	2.9	5.8	4.1	3.7	4.5	4.4	4.6	2.7	5.3	1.9	.93	5.7
6	2.5	7.6	4.2	4.0	4.7	4.7	4.6	2.6	3.5	1.9	.90	5.3
7	2.5	4.7	4.0	3.8	5.4	4.3	4.4	2.6	2.8	1.9	1.0	4.7
8	3.0	3.9	4.0	3.8	5.3	3.6	4.2	2.6	2.7	1.8	1.1	4.7
9	3.0	3.8	4.0	3.8	5.1	3.5	4.0	2.6	2.7	1.7	1.5	115
10	3.1	3.8	3.8	4.1	4.9	3.9	3.7	2.5	2.5	1.7	1.7	27
11	3.3	3.7	3.7	4.1	4.9	3.9	3.5	2.5	2.1	1.7	1.8	12
12	3.7	3.5	3.9	4.0	4.5	3.9	3.5	2.3	2.2	1.4	1.7	7.2
13	4.7	3.3	4.2	4.0	4.5	4.2	3.3	2.3	2.2	1.3	1.5	5.7
14	5.0	3.3	4.4	4.0	4.4	4.4	3.3	2.1	2.3	1.2	1.2	4.8
15	3.6	3.5	4.4	4.0	4.6	4.6	2.7	2.1	2.5	1.2	1.8	4.2
16	3.3	3.5	4.6	4.6	4.4	4.5	2.5	3.1	2.5	1.2	50	3.9
17	3.0	5.1	99	4.7	4.2	5.2	2.7	3.6	2.5	1.1	22	4.8
18	3.2	12	45	4.7	4.4	4.5	2.6	2.5	2.2	1.2	9.7	9.1
19	3.7	9.8	11	4.3	4.4	3.9	2.7	2.3	2.1	.99	4.8	5.8
20	3.9	6.1	5.8	4.3	4.1	3.8	2.7	2.8	2.2	.99	11	5.2
21	3.3	4.8	4.7	4.5	4.3	3.8	2.7	2.4	2.5	.99	14	5.0
22	3.0	4.7	4.9	4.6	4.2	4.0	2.6	2.0	2.5	.99	7.2	4.0
23	3.0	4.7	6.3	4.9	4.2	4.5	2.7	1.9	7.0	.99	5.9	3.3
24	3.2	4.4	5.8	4.8	4.0	4.8	2.5	1.7	31	.99	28	3.1
25	3.2	4.5	4.3	4.4	3.9	4.8	2.4	1.8	19	.99	28	5.8
26	3.3	4.2	3.7	4.5	3.6	4.6	2.6	2.2	52	1.2	207	25
27	3.5	4.1	3.8	4.5	3.8	4.6	2.7	1.9	17	1.4	367	21
28	3.6	4.3	3.8	4.5	4.0	4.6	2.6	1.7	7.1	1.2	61	8.0
29	4.1	4.0	3.7	4.8	3.8	4.3	2.6	1.8	4.6	1.2	34	4.7
30	8.9	4.0	3.9	5.0	---	4.4	2.2	1.9	3.5	1.2	21	3.8
31	14	---	4.2	5.1	---	4.6	---	1.9	---	1.1	13	---
TOTAL	118.1	145.2	275.4	132.1	127.6	132.9	96.0	72.2	220.2	46.13	903.43	359.6
MEAN	3.81	4.84	8.88	4.26	4.40	4.29	3.20	2.33	7.34	1.49	29.1	12.0
MAX	14	12	99	5.1	5.4	5.2	4.6	3.6	52	3.3	367	115
MIN	2.5	3.3	3.7	3.3	3.6	3.5	2.2	1.7	2.1	.99	.90	3.1
AC-FT	234	288	546	262	253	264	190	143	437	91	1790	713

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1996, BY WATER YEAR (WY)

MEAN	30.8	7.76	19.4	7.85	14.7	13.7	27.1	58.1	53.5	30.0	12.7	143
MAX	318	39.0	327	38.9	119	117	255	349	512	451	176	2356
(WY)	1974	1982	1992	1992	1969	1992	1992	1972	1973	1990	1980	1967
MIN	.000	.17	.72	1.05	1.10	.55	.31	1.04	.026	.031	.000	.000
(WY)	1990	1965	1965	1971	1967	1966	1967	1989	1967	1986	1965	1965

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1964 - 1996	
ANNUAL TOTAL	2850.2		2628.86			
ANNUAL MEAN	7.81		7.18		35.5	
HIGHEST ANNUAL MEAN					199	1967
LOWEST ANNUAL MEAN					3.15	1986
HIGHEST DAILY MEAN	477	Apr 4	367	Aug 27	49300	Sep 22 1967
LOWEST DAILY MEAN	2.5	Jul 25	.90	Aug 6	.00	Jun 24 1964
ANNUAL SEVEN-DAY MINIMUM	2.6	Jul 22	.99	Jul 19	.00	Aug 16 1964
INSTANTANEOUS PEAK FLOW			751	Aug 27	82800	Sep 22 1967
INSTANTANEOUS PEAK STAGE			10.58	Aug 27	42.22	Sep 22 1967
ANNUAL RUNOFF (AC-FT)	5650		5210		25730	
10 PERCENT EXCEEDS	8.5		7.7		15	
50 PERCENT EXCEEDS	4.4		3.9		3.9	
90 PERCENT EXCEEDS	3.0		1.7		.60	

08190000 NUECES RIVER AT LAGUNA, TX

LOCATION.--Lat 29°25'42", long 99°59'49", Uvalde County, Hydrologic Unit 12110101, on right bank 0.5 mi downstream from Sycamore Creek, 1.0 mi northeast of Laguna, and at mile 370.8.

DRAINAGE AREA.--737 mi².

PERIOD OF RECORD.--October 1923 to current year.
Water-quality records.--Chemical analyses: May 1949 to June 1952, September 1964 to September 1993. Chemical, biochemical, and pesticide analyses: February 1970 to September 1993. Sediment analyses: January 1966.

REVISED RECORDS.--WSP 1562: 1930, 1931(M), 1932, 1939. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,119.72 ft above sea level. Prior to Jan. 26, 1925, nonrecording gage at site 2 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. There are many small diversions above station for irrigation. Rain gage at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1913 reached a stage of about 29 ft (discharge, 210,000 ft³/s); flood of Sept. 21, 1923, reached a stage of about 26.5 ft (discharge, 160,000 ft³/s); from information by local residents. Maximum stage since at least 1866, that of Sept. 24, 1955.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 15	1430	14,200	11.00	Sept. 26	2100	1,300	4.54
Sept. 25	1200	1,090	4.31				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	99	85	68	58	54	51	41	30	25	22	33
2	137	88	85	67	59	55	51	41	28	24	22	28
3	133	84	85	66	58	55	51	42	27	23	22	25
4	129	82	84	67	58	55	51	41	26	23	21	27
5	125	80	83	66	58	55	54	40	26	23	22	26
6	122	80	82	66	58	53	52	41	26	23	22	20
7	119	79	81	66	57	53	51	39	28	23	21	19
8	116	78	81	67	57	53	51	38	28	22	21	19
9	114	78	78	68	56	53	52	38	29	23	23	20
10	112	78	78	67	56	52	51	38	30	27	21	25
11	110	78	78	66	55	51	51	37	32	27	20	32
12	107	77	78	66	55	51	50	37	32	27	20	25
13	105	77	78	65	55	51	49	38	33	25	20	25
14	101	76	77	64	54	51	52	37	32	24	20	26
15	99	76	76	64	54	50	52	36	32	23	20	4570
16	97	76	75	64	54	50	52	35	31	22	19	1590
17	95	107	75	63	54	49	52	35	30	21	19	626
18	95	123	76	62	54	49	52	34	29	20	18	416
19	94	110	75	62	53	49	51	34	29	20	18	317
20	90	99	74	62	53	49	50	35	29	19	19	249
21	89	94	74	61	53	49	50	34	29	19	19	207
22	86	90	75	62	52	49	50	33	28	19	19	191
23	84	88	75	61	51	48	48	33	29	20	24	199
24	82	87	75	60	51	49	48	32	27	21	22	174
25	82	87	74	60	52	49	48	32	26	23	23	682
26	82	87	73	59	51	49	46	32	27	24	22	661
27	82	87	73	58	51	51	46	31	27	24	19	672
28	79	86	71	58	53	50	45	33	27	24	18	358
29	78	86	71	58	55	52	41	31	26	23	19	281
30	78	85	72	58	---	52	41	30	26	22	50	235
31	89	---	72	58	---	51	---	31	---	22	45	---
TOTAL	3154	2602	2389	1959	1585	1587	1489	1109	859	705	690	11778
MEAN	102	86.7	77.1	63.2	54.7	51.2	49.6	35.8	28.6	22.7	22.3	393
MAX	143	123	85	68	59	55	54	42	33	27	50	4570
MIN	78	76	71	58	51	48	41	30	26	19	18	19
AC-FT	6260	5160	4740	3890	3140	3150	2950	2200	1700	1400	1370	23360
CFSM	.14	.12	.10	.09	.07	.07	.07	.05	.04	.03	.03	.53
IN.	.16	.13	.12	.10	.08	.08	.08	.06	.04	.04	.03	.59

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1996, BY WATER YEAR (WY)

MEAN	210	120	116	105	115	105	109	156	244	161	142	246
MAX	2030	544	894	610	1160	867	766	868	5407	1580	2500	2668
(WY)	1974	1924	1992	1992	1949	1992	1977	1935	1935	1939	1971	1955
MIN	7.39	5.42	5.58	5.46	5.10	7.04	23.7	18.2	12.2	8.11	6.99	8.60
(WY)	1953	1957	1957	1957	1957	1957	1935	1953	1953	1953	1953	1956

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1924 - 1996	
ANNUAL TOTAL	33684		29906			
ANNUAL MEAN	92.3		81.7		152	
HIGHEST ANNUAL MEAN					611	1935
LOWEST ANNUAL MEAN					23.1	1953
HIGHEST DAILY MEAN	2200	Sep 22	4570	Sep 15	107000	Jun 14 1935
LOWEST DAILY MEAN	25	Sep 18	18	Aug 18	3.0	Feb 27 1957
ANNUAL SEVEN-DAY MINIMUM	28	Sep 13	19	Aug 16	3.2	Mar 10 1957
INSTANTANEOUS PEAK FLOW			14200	Sep 15	307000	Sep 24 1955
INSTANTANEOUS PEAK STAGE			11.00	Sep 15	32.70	Sep 24 1955
ANNUAL RUNOFF (AC-FT)	66810		59320		110300	
ANNUAL RUNOFF (CFSM)	.13		.11		.21	
ANNUAL RUNOFF (INCHES)	1.70		1.51		2.81	
10 PERCENT EXCEEDS	115		98		233	
50 PERCENT EXCEEDS	81		52		74	
90 PERCENT EXCEEDS	35		22		23	

08190500 WEST NUECES RIVER NEAR BRACKETTVILLE, TX

LOCATION.--Lat 29°28'21", long 100°14'10", Kinney County, Hydrologic Unit 12110102, at Wilson Ranch on Farm Road 3199, 1.3 mi upstream from Miguel Canyon, 16.0 mi northeast of Brackettville, and 40.2 mi upstream from mouth.

DRAINAGE AREA.--694 mi².

PERIOD OF RECORD.--September 1939 to September 1950, April 1956 to current year.

REVISED RECORDS.--WSP 1312: 1949(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,326.79 ft above sea level. Prior to Mar. 14, 1940, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. In ordinary years, a large part of streamflow is lost by seepage into the Balcones Fault Zone of the Edwards and associated limestones above station. No known diversion above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1879, about 40 ft June 14, 1935 (discharge, 550,000 ft³/s, based on slope-area measurements of 580,000 ft³/s at site 33 mi upstream from gage) and 536,000 ft³/s (at site 24 mi downstream from gage, present site and datum), from gage-height relation of 1935 and 1955 flood peaks at site 0.6 mi upstream. Flood in 1900 reached a stage about 34 ft, and flood of Sept. 24, 1955, reached a stage of 27.1 ft, from floodmark at present site (discharge, 150,000 ft³/s, by slope-area measurement).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 15	1230	11,900	12.26				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	.38	.22	.17	.13	.30	.07	.00	.00	.00	.00	.08
2	.64	.30	.22	.14	.18	.30	.06	.00	.00	.00	.00	.10
3	.65	.25	.22	.13	.19	.30	.06	.00	.00	.00	.00	.08
4	.57	.22	.22	.14	.19	.32	.07	.00	.00	.00	.00	.06
5	.51	.22	.22	.15	.19	.35	.09	.00	.00	.00	.00	.06
6	.42	.22	.22	.15	.20	.30	.10	.00	.00	.00	.00	.05
7	.45	.20	.22	.15	.24	.20	.10	.00	.00	.00	.00	.03
8	.40	.19	.22	.15	.26	.19	.10	.00	.00	.00	.00	.07
9	.40	.19	.21	.15	.26	.18	.10	.00	.00	.00	.00	.07
10	.40	.22	.19	.17	.26	.18	.09	.00	.00	.00	.00	.45
11	.43	.22	.19	.19	.23	.22	.08	.00	.00	.00	.00	.85
12	.43	.22	.19	.19	.22	.22	.07	.00	.00	.00	.00	.51
13	.35	.22	.19	.19	.22	.24	.06	.00	.00	.00	.00	.28
14	.35	.22	.20	.19	.22	.26	.06	.00	.00	.00	.00	.19
15	.35	.20	.22	.19	.22	.23	.04	.00	.00	.00	.00	3440
16	.40	.19	.22	.19	.22	.22	.04	.00	.00	.00	.00	710
17	.40	.48	.22	.20	.22	.20	.04	.00	.00	.00	.00	128
18	.39	.36	.24	.16	.19	.12	.04	.00	.00	.00	.00	64
19	.40	.23	.19	.13	.19	.10	.04	.00	.00	.00	.00	40
20	.35	.22	.19	.15	.19	.09	.04	.00	.00	.00	.00	24
21	.35	.22	.19	.15	.19	.08	.04	.00	.00	.00	.00	12
22	.32	.22	.22	.17	.19	.09	.04	.00	.00	.00	.00	6.1
23	.30	.20	.22	.18	.17	.10	.03	.00	.00	.00	.00	4.1
24	.30	.19	.22	.15	.15	.12	.01	.00	.00	.00	.00	3.2
25	.26	.19	.22	.15	.15	.13	.01	.00	.00	.00	.00	2.7
26	.26	.19	.22	.15	.19	.13	.01	.00	.00	.00	.00	2.3
27	.26	.19	.22	.15	.19	.13	.00	.00	.00	.00	.02	1.9
28	.26	.19	.22	.13	.21	.13	.00	.00	.00	.00	.17	1.6
29	.26	.20	.22	.13	.27	.13	.00	.00	.00	.00	.16	1.5
30	.24	.22	.22	.13	---	.10	.00	.00	.00	.00	.11	1.3
31	.23	---	.19	.13	---	.08	---	.00	---	.00	.08	---
TOTAL	11.93	6.96	6.57	4.90	5.93	5.74	1.49	0.00	0.00	0.00	0.54	4445.58
MEAN	.38	.23	.21	.16	.20	.19	.050	.000	.000	.000	.017	148
MAX	.65	.48	.24	.20	.27	.35	.10	.00	.00	.00	.17	3440
MIN	.23	.19	.19	.13	.13	.08	.00	.00	.00	.00	.00	.03
AC-FT	24	14	13	9.7	12	11	3.0	.00	.00	.00	1.1	8820

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1996h, BY WATER YEAR (WY)

MEAN	62.6	4.80	5.03	2.47	21.9	3.67	10.0	12.7	91.9	48.0	46.3	72.8
MAX	1113	76.5	164	68.4	978	60.2	238	266	1880	737	1308	2180
(WY)	1982	1959	1985	1985	1949	1979	1990	1957	1958	1976	1971	1964
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1941	1941	1940	1940	1940	1940	1942	1942	1942	1941	1940	1940

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1939 - 1996h	
ANNUAL TOTAL	231.56		4489.64			
ANNUAL MEAN	.63		12.3		32.2	
HIGHEST ANNUAL MEAN					237	1958
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	5.0	Mar 15	3440	Sep 15	42500	Sep 20 1964
LOWEST DAILY MEAN	.00	Aug 5	.00	Apr 27	.00	Sep 28 1939
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 9	.00	Apr 27	.00	Sep 28 1939
INSTANTANEOUS PEAK FLOW			11900	Sep 15	246000	Sep 20 1964
INSTANTANEOUS PEAK STAGE			12.26	Sep 15	31.30	Sep 20 1964
ANNUAL RUNOFF (AC-FT)	459		8910		23360	
10 PERCENT EXCEEDS	1.3		.38		7.7	
50 PERCENT EXCEEDS	.45		.14		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

h See PERIOD OF RECORD paragraph.

08192000 NUECES RIVER BELOW UVALDE, TX

LOCATION.--Lat 29°07'25", long 99°53'40", Uvalde County, Hydrologic Unit 12110103, on right bank at McDaniel Ranch, 5.7 mi upstream from bridge on U.S. Highway 83, 8.8 mi southwest of Uvalde, 18.2 mi downstream from West Nueces River, and at mile 338.7.

DRAINAGE AREA.--1,861 mi².

PERIOD OF RECORD.--April 1939 to current year. October 1927 to April 1939, published as "near Uvalde"; records are equivalent only during periods of flood flow.

REVISED RECORDS.--WSP 1732: 1956(M). WDR TX 83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 796.12 ft above sea level. Oct. 4, 1927, to Apr. 30, 1939, water-stage recorder at site 6.2 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Part of the flow of the Nueces River enters the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin downstream from Laguna (station 08190000) and upstream from this station. At low stage, most of headwater flow enters this formation. There are many small diversions above station for irrigation. Rain gage at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1836, 40.4 ft June 14, 1935, from floodmark (discharge at former site, 616,000 ft³/s, by slope-area measurement). Large floods also occurred in 1901 and 1913, stages unknown.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 16	0200	6,000	8.39	Sept. 27	1830	398	4.07
Sept. 16	1300	4,010	7.01				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	30	24	21	20	17	15	12	7.3	3.7	2.1	3.6
2	40	29	24	21	20	16	15	12	6.6	3.6	2.2	3.3
3	40	28	24	22	19	16	15	11	6.6	3.5	2.1	3.2
4	36	28	24	22	19	16	15	11	6.1	3.4	2.0	3.2
5	34	28	24	22	19	16	16	11	5.9	3.3	2.0	3.3
6	32	28	23	21	19	16	16	11	5.7	3.3	2.0	3.2
7	32	28	24	21	18	15	15	11	5.6	3.2	1.9	3.2
8	32	28	24	22	18	16	15	10	5.5	3.2	1.9	3.2
9	32	28	23	21	18	16	15	10	5.3	3.2	2.0	3.5
10	31	28	23	21	18	16	14	10	5.5	4.7	2.0	4.6
11	31	27	23	22	17	16	15	9.7	5.9	4.4	2.0	4.4
12	31	27	23	22	17	16	14	9.5	5.9	4.7	1.8	3.5
13	31	27	23	22	17	16	14	9.1	5.6	3.8	1.7	3.7
14	30	27	23	22	17	16	14	9.0	5.4	3.4	1.6	3.5
15	30	27	22	22	17	16	14	8.8	5.3	3.2	1.5	17
16	29	27	22	21	17	16	14	8.3	5.1	3.1	1.5	3470
17	30	41	22	21	17	16	14	8.2	5.0	2.9	1.5	809
18	30	31	22	20	17	15	14	8.0	4.9	2.9	1.5	235
19	29	28	22	21	16	16	14	7.9	4.7	2.9	1.4	121
20	29	27	22	22	17	16	13	7.6	4.6	2.9	1.5	73
21	29	27	22	21	17	16	13	7.5	4.4	2.8	1.6	52
22	30	27	22	22	17	16	13	7.5	4.4	2.8	1.8	39
23	30	26	22	21	16	16	13	7.5	4.4	2.8	4.1	32
24	29	25	22	21	16	16	12	7.5	4.4	2.7	3.7	28
25	29	25	23	21	17	19	13	7.5	4.3	2.7	3.2	25
26	29	25	23	21	17	16	12	7.3	4.3	2.6	3.2	46
27	29	25	23	20	17	16	12	7.4	4.3	2.6	2.7	249
28	28	25	22	20	17	15	12	7.4	4.1	2.4	2.5	277
29	29	25	22	20	17	15	11	7.1	4.0	2.3	2.4	147
30	29	24	22	20	---	15	11	6.9	3.8	2.3	7.3	98
31	32	---	21	20	---	15	---	6.7	---	2.2	4.8	---
TOTAL	973	876	705	656	508	494	413	275.4	154.9	97.5	73.5	5767.4
MEAN	31.4	27.5	22.7	21.2	17.5	15.9	13.8	8.88	5.16	3.15	2.37	192
MAX	41	41	24	22	20	19	16	12	7.3	4.7	7.3	3470
MIN	28	24	21	20	16	15	11	6.7	3.8	2.2	1.4	3.2
AC-FT	1930	1640	1400	1300	1010	980	819	546	307	193	146	11440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1996, BY WATER YEAR (WY)

MEAN	221	81.7	77.6	69.5	97.5	59.7	71.5	99.6	223	138	153	224
MAX	3153	380	811	656	2487	909	785	972	3496	1525	3654	3081
(WY)	1974	1959	1992	1985	1949	1992	1977	1987	1958	1976	1971	1964
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1953	1952	1952	1952	1952	1952	1953	1953	1951	1951	1951

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1939 - 1996	
ANNUAL TOTAL	10597		10943.7			
ANNUAL MEAN	29.0		29.9		126	
HIGHEST ANNUAL MEAN					547	1987
LOWEST ANNUAL MEAN					3.63	1956
HIGHEST DAILY MEAN	707	Sep 23	3470	Sep 16	48900	Jun 17 1958
LOWEST DAILY MEAN	12	Jul 29	1.4	Aug 19	.00	May 10 1951
ANNUAL SEVEN-DAY MINIMUM	12	Aug 6	1.5	Aug 14	.00	Jun 18 1951
INSTANTANEOUS PEAK FLOW			6000	Sep 16	189000	Sep 24 1955
INSTANTANEOUS PEAK STAGE			8.39	Sep 16	24.61	Sep 24 1955
ANNUAL RUNOFF (AC-FT)	21020		21710		91250	
10 PERCENT EXCEEDS	30		29		186	
50 PERCENT EXCEEDS	26		16		25	
90 PERCENT EXCEEDS	14		2.9		2.5	

08193000 NUECES RIVER NEAR ASHERTON, TX

LOCATION.--Lat 28°30'00", long 99°40'54", Dimmit County, Hydrologic Unit 12110103, on right bank 28 ft downstream from bridge on Farm Road 190, 0.1 mi downstream from El Moro Creek, 5.8 mi northeast of Asherton, and at mile 266.0.

DRAINAGE AREA.--4,082 mi².

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 1118: 1944.

GAGE.--Water-stage recorder. Datum of gage is 470.92 ft above sea level. Prior to Feb. 2, 1940, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Part of flow of the Nueces River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses basin between Laguna and Uvalde (stations 08190000 and 08192000, respectively). Considerable loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Since March 1948, flow slightly regulated by Upper Nueces Reservoir (capacity, 7,590 acre-ft), 13 mi upstream. Many small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 33 ft June 17, 1935; flood of June 30, 1913, reached about same stage, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00
2	1.1	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00
3	.54	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00
4	.07	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00
5	.01	.00	.01	.01	.01	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.01	.01	.01	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.01	.01	.01	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.01	.00	.01	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.01	.00	.01	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.01	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.59	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	8.3	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	18	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	14	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	8.8	.02	.00	.01	.00	.00	.00	.00	.00	.00	.00
24	.00	4.6	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	2.2	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.80	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.23	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.08	.01	.00	.00	.00	.00	.00	.00	.00	.00	2.2
29	.00	.02	.01	.00	.00	.00	.00	.00	.00	.00	.00	21
30	.00	.01	.01	.01	---	.00	.00	.00	.00	.00	.00	12
31	.00	---	.01	.01	---	.00	---	.00	---	.00	.00	---
TOTAL	7.52	57.64	0.30	0.11	0.13	0.00	0.00	0.00	0.00	0.00	0.00	35.20
MEAN	.24	1.92	.010	.004	.004	.000	.000	.000	.000	.000	.000	1.17
MAX	5.8	18	.02	.01	.01	.00	.00	.00	.00	.00	.00	21
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	15	114	.6	.2	.3	.00	.00	.00	.00	.00	.00	70

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1996, BY WATER YEAR (WY)

MEAN	347	74.0	46.0	56.3	77.6	69.5	110	236	398	194	193	316
MAX	3254	635	537	724	1498	1347	1256	1738	4349	1845	5246	3674
(WY)	1960	1959	1992	1985	1949	1949	1957	1957	1987	1971	1971	1964
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1941	1941	1942	1940	1942	1942	1943	1956	1945	1944	1943	1952

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1940 - 1996	
ANNUAL TOTAL	6439.09		100.90			
ANNUAL MEAN	17.6		.28		177	
HIGHEST ANNUAL MEAN					700	1971
LOWEST ANNUAL MEAN					.003	1989
HIGHEST DAILY MEAN	1640	Jul 8	21	Sep 29	24800	Oct 6 1959
LOWEST DAILY MEAN	.00	Jan 22	.00	Oct 6	.00	Oct 1 1939
ANNUAL SEVEN-DAY MINIMUM	.00	Mar 23	.00	Oct 6	.00	Oct 1 1939
INSTANTANEOUS PEAK FLOW			25	Sep 28	28500	Oct 6 1959
INSTANTANEOUS PEAK STAGE			2.04	Sep 28	30.88	Oct 6 1959
ANNUAL RUNOFF (AC-FT)	12770		200		12900	
10 PERCENT EXCEEDS	1.5		.01		258	
50 PERCENT EXCEEDS	.00		.00		.07	
90 PERCENT EXCEEDS	.00		.00		.00	

08194000 NUECES RIVER AT COTULLA, TX

LOCATION.--Lat 28°25'34", long 99°14'23", La Salle County, Hydrologic Unit 12110105, on left bank at downstream side of bridge on U.S. Highway 81, 0.4 mi upstream from Missouri Pacific Railroad Co. bridge, 0.8 mi southwest of Cotulla, 1.0 mi upstream from Lind Dam, and at mile 216.9.

DRAINAGE AREA.--5,171 mi².

PERIOD OF RECORD.--November 1923 to current year. November 1923 to September 1926 monthly discharge only, published in WSP 1312; figures of daily discharge for Oct. 31, 1923, to Sept. 30, 1926, published in WSP 588, 608, and 628, have been found to be unreliable and should not be used. Gage-height records collected in this vicinity in 1914-17 and since 1922 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1732: 1957(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 368.08 ft above sea level. From Oct. 31, 1923, to Aug. 3, 1924, nonrecording gage at approximate site of present gage at datum 7.28 ft higher. Aug. 4, 1924, to Nov. 19, 1934, nonrecording gage at site 5,000 ft downstream at datum 8.42 ft higher. From Nov. 20, 1934, to July 14, 1938, water-stage recorder, and July 15, 1938, to Apr. 30, 1963, nonrecording gage, at present site and datum.

REMARKS.--No estimated daily discharges. Records fair. Part of the flow of the Nueces River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses basin between Laguna and Uvalde (stations 08190000 and 08192000, respectively). Considerable loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Low flow is slightly regulated by small storage reservoirs above station, with most diverted above station by pumping (see REMARKS for Nueces River near Asherton, station 08193000). Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 19, 1899, reached a stage of 29.7 ft, from information by local residents. Maximum stage since at least 1879, that of June 18, 1935.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.6
2	44	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.0
3	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.92
4	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28
5	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07
6	6.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
7	3.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	1.2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.67	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.32	.00	.00	.00	.00	.00	.00	.00	.00	357	.00	.00
11	.06	.00	.00	.00	.00	.00	.00	.00	.00	343	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	178	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	96	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	58	.00	.43
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	38	.00	19
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	25	.00	25
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	14	.00	22
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.0	.00	15
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.1	.00	11
20	.00	.02	.00	.00	.00	.00	.00	.00	.00	2.6	.00	7.4
21	.00	.04	.00	.00	.00	.00	.00	.00	.00	.52	.00	4.4
22	.00	.02	.00	.00	.00	.00	.00	.00	.00	.15	.00	2.2
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	1.2
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.57
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.45
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	640	.51
31	.00	---	.00	.00	---	.00	---	.00	---	.00	162	---
TOTAL	174.85	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1125.39	802.00	123.61
MEAN	5.64	.003	.000	.000	.000	.000	.000	.000	.000	36.3	25.9	4.12
MAX	58	.04	.00	.00	.00	.00	.00	.00	.00	357	640	25
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	347	.2	.00	.00	.00	.00	.00	.00	.00	2230	1590	245

08194000 NUECES RIVER AT COTULLA, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1996, BY WATER YEAR (WY)

MEAN	464	97.6	49.3	62.8	53.7	77.5	138	351	616	349	235	538
MAX	3906	1098	414	761	619	2351	1444	2131	10680	3922	6412	6335
(WY)	1960	1977	1970	1985	1992	1949	1957	1929	1935	1971	1971	1932
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1932	1929	1927	1927	1928	1928	1928	1948	1932	1928	1930	1930

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1927 - 1996	
ANNUAL TOTAL	10922.90		2225.93			
ANNUAL MEAN	29.9		6.08		253	
HIGHEST ANNUAL MEAN					1430	1935
LOWEST ANNUAL MEAN					2.24	1989
HIGHEST DAILY MEAN	1200	Jul 12	640	Aug 30	79000	Jun 18 1935
LOWEST DAILY MEAN	.00	Jan 30	.00	Oct 12	.00	Oct 1 1926
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 30	.00	Oct 12	.00	Oct 1 1926
INSTANTANEOUS PEAK FLOW			1280	Aug 30	82600	Jun 18 1935
INSTANTANEOUS PEAK STAGE			11.72	Aug 30	32.40	Jun 18 1935
ANNUAL RUNOFF (AC-FT)	21670		4420		183400	
10 PERCENT EXCEEDS	43		.51		353	
50 PERCENT EXCEEDS	.00		.00		.44	
90 PERCENT EXCEEDS	.00		.00		.00	

08194200 SAN CASIMIRO CREEK NEAR FREER, TX

LOCATION.--Lat 27°57'53", long 98°58'00", Webb County, Hydrologic Unit 12110105, at downstream side of bridge on State Highway 44, 11.4 mi upstream from mouth, and 22 mi northwest of Freer.

DRAINAGE AREA.--469 mi².

PERIOD OF RECORD.--January 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 298 ft above sea level, from Texas Department of Transportation datum.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1946, that of Oct. 17, 1971. The next highest stage, 26 ft (discharge 65,200 ft³/s), occurred in 1954, from information by Texas Department of Transportation.

PEAK DISCHARGES.--Peak discharges greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 18	0300	724	14.57	Sept. 2	1200	516	13.28
Aug. 31	0700	502	13.18	Sept. 27	1500	1,530	17.47

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.2	.97	.00	.00	.00	.00	.00	.01	.00	.00	285
2	.98	.66	.95	.00	.00	.00	.00	.00	.00	.00	.00	468
3	.65	.25	.79	.00	.00	.00	.00	.00	.00	.00	.00	132
4	.48	.21	.58	.00	.00	.00	.00	.00	.00	.00	.00	53
5	.23	.28	.41	.00	.00	.00	.00	.00	.00	.00	.00	20
6	.14	.77	.31	.00	.00	.00	.01	.00	.00	.00	.00	5.6
7	.09	.63	.29	.00	.00	.00	.00	.00	.00	.00	.00	2.5
8	.04	.31	.27	.00	.00	.00	.00	.00	.00	.00	.00	15
9	.01	.16	.22	.00	.00	.00	.00	.00	.00	.00	.00	48
10	.00	.06	.17	.00	.00	.00	.00	.00	.00	.01	.00	28
11	.00	.01	.13	.00	.00	.00	.00	.00	.00	.00	.00	13
12	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	2.7
13	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	1.5
14	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	2.1
15	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	4.5
16	.00	.01	.06	.00	.00	.00	.00	.00	.00	.00	.00	3.8
17	.00	311	.06	.00	.00	.00	.00	.00	.00	.00	.00	16
18	.00	677	.03	.00	.00	.00	.00	.00	.00	.00	.00	6.3
19	.00	638	.00	.00	.00	.00	.00	.00	.00	.00	.00	27
20	.00	417	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.0
21	.00	112	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.1
22	.00	38	.04	.00	.00	.00	.00	.00	.00	.00	.01	.32
23	.00	22	.03	.00	.00	.00	.00	.00	.00	.00	44	.16
24	.00	12	.01	.00	.00	.00	.00	.00	.00	.00	44	.06
25	.00	4.9	.00	.00	.00	.00	.00	.00	.00	.00	55	48
26	.00	3.2	.00	.00	.00	.00	.00	.00	.00	.00	6.2	127
27	.00	2.5	.00	.00	.00	.01	.00	.00	.00	2.5	3.7	1140
28	.00	1.7	.00	.00	.00	.00	.00	.00	.00	41	24	860
29	.01	1.3	.00	.00	.00	.00	.00	.00	.00	4.5	20	175
30	.00	1.1	.00	.00	---	.00	.00	.00	.00	.41	43	33
31	.00	---	.00	.00	---	.00	---	.00	---	.07	355	---
TOTAL	3.93	2246.25	5.60	0.00	0.00	0.01	0.01	0.00	0.01	48.49	594.91	3527.64
MEAN	.13	74.9	.18	.000	.000	.000	.000	.000	.000	1.56	19.2	118
MAX	1.3	677	.97	.00	.00	.01	.01	.00	.01	41	355	1140
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06
AC-FT	7.8	4460	11	.00	.00	.02	.02	.00	.02	96	1180	7000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1996, BY WATER YEAR (WY)

MEAN	134	19.3	8.83	2.24	2.42	8.38	19.4	125	83.2	16.9	24.5	147
MAX	3021	288	247	40.2	19.5	145	297	747	606	365	377	2367
(WY)	1972	1986	1977	1977	1973	1985	1985	1981	1981	1976	1980	1967
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1964	1965	1965	1962	1962	1962	1965	1962	1965	1965	1963	1965

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1962 - 1996	
ANNUAL TOTAL	7750.15		6426.85			
ANNUAL MEAN	21.2		17.6		50.4	
HIGHEST ANNUAL MEAN					323	1972
LOWEST ANNUAL MEAN					2.44	1984
HIGHEST DAILY MEAN	1360	Sep 23	1140	Sep 27	36600	Oct 17 1971
LOWEST DAILY MEAN	.00	Jan 7	.00	Oct 10	.00	Jan 1 1962
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 7	.00	Oct 10	.00	Jan 1 1962
INSTANTANEOUS PEAK FLOW			1530	Sep 27	82000	Oct 17 1971
INSTANTANEOUS PEAK STAGE			17.47	Sep 27	26.87	Oct 17 1971
ANNUAL RUNOFF (AC-FT)	15370		12750		36510	
10 PERCENT EXCEEDS	9.1		5.8		17	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

08194500 NUECES RIVER NEAR TILDEN, TX

LOCATION.--Lat 28°18'31", long 98°33'25", McMullen County, Hydrologic Unit 12110105, on right bank at downstream side of bridge on State Highway 16, 1.8 mi upstream from Kings Branch, 10.5 mi south of Tilden, and at mile 135.4.

DRAINAGE AREA.--8,093 mi².

PERIOD OF RECORD.--November 1942 to current year.

REVISED RECORDS.--WSP 1512: 1947. WSP 1732: 1951(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 183.5 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Part of flow of Nueces River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Laguna and Uvalde (stations 08190000 and 08192000, respectively). Some loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Some diversions for irrigation above station. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in June 1935 reached a stage of 23.7 ft and in July 1942 about 22 ft, from information by local residents. Maximum stage since about 1902, that of Sept. 24, 1967. Flood of Oct. 11, 1946, reached a stage of 26.46 ft (discharge, 70,000 ft³/s).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 19	0100	2,040	15.40				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	.00	10	.00	.00	.00	.00	.00	.00	.00	5.3	105
2	34	.00	7.9	.00	.00	.00	.00	.00	.00	.00	1.0	427
3	16	.00	5.5	.00	.00	.00	.00	.00	91	.00	.09	631
4	8.5	.00	4.9	.00	.00	.00	.00	.00	1.9	.00	.00	689
5	5.3	.00	4.3	.00	.00	.00	.00	.00	.11	.00	.00	730
6	3.9	.00	3.7	.00	.00	.00	.00	.00	.00	.00	.00	624
7	2.6	.00	3.2	.00	.00	.00	.00	.00	.00	.00	.00	497
8	2.2	.00	2.8	.00	.00	.00	.00	.00	.00	.00	.00	558
9	1.7	.00	2.5	.00	.00	.00	.00	.00	.00	.00	.00	479
10	1.2	.00	2.0	.00	.00	.00	.00	.00	.00	.00	.00	174
11	.91	.00	1.8	.00	.00	.00	.00	.00	.00	.00	.00	140
12	.55	.00	1.6	.00	.00	.00	.00	.00	.00	.00	.00	187
13	.23	.00	1.4	.00	.00	.00	.00	.00	.00	.00	.00	170
14	.11	.00	1.2	.00	.00	.00	.00	.00	.00	176	.00	74
15	.08	.00	1.1	.00	.00	.00	.00	.00	.00	237	.00	31
16	.06	.00	1.0	.00	.00	.00	.00	.00	.00	96	.00	13
17	.04	57	1.0	.00	.00	.00	.00	.00	.00	46	.00	7.5
18	.00	1570	.97	.00	.00	.00	.00	.00	.00	23	.00	4.0
19	.00	1860	.94	.00	.00	.00	.00	.00	.00	11	.00	3.1
20	.00	1270	.79	.00	.00	.00	.00	.00	.00	6.2	.00	809
21	.00	936	.58	.00	.00	.00	.00	.00	.00	2.6	.00	1280
22	.00	931	.88	.00	.00	.00	.00	.00	.00	.82	.00	1200
23	.00	1020	1.0	.00	.00	.00	.00	.00	.00	.14	.00	1100
24	.00	1110	.94	.00	.00	.00	.00	.00	.00	.00	.00	1140
25	.00	673	.84	.00	.00	.00	.00	.00	.00	.00	.00	743
26	.00	99	.53	.00	.00	.00	.00	.00	.00	.00	.00	107
27	.00	49	.33	.00	.00	.00	.00	.00	.00	.00	77	432
28	.00	30	.24	.00	.00	.00	.00	.00	.00	.00	85	661
29	.00	19	.10	.00	.00	.00	.00	.00	.00	34	80	776
30	.00	14	.05	.00	---	.00	.00	.00	.00	51	67	878
31	.00		.02	.00	---	.00	---	.00	---	26	100	---
TOTAL	152.38	9638.00	64.11	0.00	0.00	0.00	0.00	0.00	93.01	709.76	415.39	14669.6
MEAN	4.92	321	2.07	.000	.000	.000	.000	.000	3.10	22.9	13.4	489
MAX	75	1860	10	.00	.00	.00	.00	.00	91	237	100	1280
MIN	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	3.1
AC-FT	302	19120	127	.00	.00	.00	.00	.00	184	1410	824	29100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1996, BY WATER YEAR (WY)

MEAN	947	247	82.7	107	140	111	180	584	721	389	315	762
MAX	11250	3509	1275	1912	4793	2104	2028	4122	5404	6291	7197	10150
(WY)	1972	1977	1977	1958	1958	1949	1949	1957	1987	1971	1971	1967
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.003	.000	.000	.000
(WY)	1953	1953	1951	1951	1964	1954	1955	1971	1984	1953	1951	1952

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1943 - 1996	
ANNUAL TOTAL	26706.54		25742.25			
ANNUAL MEAN	73.2		70.3		386	
HIGHEST ANNUAL MEAN					1736	1971
LOWEST ANNUAL MEAN					14.0	1989
HIGHEST DAILY MEAN	1860	Nov 19	1860	Nov 19	70000	Sep 24 1967
LOWEST DAILY MEAN	.00	Feb 12	.00	Oct 18	.00	Apr 29 1943
ANNUAL SEVEN-DAY MINIMUM	.00	May 9	.00	Oct 18	.00	Apr 29 1943
INSTANTANEOUS PEAK FLOW			2040	Nov 19	76500	Sep 24 1967
INSTANTANEOUS PEAK STAGE			15.40	Nov 19	26.57	Sep 24 1967
ANNUAL RUNOFF (AC-FT)	52970		51060		279400	
10 PERCENT EXCEEDS	163		97		720	
50 PERCENT EXCEEDS	1.2		.00		4.5	
90 PERCENT EXCEEDS	.00		.00		.00	

08195000 FRIO RIVER AT CONCAN, TX

LOCATION.--Lat 29°29'18", long 99°42'16", Uvalde County, Hydrologic Unit 12110106, on left bank 0.7 mi southeast of Concan Post Office, 15 mi upstream from Dry Frio River, and 222.8 mi upstream from mouth.

DRAINAGE AREA.--389 mi².

PERIOD OF RECORD.--October 1923 to September 1929, October 1930 to current year.
Water-quality records.--Chemical analyses: June 1952, December 1964 to July 1965. Chemical, biochemical, and pesticide analyses: August 1968 to September 1993. Pesticide analyses: August 1968 to September 1993.

REVISED RECORDS.--WSP 1342: Drainage area. WSP 1512: 1926, 1931-32, 1934(M), 1935-36. WSP 1712: 1958. WSP 1923: 1954(M), 1957(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,203.71 ft above sea level. Oct. 26, 1923, to July 28, 1924, nonrecording gage at site 86 ft upstream at datum 5.08 ft lower. July 29, 1924, to Oct. 3, 1930, nonrecording gage, and Oct. 4, 1930, to May 18, 1939, water-stage recorder, at site 130 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Many small diversions for irrigation above station. Rain gage at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 15	1300	4,640	7.60				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	186	121	98	76	65	62	52	40	72	25	16	52
2	178	125	98	74	67	60	50	40	53	24	15	52
3	170	124	95	77	67	58	52	40	58	22	14	51
4	164	118	95	76	66	58	52	40	51	21	15	50
5	157	112	93	74	65	58	53	40	48	21	13	64
6	147	110	92	73	65	57	59	40	45	21	14	57
7	142	106	93	73	65	53	54	39	43	19	14	56
8	138	103	92	73	65	56	53	38	41	19	14	54
9	136	102	90	73	64	56	51	38	40	19	16	54
10	132	101	89	71	63	56	50	37	39	25	17	56
11	128	97	89	70	62	56	50	39	38	31	16	54
12	125	95	89	70	61	56	50	38	37	50	15	53
13	122	95	87	69	61	56	48	38	36	30	14	52
14	117	93	86	72	61	55	47	38	34	27	14	51
15	114	92	86	70	62	53	44	37	33	25	13	1110
16	111	93	86	70	61	53	45	35	31	24	14	427
17	111	111	86	70	60	53	46	33	30	22	13	230
18	111	117	86	68	61	52	45	33	30	22	13	163
19	109	116	83	68	58	52	44	32	29	21	13	133
20	105	121	83	70	58	52	43	33	28	20	13	119
21	104	116	83	68	58	52	43	33	27	19	14	107
22	103	112	83	70	56	53	44	32	26	19	13	100
23	102	109	83	69	56	53	42	32	26	18	17	97
24	98	105	80	67	56	53	42	32	26	17	32	103
25	98	103	80	67	56	52	41	32	25	19	42	114
26	100	102	80	67	58	54	40	32	27	19	33	109
27	99	99	78	67	58	55	40	34	28	18	28	127
28	97	96	78	67	58	54	40	35	26	17	25	111
29	96	95	79	67	61	54	39	35	25	17	24	102
30	98	97	80	67	---	53	38	35	25	16	60	94
31	101	---	78	65	---	52	---	112	---	14	45	---
TOTAL	3799	3186	2678	2178	1774	1697	1397	1192	1077	681	619	4002
MEAN	123	106	86.4	70.3	61.2	54.7	46.6	38.5	35.9	22.0	20.0	133
MAX	186	125	98	77	67	62	59	112	72	50	60	1110
MIN	96	92	78	65	56	52	38	32	25	14	13	50
AC-FT	7540	6320	5310	4320	3520	3370	2770	2360	2140	1350	1230	7940
CFSM	.32	.27	.22	.18	.16	.14	.12	.10	.09	.06	.05	.34
IN.	.36	.30	.26	.21	.17	.16	.13	.11	.10	.07	.06	.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1996h, BY WATER YEAR (WY)

MEAN	141	99.2	100	89.8	96.6	96.1	105	137	176	167	99.1	141
MAX	648	391	767	525	613	762	859	1041	2468	2823	1050	1333
(WY)	1970	1959	1992	1992	1992	1992	1981	1935	1935	1932	1971	1936
MIN	.000	.000	.000	3.01	8.25	11.8	8.52	6.48	1.08	1.25	.019	.000
(WY)	1957	1957	1957	1957	1957	1956	1956	1956	1956	1953	1956	1956

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1924 - 1996h	
ANNUAL TOTAL	42048		24280			
ANNUAL MEAN	115		66.3		121	
HIGHEST ANNUAL MEAN					434	1992
LOWEST ANNUAL MEAN					8.80	1956
HIGHEST DAILY MEAN	4390	Sep 21	1110	Sep 15	52000	Jul 1 1932
LOWEST DAILY MEAN	43	Sep 19	13	Aug 5	.00	Aug 5 1956
ANNUAL SEVEN-DAY MINIMUM	46	Sep 7	13	Aug 14	.00	Aug 5 1956
INSTANTANEOUS PEAK FLOW			4640	Sep 15	162000	Jul 1 1932
INSTANTANEOUS PEAK STAGE			7.60	Sep 15	d34.44	Jul 1 1932
ANNUAL RUNOFF (AC-FT)	83400		48160		87400	
ANNUAL RUNOFF (CFSM)	.30		.17		.31	
ANNUAL RUNOFF (INCHES)	4.02		2.32		4.21	
10 PERCENT EXCEEDS	133		111		195	
50 PERCENT EXCEEDS	93		56		67	
90 PERCENT EXCEEDS	51		19		18	

d Maximum stage since at least 1869.
h See PERIOD OF RECORD paragraph.

08196000 DRY FRIO RIVER NEAR REAGAN WELLS, TX

LOCATION.--Lat 29°30'16", long 99°46'52", Uvalde County, Hydrologic Unit 12110106, on right bank 2.3 mi upstream from bridge on U.S. Highway 83, 3.1 mi upstream from Rocky Creek, 4.3 mi southeast of Reagan Wells, and 25.9 mi upstream from mouth.

DRAINAGE AREA.--126 mi².

PERIOD OF RECORD.--September 1952 to current year.
Water-quality records.--Chemical and biochemical analyses: January 1966 to September 1993. Pesticide analyses: January 1974 to September 1993. Sediment analyses: January 1966.

REVISED RECORDS.--WSP 1712: 1953. WSP 1923: 1955(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,335.2 ft above sea level, from Texas Department of Transportation datum.

REMARKS.--No estimated daily discharges. Records good. There are several small diversions above station. Rain gage at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875 occurred in 1880 (about 33 ft). Flood of June 14, 1935, reached a stage of 26.0 ft (discharge, 64,700 ft³/s, determined at site 2.6 mi upstream), and flood of July 1, 1932, reached a stage of 23 ft (discharge, 30,700 ft³/s, determined at site 2.0 mi upstream), from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 15	0715	1,710	5.87				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	35	19	13	9.2	9.7	6.8	3.8	1.3	.88	.60	12
2	81	31	19	13	9.7	9.6	6.8	3.8	1.4	.83	.58	10
3	75	27	19	12	10	9.2	6.8	3.8	1.4	.86	.57	11
4	69	25	18	12	10	9.2	6.8	4.0	2.3	.81	.54	11
5	65	25	18	12	10	9.4	7.2	4.1	2.3	.74	.54	13
6	61	24	17	12	10	9.7	8.2	4.3	2.2	.71	.52	38
7	57	23	17	12	10	9.7	7.9	4.1	2.1	.66	.49	42
8	54	22	17	12	10	9.7	7.7	4.1	1.8	.70	.48	35
9	52	20	17	12	10	9.7	7.5	3.9	1.5	.65	.48	33
10	49	20	15	12	10	9.7	7.2	3.5	1.3	.93	.45	26
11	46	20	15	12	10	9.7	7.2	3.4	1.2	.76	.42	21
12	43	20	15	12	10	9.2	7.2	3.2	1.1	.95	.39	15
13	41	20	15	11	10	9.2	7.1	2.9	.91	.91	.36	12
14	38	19	15	10	10	9.2	6.7	2.7	1.0	.99	.36	10
15	36	19	15	10	9.7	9.2	6.0	2.4	1.3	1.0	.36	354
16	35	19	15	10	9.7	9.2	6.0	2.3	1.3	1.0	.35	122
17	34	28	15	10	9.7	8.4	5.9	2.1	1.2	.92	.32	66
18	33	41	15	10	9.6	7.5	5.6	1.9	1.2	.89	.32	44
19	34	36	14	9.7	9.2	7.2	5.6	1.7	1.1	.81	.31	34
20	33	32	14	9.7	9.1	7.2	5.4	1.6	1.1	.73	.31	29
21	31	29	14	9.7	8.7	6.7	5.6	1.6	.99	.64	.33	25
22	30	27	14	9.7	8.7	6.4	5.6	1.4	.90	.60	.38	22
23	29	28	14	9.7	8.7	6.4	5.4	1.3	.89	.59	.57	19
24	27	23	14	9.7	8.3	6.4	5.1	1.3	.84	.66	.67	19
25	27	22	14	9.7	8.2	6.8	4.8	1.3	.85	.68	.69	19
26	27	21	14	9.7	8.2	7.2	4.7	1.3	.86	.67	.66	17
27	27	20	13	9.5	8.2	7.2	4.4	1.4	.83	.65	.60	27
28	25	20	12	9.2	8.8	7.1	4.4	1.4	.90	1.5	.55	26
29	25	19	12	9.2	9.5	6.8	4.1	1.4	.92	.61	.65	20
30	26	19	12	9.2	---	6.8	4.1	1.3	.91	.61	8.1	18
31	26	---	12	9.2	---	6.8	---	1.3	---	.61	8.2	---
TOTAL	1322	734	469	330.9	273.2	256.2	183.8	78.6	37.90	24.55	30.15	1150
MEAN	42.6	24.5	15.1	10.7	9.42	8.26	6.13	2.54	1.26	.79	.97	38.3
MAX	86	41	19	13	10	9.7	8.2	4.3	2.3	1.5	8.2	354
MIN	25	19	12	9.2	8.2	6.4	4.1	1.3	.83	.59	.31	10
AC-FT	2620	1460	930	656	542	508	365	156	75	49	60	2280
CFSM	.34	.19	.12	.08	.07	.07	.05	.02	.01	.01	.01	.30
IN.	.39	.22	.14	.10	.08	.08	.05	.02	.01	.01	.01	.34

08196000 DRY FRIO RIVER NEAR REAGAN WELLS, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1996, BY WATER YEAR (WY)

MEAN	51.3	29.1	27.7	22.4	24.3	27.7	27.2	40.2	58.3	37.5	33.9	38.5
MAX	258	134	185	120	131	208	257	338	483	277	365	277
(WY)	1970	1968	1992	1992	1992	1992	1981	1987	1987	1976	1966	1958
MIN	.000	.000	.055	.51	.87	2.24	1.50	.86	.19	.077	.000	.000
(WY)	1957	1957	1957	1957	1957	1954	1956	1956	1953	1953	1956	1956

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1952 - 1996	
ANNUAL TOTAL	11139.3		4890.30			
ANNUAL MEAN	30.5		13.4		35.0	
HIGHEST ANNUAL MEAN					121	1987
LOWEST ANNUAL MEAN					2.99	1956
HIGHEST DAILY MEAN	1780	Sep 21	354	Sep 15	8100	Aug 13 1966
LOWEST DAILY MEAN	2.7	Aug 30	.31	Aug 19	.00	Jul 10 1953
ANNUAL SEVEN-DAY MINIMUM	3.1	Aug 24	.33	Aug 15	.00	Jul 30 1953
INSTANTANEOUS PEAK FLOW			1710	Sep 15	123000	Aug 13 1966
INSTANTANEOUS PEAK STAGE			5.87	Sep 15	27.60	Aug 13 1966
ANNUAL RUNOFF (AC-FT)	22090		9700		25330	
ANNUAL RUNOFF (CFSM)	.24		.11		.28	
ANNUAL RUNOFF (INCHES)	3.29		1.44		3.77	
10 PERCENT EXCEEDS	41		29		64	
50 PERCENT EXCEEDS	17		9.2		14	
90 PERCENT EXCEEDS	4.5		.66		2.2	

08197500 FRIO RIVER BELOW DRY FRIO RIVER NEAR UVALDE, TX

LOCATION.--Lat 29°14'44", long 99°40'27", Uvalde County, Hydrologic Unit 12110106, on right bank 1.1 mi upstream from Farm Road 1023, 5.7 mi downstream from Dry Frio River, 6.3 mi downstream from bridge on U.S. Highway 90, 7.2 mi northeast of Uvalde, and 194.5 mi upstream from mouth.

DRAINAGE AREA.--631 mi².

PERIOD OF RECORD.--September 1952 to current year. Sum of records published as Frio River at Knippa and Dry Frio River at Knippa for period September 1952 to September 1953 is equivalent to record for this station.

REVISED RECORDS.--WDR TX 83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 882.47 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Part of flow of Frio River enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses the basin between Concan (station 08195000) and this station. Most of the low flow enters this formation. Many diversions for irrigation above station. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1887, about 35 ft in 1894. Flood of July 1, 1932, reached a stage of about 30 ft. A higher flood than that of 1894 occurred prior to 1887. Above information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
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	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.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	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	179
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.5
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
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	.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	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	188.51
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	6.28
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	179
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	374

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1996, BY WATER YEAR (WY)

MEAN	59.6	4.00	30.3	11.3	7.24	12.1	27.1	40.5	92.2	36.1	46.7	50.4
MAX	717	81.3	710	241	300	455	702	865	1461	597	897	699
(WY)	1970	1959	1985	1992	1992	1992	1981	1987	1987	1973	1971	1958
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1954	1954	1954	1954	1954	1954	1954	1955	1954	1954	1954	1954

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1954 - 1996	
ANNUAL TOTAL	6667.20		188.51			
ANNUAL MEAN	18.3		.52		34.9	
HIGHEST ANNUAL MEAN					221	1987
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	5720	Sep 22	179	Sep 16	24100	May 29 1987
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1 1953
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 1 1953
INSTANTANEOUS PEAK FLOW			491	Sep 16	99600	May 29 1987
INSTANTANEOUS PEAK STAGE			4.57	Sep 16	25.05	May 29 1987
ANNUAL RUNOFF (AC-FT)	13220		374		25290	
10 PERCENT EXCEEDS	.00		.00		.12	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

08198000 SABINAL RIVER NEAR SABINAL, TX

LOCATION.--Lat 29°29'27", long 99°29'33", Uvalde County, Hydrologic Unit 12110106, on right bank 108 ft upstream from concrete dam, 2.3 mi downstream from mouth of Onion Creek, 12.5 mi north of Sabinal, and 41.6 mi upstream from mouth.

DRAINAGE AREA.--206 mi².

PERIOD OF RECORD.--October 1942 to current year.
Water-quality records.--Chemical analyses: November 1964 to July 1965. Chemical and biochemical analyses: February 1970 to September 1993. Pesticide analyses: August 1971 to September 1993. Sediment analyses: November 1965.

REVISED RECORDS.--WSP 1312: 1943(M), 1944(M), 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 1,131.20 ft above sea level. Prior to Apr. 9, 1971, at site 0.3 mi downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. There are several small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1892, about 33 ft July 2, 1932, from information by local residents. A flood in the middle 1800's reached a stage of nearly 63 ft; see flood history for station 08198500.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	55	34	28	20	18	13	7.0	3.9	1.4	.06	1.3
2	53	52	35	26	20	18	12	6.9	3.4	1.2	.04	3.0
3	50	42	34	27	20	18	13	7.0	3.6	1.1	.03	1.7
4	48	39	33	27	21	18	13	7.4	3.7	.93	.01	1.3
5	46	37	32	27	21	18	13	7.0	3.2	.77	.00	1.3
6	44	37	32	26	22	17	15	6.9	2.8	.70	.00	1.1
7	43	36	30	25	22	15	16	7.0	2.5	.70	.00	1.1
8	43	34	32	24	21	15	15	6.9	2.6	.70	.00	1.1
9	43	34	31	25	21	16	14	6.9	2.6	.68	.00	.88
10	43	34	30	24	20	16	14	6.3	2.5	.67	.00	.91
11	42	32	30	24	19	16	13	8.5	2.4	.58	.00	.77
12	41	32	31	22	19	17	12	7.4	2.3	.84	.00	.74
13	40	33	31	22	19	16	11	8.0	2.1	.61	.00	.69
14	38	33	31	22	19	16	10	8.0	2.1	.70	.00	.54
15	37	34	30	23	19	15	9.2	6.9	2.1	1.1	.00	55
16	37	34	30	23	18	15	8.9	6.0	2.1	1.3	.00	12
17	37	39	31	23	16	14	8.8	4.9	2.1	1.2	.00	4.6
18	36	46	31	21	17	13	9.3	4.5	1.8	1.1	.00	3.3
19	36	46	29	21	17	14	8.8	4.1	1.8	.72	.00	2.7
20	34	42	29	21	16	14	8.3	4.0	1.8	.61	.00	2.4
21	34	39	28	21	16	14	8.0	3.9	1.6	.54	.00	2.2
22	34	37	27	21	16	14	8.4	3.7	1.3	.54	.00	2.1
23	34	37	27	21	15	13	8.3	3.5	1.2	.45	.00	1.8
24	32	36	27	20	14	14	7.9	3.5	1.1	.40	.00	1.6
25	32	35	27	20	14	13	7.9	3.4	1.1	.30	.00	1.6
26	34	35	27	20	13	13	7.7	3.4	1.1	.29	.00	1.7
27	34	35	27	19	14	14	7.5	5.6	.92	.24	.03	1.6
28	34	33	27	19	14	16	7.5	5.0	.99	.19	.23	1.6
29	32	33	27	20	15	16	6.8	4.5	1.2	.13	.67	1.5
30	32	33	29	21	---	15	6.5	3.9	1.2	.11	.84	1.4
31	34	---	29	19	---	14	---	3.4	---	.09	.70	---
TOTAL	1210	1124	928	702	518	475	313.8	175.4	63.11	20.89	2.61	113.53
MEAN	39.0	37.5	29.9	22.6	17.9	15.3	10.5	5.66	2.10	.67	.084	3.78
MAX	53	55	35	28	22	18	16	8.5	3.9	1.4	.84	55
MIN	32	32	27	19	13	13	6.5	3.4	.92	.09	.00	.54
AC-FT	2400	2230	1840	1390	1030	942	622	348	125	41	5.2	225
CFSM	.19	.18	.15	.11	.09	.07	.05	.03	.01	.00	.00	.02
IN.	.22	.20	.17	.13	.09	.09	.06	.03	.01	.00	.00	.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1996, BY WATER YEAR (WY)

MEAN	65.6	49.0	49.9	46.7	53.3	58.0	55.6	69.1	116	77.9	54.2	50.5
MAX	318	321	612	408	584	624	392	389	1527	1035	669	306
(WY)	1972	1959	1992	1992	1992	1992	1992	1987	1987	1973	1971	1980
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1952	1952	1952	1952	1952	1952	1954	1953	1953	1953	1948	1951

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1943 - 1996	
ANNUAL TOTAL	14981.3		5646.34			
ANNUAL MEAN	41.0		15.4		62.2	
HIGHEST ANNUAL MEAN					340	1992
LOWEST ANNUAL MEAN					.82	1955
HIGHEST DAILY MEAN	949	Sep 22	55	Nov 1	13000	Jun 17 1958
LOWEST DAILY MEAN	7.0	Sep 13	.00	Aug 5	.00	Aug 10 1946
ANNUAL SEVEN-DAY MINIMUM	8.2	Sep 8	.00	Aug 5	.00	Aug 10 1946
INSTANTANEOUS PEAK FLOW			279	Sep 15	55200	Jun 17 1958
INSTANTANEOUS PEAK STAGE			5.86	Sep 15	28.30	Jun 17 1958
ANNUAL RUNOFF (AC-FT)	29720		11200		45050	
ANNUAL RUNOFF (CFSM)	.20		.075		.30	
ANNUAL RUNOFF (INCHES)	2.71		1.02		4.10	
10 PERCENT EXCEEDS	60		35		120	
50 PERCENT EXCEEDS	35		14		25	
90 PERCENT EXCEEDS	17		.43		.00	

08198500 SABINAL RIVER AT SABINAL, TX

LOCATION.--Lat 29°18'05", long 99°28'46", Uvalde County, Hydrologic Unit 12110106, on left bank 80 ft downstream from bridge on U.S. Highway 90, 1,100 ft downstream from Southern Pacific Lines railroad bridge, 0.8 mi west of Sabinal, 5.8 mi upstream from Ranchero Creek, and 223 mi upstream from mouth.

DRAINAGE AREA.--241 mi².

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

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 882.17 ft above sea level. Prior to July 29, 1958, nonrecording gage, and July 29, 1958, to Mar. 19, 1964, water-stage recorder at site 80 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records fair. Several small diversions for irrigation above station. Most of low flow of the Sabinal River enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses basin upstream from this station and downstream from Sabinal River near Sabinal (station 08198000). Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 40 ft Aug. 24, 1919, from information by local residents. Flood of July 2, 1932, reached a stage of 31 ft (discharge, 60,000 ft³/s), from information by Southern Pacific Lines. Information indicates that a flood in 1858 covered the townsite of Sabinal. The stage would have been 70 to 80 ft, which seems unlikely. However, it is possible that a flood occurred in 1858 that covered part of the townsite and was higher than any flood since that date.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	1.8	1.3	1.4	1.3	1.0	.58	.58	1.1	.36	.35	.08
2	2.8	1.3	1.4	1.4	1.4	.79	.74	.58	.50	.37	.38	.38
3	2.7	1.3	1.4	1.5	1.3	.85	.81	.58	.57	.34	.39	.25
4	2.7	1.3	1.3	1.6	1.3	.74	.85	.58	.51	.31	.38	.17
5	2.6	1.3	1.4	1.6	1.2	.72	.92	.58	.48	.29	.38	.40
6	2.5	1.2	1.4	1.6	1.2	.74	1.0	.58	.49	.26	.40	.51
7	2.3	1.1	1.4	1.6	1.2	1.0	.93	.57	.45	.26	.40	.55
8	2.3	1.1	1.4	1.6	1.5	.98	.83	.52	.43	.30	.38	.58
9	2.5	1.0	1.4	1.6	1.5	1.0	.78	.51	.49	.32	.35	.56
10	2.8	1.0	1.4	1.6	1.5	.86	.78	.45	.48	1.0	.35	.60
11	3.0	.91	1.4	1.4	1.6	.92	.77	.51	.50	.63	.40	.65
12	3.0	.93	1.4	.93	1.4	.99	.72	.58	.51	.57	.40	.54
13	3.2	1.1	1.5	.92	1.3	.86	.86	.58	.47	.55	.34	.40
14	2.5	1.2	1.5	.85	1.3	.69	.96	.58	.49	.51	.33	.40
15	2.2	1.3	1.5	.85	.90	.59	.88	.57	.43	.45	.35	.95
16	2.2	1.3	1.5	.79	.74	.58	.78	.53	.37	.47	.35	.00
17	2.3	2.0	1.5	.78	.68	.59	.78	.49	.33	.50	.35	.00
18	2.2	1.8	1.5	.84	.59	.73	.78	.51	.38	.51	.32	.00
19	2.2	1.9	1.6	.89	.59	.80	.78	.50	.36	.45	.25	.00
20	2.2	1.9	1.6	.76	.73	.72	.75	.51	.34	.39	.28	.00
21	2.1	1.7	1.6	.81	.78	.68	.70	.51	.34	.36	.30	.00
22	2.0	1.6	1.6	.85	.79	.64	.68	.49	.32	.42	.29	.00
23	2.0	1.6	1.5	.89	.87	.58	.66	.50	.29	.38	.64	.00
24	1.9	1.6	1.5	1.0	.91	.54	.56	.50	.29	.32	.45	.00
25	1.9	1.5	1.5	1.1	.93	.50	.56	.51	.26	.33	.51	.00
26	1.9	1.5	1.5	1.2	.99	.50	.51	.50	.25	.35	.29	.00
27	1.9	1.5	1.3	1.3	.93	.55	.52	.58	.28	.37	.15	.00
28	1.7	1.5	1.3	1.3	.93	.53	.60	.69	.34	.35	.11	.00
29	1.7	1.5	1.3	1.3	1.0	.52	.54	.67	.34	.35	.09	.00
30	1.7	1.4	1.3	1.4	---	.52	.58	.59	.32	.35	1.4	.00
31	9.4	---	1.3	1.4	---	.56	---	.78	---	.37	.30	---
TOTAL	79.3	42.14	44.5	37.06	31.36	22.27	22.19	17.21	12.71	12.79	11.66	7.02
MEAN	2.56	1.40	1.44	1.20	1.08	.72	.74	.56	.42	.41	.38	.23
MAX	9.4	2.0	1.6	1.6	1.6	1.0	1.0	.78	1.1	1.0	1.4	.95
MIN	1.7	.91	1.3	.76	.59	.50	.51	.45	.25	.26	.09	.00
AC-FT	157	84	88	74	62	44	44	34	25	25	23	14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1996, BY WATER YEAR (WY)

MEAN	35.8	15.3	20.6	16.3	22.4	26.2	27.3	36.2	105	59.9	33.5	23.3
MAX	261	219	498	292	510	535	349	427	1493	1066	709	210
(WY)	1970	1959	1992	1992	1992	1992	1992	1987	1987	1973	1971	1958
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1953	1953	1953	1953	1956	1956	1953	1953	1953	1962	1962

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1953 - 1996	
ANNUAL TOTAL	626.42		340.21			
ANNUAL MEAN	1.72		.93		35.2	
HIGHEST ANNUAL MEAN					265	1992
LOWEST ANNUAL MEAN					.070	1963
HIGHEST DAILY MEAN	87	Sep 23	9.4	Oct 31	17100	Jun 17 1958
LOWEST DAILY MEAN	.18	Aug 19	.00	Sep 16	.00	Oct 1 1952
ANNUAL SEVEN-DAY MINIMUM	.25	Aug 16	.00	Sep 16	.00	Oct 1 1952
INSTANTANEOUS PEAK FLOW			52	Oct 31	73300	Jun 17 1958
INSTANTANEOUS PEAK STAGE			4.53	Oct 31	33.30	Jun 17 1958
ANNUAL RUNOFF (AC-FT)	1240		675		25470	
10 PERCENT EXCEEDS	2.0		1.7		45	
50 PERCENT EXCEEDS	1.2		.74		1.5	
90 PERCENT EXCEEDS	.46		.31		.10	

08200000 HONDO CREEK NEAR TARPLEY, TX

LOCATION.--Lat 29°34'10", long 99°14'47", Medina County, Hydrologic Unit 12110107, on left bank 460 ft downstream from bridge on Ranch Road 462, 6.3 mi southeast of Tarpley, and 16.6 mi northwest of Hondo.

DRAINAGE AREA.--95.6 mi².

PERIOD OF RECORD.--August 1952 to current year.
Water-quality records.--Chemical analyses: November 1965 to September 1969. Chemical and biochemical analyses: February 1970 to September 1993. Pesticide analyses: August 1971 to September 1993. Sediment analyses: November to December 1965.

REVISED RECORDS.--WSP 1712: 1957. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,169.1 ft, from Magnolia Oil Co. datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. There are several small diversions for irrigation above station. Rain gage at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1932 reached a stage of about 26 ft (discharge, 58,500 ft³/s), from information by local resident. Maximum stage since at least 1907, that of June 17, 1958.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	30	11	9.0	5.6	6.2	2.5	e1.4	e.00	e.00	.00	e.00
2	32	21	11	8.4	6.4	5.2	2.3	e1.3	e.00	e.00	e.00	e.00
3	30	17	11	8.3	5.8	5.2	2.6	e1.5	e.00	e.00	e.00	e.00
4	29	16	11	8.0	5.6	5.3	2.5	e1.4	e.00	e.00	e.00	e.00
5	28	16	11	8.0	5.8	5.6	3.1	e1.3	e.00	e.00	e.00	e2.0
6	26	16	11	7.7	5.8	5.0	4.3	1.2	e.00	e.00	e.00	e1.4
7	25	16	11	7.5	5.7	3.9	2.6	e1.2	e.00	e.00	e.00	e1.2
8	25	15	10	7.3	5.7	3.8	2.6	e1.2	e.00	.00	e.00	e1.0
9	24	15	10	7.2	5.5	4.0	2.5	e1.2	e.00	e.00	e.00	1.5
10	24	14	9.6	7.2	5.5	3.8	2.5	e1.1	e.00	e.00	e.00	e1.4
11	23	14	9.6	8.6	5.0	3.7	2.3	e1.0	e.00	e.00	e.00	e1.2
12	23	13	9.5	9.3	4.8	3.7	2.6	e1.0	e.00	e.00	e.00	e1.1
13	22	13	9.6	9.0	5.5	3.9	2.2	e.90	e.00	e.00	e.00	e.90
14	21	13	9.6	7.0	5.4	3.8	1.9	e.86	e.00	e.00	e.00	e.80
15	21	13	9.5	6.9	5.1	3.7	e1.9	e.74	e.00	e.00	e.00	e.75
16	20	13	9.0	6.7	4.4	3.6	e1.8	e.59	e.00	e.00	e.00	e.72
17	20	16	9.6	6.7	4.4	3.5	e1.7	e.47	e.00	e.00	e.00	e.60
18	20	18	15	6.5	4.8	3.2	e1.7	e.30	e.00	e.00	e.00	e.50
19	19	16	13	6.0	4.5	2.8	e1.8	e.20	e.00	e.00	e.00	e.47
20	18	15	11	6.2	4.4	2.9	e1.8	e.16	e.00	e.00	e.00	e.43
21	17	14	11	6.2	4.4	2.7	e1.6	e.12	e.00	e.00	e.00	e.41
22	18	14	11	6.3	4.1	2.7	e1.6	e.10	e.00	e.00	e.00	e.36
23	17	14	10	6.4	4.1	2.7	e1.7	e.08	e.00	e.00	e.00	e.32
24	16	13	9.7	5.9	3.6	3.2	e1.8	e.05	e.00	e.00	e.00	e.28
25	17	13	9.6	5.9	3.8	3.0	e1.5	e.03	e.00	e.00	e.00	e.24
26	17	13	9.6	5.9	4.0	3.0	e1.4	e.03	e.00	e.00	e.00	e.22
27	16	13	9.6	5.3	4.0	4.4	e1.4	e.02	e.00	e.00	e.00	e.20
28	15	12	9.4	5.7	4.2	3.9	e1.5	e.02	e.00	e.00	e.00	e.18
29	16	12	9.1	5.9	7.2	3.4	e1.5	e.02	e.00	e.00	e.00	e.18
30	17	12	9.1	5.9	---	3.6	e1.4	e.01	e.00	e.00	e.00	e.17
31	19	---	9.1	5.5	---	2.8	---	e.00	---	e.00	e.00	---
TOTAL	669	450	319.2	216.4	145.1	118.2	62.6	19.50	0.00	0.00	0.00	18.53
MEAN	21.6	15.0	10.3	6.98	5.00	3.81	2.09	.63	.000	.000	.000	.62
MAX	34	30	15	9.3	7.2	6.2	4.3	1.5	.00	.00	.00	2.0
MIN	15	12	9.0	5.3	3.6	2.7	1.4	.00	.00	.00	.00	.00
AC-FT	1330	893	633	429	288	234	124	39	.00	.00	.00	37
CFSM	.23	.16	.11	.07	.05	.04	.02	.01	.00	.00	.00	.01
IN.	.26	.18	.12	.08	.06	.05	.02	.01	.00	.00	.00	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1996, BY WATER YEAR (WY)

MEAN	34.5	25.3	33.7	27.2	34.9	36.5	35.4	66.5	92.0	38.7	36.3	28.4
MAX	254	134	541	172	342	323	178	402	1056	574	654	153
(WY)	1972	1959	1992	1992	1992	1992	1992	1987	1987	1973	1971	1958
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1956	1955	1955	1956	1956	1956	1956	1956	1996	1996	1984	1955

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1952 - 1996	
ANNUAL TOTAL	6951.12		2018.53			
ANNUAL MEAN	19.0		5.52		40.8	
HIGHEST ANNUAL MEAN					205	1992
LOWEST ANNUAL MEAN					.41	1956
HIGHEST DAILY MEAN	400	Sep 21	34	Oct 1	11900	Jun 17 1958
LOWEST DAILY MEAN	.25	Sep 13	.00	May 31	.00	Sep 1 1952
ANNUAL SEVEN-DAY MINIMUM	1.0	Sep 7	.00	May 31	.00	Sep 1 1952
INSTANTANEOUS PEAK FLOW			42	Nov 1	69800	Jun 17 1958
INSTANTANEOUS PEAK STAGE			1.39	Nov 1	28.20	Jun 17 1958
ANNUAL RUNOFF (AC-FT)	13790		4000		29570	
ANNUAL RUNOFF (CFSM)	.20		.058		.43	
ANNUAL RUNOFF (INCHES)	2.70		.79		5.80	
10 PERCENT EXCEEDS	31		16		81	
50 PERCENT EXCEEDS	14		2.7		12	
90 PERCENT EXCEEDS	5.5		.00		.10	

e Estimated

08200700 HONDO CREEK AT KING WATERHOLE NEAR HONDO, TX

LOCATION.--Lat 29°23'26", long 99°09'04", Medina County, Hydrologic Unit 12110107, on left bank 0.3 mi downstream from county road low-water crossing, 3.1 mi north of Hondo, 7.8 mi upstream from Verde Creek, and 55.4 mi upstream from mouth.

DRAINAGE AREA.--149 mi².

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

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 897.87 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Most of the low flow enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses the basin between Tarpley (station 08200000) and this station. There are several small diversions above station for irrigation. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 21 ft in September 1919, from information by local resident. Other outstanding floods occurred in July 1932, stage 18 ft, and June 17, 1958, stage 17 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
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	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.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	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.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	.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	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1996, BY WATER YEAR (WY)

MEAN	9.35	.52	11.7	3.05	7.60	9.06	6.88	32.2	53.7	15.4	34.6	7.77
MAX	160	10.8	379	56.9	187	168	89.5	468	1060	509	1015	151
(WY)	1972	1972	1992	1968	1992	1992	1981	1987	1987	1973	1971	1980
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1962	1961	1962	1961	1962	1962	1961	1961	1962	1962	1961	1961

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1961 - 1996	
ANNUAL TOTAL	465.42					
ANNUAL MEAN	1.28				16.0	
HIGHEST ANNUAL MEAN					128	1987
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	177	Sep 20			11700	Aug 13 1971
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 1 1960
INSTANTANEOUS PEAK FLOW					51800	May 29 1987
INSTANTANEOUS PEAK STAGE					17.19	May 29 1987
ANNUAL RUNOFF (AC-FT)	923				11620	
10 PERCENT EXCEEDS	.00		.00		.30	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX

LOCATION.--Lat 29°34'23", long 99°24'10", Medina County, Hydrologic Unit 12110107, on right bank 200 ft upstream from county road crossing, 4.5 mi downstream from Cascade Creek, 7.9 mi southeast of Utopia, and 58.0 mi upstream from mouth.

DRAINAGE AREA.--45.0 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1961 to current year.
Water-quality records.--Chemical analyses: November 1965 to September 1969. Chemical and biochemical analyses: March 1970 to September 1993. Pesticide analyses: January 1974 to September 1993. Sediment analyses: November 1965.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 1,265.8 ft, from Magnolia Oil Company datum, adjustment unknown.

REMARKS.--No estimated daily discharges. Records good. No known diversions above station. Rain gage at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1901, 16.4 ft June 17, 1958, from floodmarks (discharge, 52,600 ft³/s, by slope-area measurement of peak flow).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	19	5.7	4.6	3.4	3.7	1.5	.79	2.2	.04	.03	3.8
2	24	12	5.7	4.3	3.6	2.6	1.4	.79	2.0	.04	.03	2.9
3	22	8.7	5.7	4.3	3.5	2.4	1.4	.68	8.9	.04	.03	1.9
4	21	8.4	5.7	4.3	3.3	2.4	1.5	.59	2.5	.04	.02	1.7
5	19	8.4	5.7	4.3	3.1	2.4	1.8	.58	1.8	.04	.02	1.5
6	18	8.4	5.7	4.3	3.1	2.4	2.5	.58	1.5	.04	.02	1.3
7	16	8.0	5.7	4.1	3.1	1.9	1.9	.58	1.2	.02	.02	1.1
8	16	7.0	5.7	3.9	3.1	1.7	1.7	.58	.89	.02	.03	.88
9	15	7.0	5.3	3.9	3.1	1.8	1.6	.58	.64	.02	.04	.79
10	14	7.0	5.3	3.9	3.1	1.8	1.5	.58	.50	.04	.03	.68
11	14	6.2	5.3	3.9	3.1	1.8	1.4	1.4	.46	.03	.03	.64
12	14	6.1	5.3	3.9	2.8	1.8	1.4	1.4	.40	.03	.03	.58
13	13	6.1	5.3	3.9	2.8	1.8	1.3	1.1	.36	.03	.02	.50
14	12	6.1	5.3	3.9	2.8	1.8	1.2	.92	.36	.03	.03	.44
15	11	6.1	5.3	3.9	2.8	1.8	1.1	.91	.33	.03	.03	39
16	11	6.1	5.0	3.9	2.6	1.8	1.1	.77	.29	.03	.01	3.2
17	11	9.7	5.3	3.9	2.4	1.8	1.1	.76	.27	.02	.01	1.5
18	11	11	15	3.6	2.4	1.7	1.1	.68	.23	.02	.00	1.4
19	10	8.2	6.3	3.4	2.4	1.7	1.1	.58	.23	.02	.00	1.3
20	9.1	7.8	6.1	3.4	2.4	1.7	1.1	.50	.17	.02	.02	1.2
21	9.0	7.4	6.1	3.4	2.4	1.7	1.1	.50	.14	.02	.07	.92
22	9.0	7.2	6.0	3.4	2.4	1.7	1.1	.54	.10	.02	.04	.79
23	8.4	7.0	5.3	3.4	2.4	1.6	1.1	.49	.07	.02	.05	.68
24	7.5	6.5	5.3	3.4	2.1	1.6	1.1	.42	.06	.02	.11	.50
25	7.4	6.5	5.3	3.4	2.0	1.7	1.1	.42	.06	.07	.08	.50
26	7.4	6.5	5.0	3.4	2.0	1.8	1.0	.42	.08	.04	.36	.42
27	7.4	6.4	4.9	3.4	2.1	2.0	.92	1.2	.09	.02	1.2	.42
28	6.9	5.8	4.9	3.4	2.2	2.2	.92	1.2	.06	.02	1.2	.42
29	6.5	5.7	4.6	3.4	3.2	1.9	.89	1.4	.05	.02	.93	.36
30	6.5	5.7	4.6	3.4	---	1.8	.79	1.4	.04	.02	.68	.29
31	6.7	---	4.6	3.4	---	1.7	---	1.9	---	.03	2.3	---
TOTAL	388.8	232.0	177.0	117.0	79.7	60.5	38.72	25.24	25.98	0.90	7.47	71.61
MEAN	12.5	7.73	5.71	3.77	2.75	1.95	1.29	.81	.87	.029	.24	2.39
MAX	25	19	15	4.6	3.6	3.7	2.5	1.9	8.9	.07	2.3	39
MIN	6.5	5.7	4.6	3.4	2.0	1.6	.79	.42	.04	.02	.00	.29
AC-FT	771	460	351	232	158	120	77	50	52	1.8	15	142
CFSM	.28	.17	.13	.08	.06	.04	.03	.02	.02	.00	.01	.05
IN.	.32	.19	.15	.10	.07	.05	.03	.02	.02	.00	.01	.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1996, BY WATER YEAR (WY)

MEAN	19.1	11.5	17.3	12.8	14.8	15.9	14.8	27.0	39.2	22.8	21.1	15.3
MAX	169	48.8	241	92.9	136	134	91.1	120	471	276	279	63.1
(WY)	1972	1987	1992	1992	1992	1992	1992	1987	1987	1973	1971	1967
MIN	.24	.50	.40	.67	1.08	.70	1.29	.64	.15	.010	.005	.000
(WY)	1964	1964	1964	1963	1963	1963	1996	1984	1989	1989	1989	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1961 - 1996	
ANNUAL TOTAL	3889.0		1224.92			
ANNUAL MEAN	10.7		3.35		19.4	
HIGHEST ANNUAL MEAN					87.4	1992
LOWEST ANNUAL MEAN					.97	1989
HIGHEST DAILY MEAN	206	Sep 21	39	Sep 15	3200	Jul 15 1973
LOWEST DAILY MEAN	1.2	Sep 7	.00	Aug 18	.00	Jul 30 1963
ANNUAL SEVEN-DAY MINIMUM	1.3	Sep 1	.01	Aug 13	.00	Jul 30 1963
INSTANTANEOUS PEAK FLOW			396	Sep 15	38500	Jul 15 1973
INSTANTANEOUS PEAK STAGE			2.95	Sep 15	14.40	Jul 15 1973
ANNUAL RUNOFF (AC-FT)	7710		2430		14050	
ANNUAL RUNOFF (CFSM)	.24		.074		.43	
ANNUAL RUNOFF (INCHES)	3.21		1.01		5.86	
10 PERCENT EXCEEDS	19		7.9		40	
50 PERCENT EXCEEDS	7.0		1.8		5.3	
90 PERCENT EXCEEDS	2.1		.03		.80	

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1965 to September 1969. Chemical and biochemical analyses: March 1970 to 1993, August 1994 to current year. Pesticide analyses: January 1974 to 1993, August 1994 to current year. Sediment analyses: November 1965.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
JAN 22...	1330	3.4	430	8.3	14.0	10.2	103	0.4	290	21	210
MAY 29...	1340	1.4	362	8.2	33.5	9.4	138	1.2	28	22	160

DATE	HARD-NESS NONCARB DISSOLV FLD, AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
JAN 22...	56	63	12	6.5	0.2	0.90	150	46	9.6	0.20	10
MAY 29...	44	46	10	7.6	0.3	1.1	110	52	12	0.20	14

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	SEDI-MENT, SUS-PENDED (MG/L)
JAN 22...	240	0.150	<0.010	0.150	0.150	<0.015	--	<0.20	<0.010	<0.010	9
MAY 29...	211	0.090	<0.010	0.090	0.090	0.020	0.18	0.20	0.010	<0.010	5

DATE	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. STEVE DIAM. % FINER THAN .062 MM	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
JAN 22...	0.06	59	<1	26	<0.5	<1.0	<5	<3	<10	<3	<1
MAY 29...	0.02	79	<1	25	<0.5	<1.0	<5	<3	<10	<3	<1

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	AME-TRYNE TOTAL (UG/L)
JAN 22...	5	<1	<0.1	<10	<10	<1	<1.0	430	<6	5	<0.10
MAY 29...	<4	1	<0.1	<10	<10	<1	<1.0	370	<6	<3	<0.10

DATE	ATRA-ZINE WATER UNFLTRD REC (UG/L)	CYAN-AZINE TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
JAN 22...	<0.1	<0.20	<0.20	<0.10	<0.10	<0.01	<0.10	<0.10	<0.01	<0.01	<0.01
MAY 29...	<0.1	<0.20	<0.20	<0.10	<0.10	<0.01	<0.10	<0.10	<0.01	<0.01	<0.01

08202700 SECO CREEK AT ROWE RANCH NEAR D'HANIS, TX

LOCATION.--Lat 29°21'43", long 99°17'05", Medina County, Hydrologic Unit 12110107, on left bank 2.9 mi north of D'Hanis and 8.0 mi downstream from Rocky Creek.

DRAINAGE AREA.--168 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 900.88 ft above sea level. Prior to October 1970, published as "at Crook Ranch, near D'Hanis".

REMARKS.--Records good. All of low flow from Seco Creek enters the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin between Miller Ranch (station 08201500) and this station. There are no known diversions above station. Rain gage at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 35.7 ft May 31, 1935, from information by local resident. Other floods occurred Aug. 31, 1894, 33 ft; September 1919, 28 ft; July 2, 1932, 28.2 ft (discharge, 35,800 ft³/s, by slope-area measurement); and June 17, 1958, 32.4 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
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	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	e.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	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.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	.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	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1996, BY WATER YEAR (WY)

MEAN	7.00	.002	4.82	.70	1.06	1.69	3.38	12.4	19.7	8.57	27.4	4.68
MAX	183	.057	117	24.7	33.2	27.0	74.6	277	345	275	862	58.5
(WY)	1972	1977	1992	1968	1992	1992	1981	1987	1987	1973	1971	1980
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1962	1961	1961	1961	1961	1961	1961	1961	1962	1962	1961	1961

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1961 - 1996	
ANNUAL TOTAL	9.63					
ANNUAL MEAN	.026				7.77	
HIGHEST ANNUAL MEAN					73.3	1971
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	6.6	Sep 20			8310	May 29 1987
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Nov 1 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Nov 1 1960
INSTANTANEOUS PEAK FLOW			.00	Oct 1	35800	May 29 1987
INSTANTANEOUS PEAK STAGE			6.03	Oct 1	28.20	May 29 1987
ANNUAL RUNOFF (AC-FT)	19				5630	
10 PERCENT EXCEEDS	.00		.00		.00	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated

08205500 FRIO RIVER NEAR DERBY, TX

LOCATION.--Lat 28°44'11", long 99°08'40", Frio County, Hydrologic Unit 12110106, on right bank 17 ft downstream from centerline of railroad tracks, 35 ft right of the Missouri Pacific Railroad Co. bridge abutment, 167 ft downstream from Interstate Highway 35, 917 ft downstream from Leona River, 2.5 mi south of Derby, and 115.1 mi upstream from mouth.

DRAINAGE AREA.--3,429 mi².

PERIOD OF RECORD.--August 1915 to current year.

REVISED RECORDS.--WSP 568: 1915-16, 1918-22. WSP 1312: 1917-18(M). WSP 1923: 1954. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 449.11 ft above sea level. Aug. 1, 1915, to Apr. 21, 1931, nonrecording gage, and Apr. 22, 1931, to Mar. 6, 1940, water-stage recorder at same site and datum. Mar. 7, 1940, to May 4, 1972, water-stage recorder, and May 5 to Nov. 1, 1972, nonrecording gage at site 167 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Part of flow of the Frio River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone upstream from U.S. Highway 90 (see REMARKS for stations 08197500, 08198500, 08200700, and 08202700). There is considerable loss of flow into various permeable formations downstream from the Balcones Fault Zone. There are many small diversions for irrigation above station. Maximum stage since at least 1860 that of July 4, 1932. Rain gage at station. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	7.0	25	24	17	2.5	6.0	.79	.00	.00	.00	.00
2	19	6.5	25	25	19	4.3	6.4	.30	.53	.00	.00	.00
3	20	8.9	25	28	19	5.5	6.6	.14	100	.00	.00	.00
4	12	22	25	27	18	5.2	6.9	.08	91	.00	.00	.00
5	10	14	25	24	17	5.1	6.9	.03	54	.00	.00	.00
6	9.5	12	25	23	18	5.2	6.9	.01	18	.00	.00	.00
7	9.5	11	24	23	18	4.2	7.4	.00	6.1	.00	.00	.00
8	9.4	11	22	23	17	4.1	9.1	.00	1.4	.00	.00	.00
9	8.1	11	22	23	18	4.9	9.5	.00	.21	.00	.00	.00
10	7.7	12	23	23	19	5.3	9.5	.00	.05	.00	.00	.00
11	8.1	11	23	23	19	5.5	9.6	.00	.01	.00	.00	.00
12	7.6	11	24	24	15	8.2	11	.00	.00	.00	.00	.00
13	7.8	12	24	23	12	9.5	9.9	.00	.00	.00	.00	.00
14	8.5	12	25	20	12	11	9.0	.00	.00	.00	.00	.00
15	8.1	12	26	19	11	11	7.8	.00	.00	.00	.00	.00
16	8.1	12	26	19	11	8.5	6.5	.00	.00	.00	.00	.00
17	8.1	20	26	19	11	7.6	6.0	.00	.00	.00	.00	.00
18	8.4	29	26	20	11	6.7	6.3	.00	.00	.00	.00	.00
19	8.8	32	26	18	11	5.9	6.3	.00	.00	.00	.00	.00
20	9.5	28	25	17	10	5.3	6.1	.00	.00	.00	.00	.00
21	9.1	30	25	18	8.8	5.6	5.0	.00	.00	.00	.00	.00
22	8.8	28	26	18	8.8	6.3	3.5	.00	.00	.00	.00	.00
23	9.4	25	25	17	7.0	6.3	2.6	.00	.00	.00	.00	.00
24	8.5	23	23	18	6.3	6.6	2.1	.00	.00	.00	.00	.00
25	8.1	23	23	19	6.3	5.9	1.7	.00	.00	.00	.00	.00
26	8.1	23	23	19	5.7	5.5	1.6	.00	.00	.00	.00	.00
27	8.7	23	23	17	4.8	6.4	1.2	.00	.00	.00	.00	.00
28	7.6	23	25	18	3.6	7.0	.77	.00	.00	.00	.00	.00
29	7.0	23	27	18	2.5	6.9	1.3	.00	.00	.00	.00	.00
30	6.6	24	27	18	---	6.0	.74	.00	.00	.00	.00	.00
31	7.4	---	26	17	---	5.5	---	.00	---	.00	.00	---
TOTAL	301.5	539.4	765	642	356.8	193.5	174.21	1.35	271.30	0.00	0.00	0.00
MEAN	9.73	18.0	24.7	20.7	12.3	6.24	5.81	.044	9.04	.000	.000	.000
MAX	24	32	27	28	19	11	11	.79	100	.00	.00	.00
MIN	6.6	6.5	22	17	2.5	2.5	.74	.00	.00	.00	.00	.00
AC-FT	598	1070	1520	1270	708	384	346	2.7	538	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 1996, BY WATER YEAR (WY)

MEAN	159	46.5	46.5	52.0	61.4	48.4	116	204	356	255	141	199
MAX	1813	674	950	559	988	1079	1072	2320	8069	8943	5648	3247
(WY)	1920	1920	1992	1992	1992	1992	1957	1935	1935	1932	1971	1919
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1918	1916	1916	1916	1916	1916	1917	1917	1918	1918	1917	1922

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1915 - 1996	
ANNUAL TOTAL	13015.9		3245.06			
ANNUAL MEAN	35.7		8.87		140	
HIGHEST ANNUAL MEAN					1087	1935
LOWEST ANNUAL MEAN					1.76	1952
HIGHEST DAILY MEAN	1600	Sep 24	100	Jun 3	135000	Jul 4 1932
LOWEST DAILY MEAN	1.9	Aug 16	.00	May 7	.00	Aug 1 1915
ANNUAL SEVEN-DAY MINIMUM	2.5	Aug 12	.00	May 7	.00	Aug 1 1915
INSTANTANEOUS PEAK FLOW			113	Jun 3	230000	Jul 4 1932
INSTANTANEOUS PEAK STAGE			1.45	Jun 3	29.45	Jul 4 1932
ANNUAL RUNOFF (AC-FT)	25820		6440		101700	
10 PERCENT EXCEEDS	45		24		150	
50 PERCENT EXCEEDS	22		6.1		5.4	
90 PERCENT EXCEEDS	4.5		.00		.00	

08206600 FRIO RIVER AT TILDEN, TX

LOCATION.--Lat 28°28'02", long 98°32'50", McMullen County, Hydrologic Unit 12110108, on left bank 80 ft downstream from bridge on State Highway 16 in Tilden, 300 ft downstream from Leoncita Creek, 1.3 mi upstream from Salt Branch, 1.8 mi downstream from Big Slough, and 44.2 mi upstream from mouth.

DRAINAGE AREA.--4,493 mi².

PERIOD OF RECORD.--July 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 216.04 ft above sea level. July 14, 1978, to Sept. 13, 1994, at site 80 ft upstream at same datum.

REMARKS.--Records good. Part of the flow of the Frio River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin upstream from U. S. Highway 90 (see REMARKS paragraph for station 08205500). Considerable flow into various permeable formations also occurs downstream from the Balcones Fault Zone. There are many small diversions above station for irrigation. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1932 reached a stage of 38.44 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Sept. 2	2400	1,890	16.49				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	8.8	27	25	17	5.2	3.5	1.6	.07	.00	.00	471
2	59	8.7	26	26	16	4.8	3.5	1.3	.09	.00	.00	1360
3	47	8.7	26	26	15	4.6	3.8	1.2	6.0	.00	.00	1510
4	34	8.4	27	26	15	4.5	4.1	1.0	e2.3	.00	.00	e454
5	28	8.4	28	26	14	4.2	4.2	.95	e2.4	.00	.00	38
6	22	8.4	28	25	14	3.8	4.2	.83	1.4	.00	.00	20
7	20	8.4	28	25	14	2.8	4.0	.66	.73	.00	.00	12
8	17	8.7	28	25	15	2.5	3.7	.56	22	.00	.00	8.8
9	13	16	28	26	14	2.0	3.7	.45	31	.00	.00	30
10	12	15	27	26	14	1.7	3.8	.46	16	.00	.00	61
11	11	12	27	26	15	2.1	3.6	.48	9.3	.00	.00	26
12	11	12	27	25	15	2.5	3.5	.71	5.6	.00	.00	14
13	11	12	27	24	15	2.5	3.6	8.2	3.3	.00	.00	9.1
14	11	11	27	24	14	2.4	3.6	4.8	1.9	.00	.00	6.4
15	11	11	27	23	14	2.4	3.8	2.9	1.1	.00	.00	4.5
16	10	11	28	23	13	2.4	4.1	1.8	.65	.00	.00	3.2
17	9.4	16	28	23	13	2.3	4.1	1.3	.37	.00	.00	4.3
18	8.0	69	29	23	12	2.3	4.0	.95	.20	.00	.00	2.4
19	7.5	717	28	21	11	2.3	3.9	.67	.13	.00	.00	1.7
20	7.5	996	28	19	9.6	2.7	3.7	.43	.09	.00	.00	167
21	7.5	520	28	18	8.9	3.3	3.5	.23	.06	.00	.00	329
22	7.5	182	28	18	8.9	5.9	3.5	.14	.01	.00	.00	130
23	7.5	92	27	18	8.6	5.8	3.5	.10	.00	.00	.00	35
24	7.3	62	27	18	8.4	4.2	3.2	.04	.00	.00	.00	19
25	7.4	50	27	18	8.1	3.5	2.8	.02	.00	.00	.00	11
26	7.9	41	27	18	7.4	3.2	2.6	.00	.00	.00	.00	6.6
27	8.0	34	27	18	6.9	3.5	2.4	.00	.00	.00	.00	4.2
28	8.0	29	26	17	6.0	3.5	2.4	.00	.00	.00	.00	2.6
29	8.4	28	25	17	5.6	3.5	2.3	.00	.00	.00	.00	4.3
30	9.2	27	25	17	---	3.4	2.0	.00	.00	.00	.05	13
31	8.9	---	25	17	---	3.4	---	.00	---	.00	8.3	---
TOTAL	524.0	3031.5	841	681	348.4	103.2	104.6	31.78	104.70	0.00	8.35	4758.1
MEAN	16.9	101	27.1	22.0	12.0	3.33	3.49	1.03	3.49	.000	.27	159
MAX	87	996	29	26	17	5.9	4.2	8.2	31	.00	8.3	1510
MIN	7.3	8.4	25	17	5.6	1.7	2.0	.00	.00	.00	.00	1.7
AC-FT	1040	6010	1670	1350	691	205	207	63	208	.00	17	9440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1996, BY WATER YEAR (WY)

MEAN	190	54.2	123	125	145	116	137	223	837	191	96.9	107
MAX	861	160	1314	877	1745	1188	935	1171	8992	1232	609	315
(WY)	1986	1993	1992	1992	1992	1992	1992	1980	1987	1990	1978	1991
MIN	.12	.24	.27	.45	.32	2.91	.55	1.03	.032	.000	.045	.52
(WY)	1991	1991	1991	1991	1990	1984	1984	1996	1984	1996	1985	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1978 - 1996	
ANNUAL TOTAL	15042.86		10536.63			
ANNUAL MEAN	41.2		28.8		192	
HIGHEST ANNUAL MEAN					1000	1987
LOWEST ANNUAL MEAN					7.06	1984
HIGHEST DAILY MEAN	996	Nov 20	1510	Sep 3	20100	Jun 9 1987
LOWEST DAILY MEAN	.56	Aug 29	.00	May 26	.00	Apr 16 1984
ANNUAL SEVEN-DAY MINIMUM	1.0	Aug 24	.00	Jun 23	.00	Apr 22 1984
INSTANTANEOUS PEAK FLOW			1890	Sep 2	20900	Jun 9 1987
INSTANTANEOUS PEAK STAGE			16.49	Sep 2	29.18	Jun 9 1987
ANNUAL RUNOFF (AC-FT)	29840		20900		139200	
10 PERCENT EXCEEDS	64		28		274	
50 PERCENT EXCEEDS	22		5.6		29	
90 PERCENT EXCEEDS	3.1		.00		.32	

e Estimated

08206700 SAN MIGUEL CREEK NEAR TILDEN, TX

LOCATION.--Lat 28°35'14", long 98°32'44", McMullen County, Hydrologic Unit 12110109, on left bank 25 ft downstream from State Highway 16, 0.3 mi upstream from mouth of Bruce Branch, 0.9 mi downstream from mouth of Far Live Oak Creek, 3 mi upstream from San Patricio Creek, 7 mi downstream from Clear Creek, 8.7 mi north of Tilden, and 12.9 mi upstream from mouth.

DRAINAGE AREA.--783 mi².

PERIOD OF RECORD.--January 1964 to current year.
Water-quality records.--Chemical and biochemical analyses: July 1978 to September 1984.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 242.95 ft above sea level.

REMARKS.--Records good. There are five diversions above station, but amounts are unknown. At times, excessive amount of water from Bexar-Medina-Atascosa Counties Water Improvement District No. 1 system enters San Miguel Creek basin via Chacon Creek 52 mi upstream (amounts unknown). Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1919, 32.6 ft in 1942; stage of 1919 flood not known, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Aug. 31	0400	1,220	12.48				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	43
2	32	.00	.00	.00	.00	.00	.00	.86	.00	.00	.00	19
3	.49	.00	.00	.00	.00	.00	.00	.09	28	.00	.00	11
4	.02	.00	.00	.00	.00	.00	.00	.01	6.8	.00	.00	7.5
5	.00	.00	.00	.00	.00	.00	.00	.00	5.7	.00	.00	4.7
6	.00	.00	.00	.00	.00	.00	.00	.00	2.2	.00	.00	3.1
7	.00	.00	.00	.00	.00	.00	.00	.00	.54	.00	.00	2.5
8	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	2.2
9	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	e1.2
10	.00	.00	.00	.00	.00	.00	.00	22	1.6	.00	.00	.28
11	.00	.00	.00	.00	.00	.00	.00	156	.54	.00	.00	.03
12	.00	.00	.00	.00	.00	.00	.00	46	.10	.00	.00	.82
13	.00	.00	.00	.00	.00	.00	.00	21	.03	.00	.00	14
14	.00	.00	.00	.00	.00	.00	.00	7.5	.07	.00	.00	11
15	.00	.00	.00	.00	.00	.00	.00	5.3	1.6	.00	.00	7.2
16	.00	.00	.00	.00	.00	.00	.00	3.6	.35	.00	.00	53
17	.00	.00	.00	.00	.00	.00	.00	1.4	.03	.00	.00	89
18	.00	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	51
19	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	291
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	283
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	328
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	68
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	29
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.7	15
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	8.4
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.1
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.9
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.3
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.9	1.4
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	469	.44
31	.00	---	.00	.00	---	.00	---	.00	---	.00	503	---
TOTAL	46.51	0.00	0.00	0.00	0.00	0.00	0.00	264.19	48.84	0.00	979.70	1357.07
MEAN	1.50	.000	.000	.000	.000	.000	.000	8.52	1.63	.000	31.6	45.2
MAX	32	.00	.00	.00	.00	.00	.00	156	28	.00	503	328
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03
AC-FT	92	.00	.00	.00	.00	.00	.00	524	97	.00	1940	2690

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1996, BY WATER YEAR (WY)

MEAN	69.1	21.6	18.2	29.3	25.5	9.60	61.2	132	107	41.2	53.6	93.9
MAX	486	286	226	641	352	78.0	1065	900	690	748	741	1233
(WY)	1982	1993	1987	1968	1992	1992	1977	1980	1987	1990	1980	1967
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1980	1995	1989	1989	1995	1996	1996	1971	1967	1996	1991	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1964 - 1996	
ANNUAL TOTAL	1929.91		2696.31			
ANNUAL MEAN	5.29		7.37		56.4	
HIGHEST ANNUAL MEAN					161	1968
LOWEST ANNUAL MEAN					2.43	1984
HIGHEST DAILY MEAN	180	May 30	503	Aug 31	16700	May 16 1980
LOWEST DAILY MEAN	.00	Jan 2	.00	Oct 5	.00	Feb 1 1964
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 2	.00	Oct 5	.00	Feb 7 1964
INSTANTANEOUS PEAK FLOW			1220	Aug 31	20600	May 16 1980
INSTANTANEOUS PEAK STAGE			12.48	Aug 31	27.31	May 16 1980
ANNUAL RUNOFF (AC-FT)	3830		5350		40860	
10 PERCENT EXCEEDS	12		2.8		38	
50 PERCENT EXCEEDS	.00		.00		2.1	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated

08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX

LOCATION.--Lat 28°29'01", long 98°14'44", Live Oak County, Hydrologic Unit 12110108, at Choke Canyon Dam on Frio River, 3.9 mi upstream from Atascosa River, and 4.0 mi west of Three Rivers.

DRAINAGE AREA.--5,490 mi².

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Nonrecording gage read twice daily. Supplemental water-stage recorder operated by city of Corpus Christi. Datum of gage is sea level.

REMARKS.--The reservoir is formed by a rolled earthfill dam, 3.5 mi long. The dam was completed and deliberate impoundment began on Oct. 12, 1982. The spillway has seven radial gates, each 50 ft long and 24 ft high. Water for municipal and industrial use to meet the needs of the Coastal Bend area is released downstream through a 5.0- x 5.0-foot square slide gate. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	241.1	-
Top of spillway gates	222.5	743,900
Crest of spillway	199.5	269,600
Lowest gated outlet (invert)	136.3	52

COOPERATION.--Capacity table computed June 1, 1983, provided by the city of Corpus Christi. Elevation and reservoir contents record provided by the city of Corpus Christi.

EXTREMES (AT 0600 HOURS) FOR PERIOD OF RECORD.--Maximum daily contents, 733,100 acre-ft June 21, 1987 (elevation, 222.1 ft); minimum daily, 4,500 acre-ft Oct. 1-9, 1984 (elevation, 156.9 ft).

EXTREMES (AT 0600 HOURS) FOR CURRENT YEAR.--Maximum daily contents, 310,800 acre-ft Oct. 2 (elevation, 202.16 ft); minimum daily, 170,800 acre-ft Aug. 22 (elevation, 191.80 ft).

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

156.0	4,000	180.0	69,720	210.0	452,600
160.0	6,860	190.0	151,500	220.0	678,300
170.0	25,000	200.0	277,100	223.0	757,500

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 0600 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	310700	291300	284000	272900	264300	252600	238700	225600	211900	198900	179900	172800
2	310800	291300	283900	273000	264100	252200	238300	225200	211600	198400	179400	173200
3	310500	290700	283900	272400	263800	251800	238000	224700	211600	197800	178600	175000
4	309700	289600	284000	272100	263500	251300	237800	224300	211600	197400	177900	177800
5	309000	289600	283900	272000	263300	251100	237500	223900	211000	196600	177000	178900
6	308200	289600	283600	271200	263100	250800	237200	223400	210400	195900	176500	178700
7	307300	289100	283600	270800	262800	250500	236700	223100	209800	195400	175900	178500
8	306300	288500	283400	269600	262500	248900	236100	222500	209400	194700	175500	178600
9	305700	287700	282800	269000	262200	248200	235900	222400	208800	194000	175200	178400
10	305000	287100	282700	268700	261900	247800	235300	222000	208500	193400	174700	178200
11	304500	286200	282500	268800	260900	247300	234900	221300	207800	192800	173900	178200
12	303600	285400	282200	268700	260900	246700	234100	221300	207300	192300	173300	177900
13	303300	284700	281800	268500	260600	246400	234400	220900	206900	191600	172800	177600
14	302200	284000	281100	268100	260100	246000	234100	220400	206400	190900	172200	177500
15	301000	283100	280500	268100	259800	245700	233400	219800	206000	190200	172700	177400
16	299900	282700	279800	268100	258600	245300	232600	219300	205400	189500	172200	176900
17	299300	284400	279300	267800	258500	244800	232200	218900	204800	188800	171900	178100
18	298500	285700	280800	268100	258200	244900	232000	218400	204300	188200	171400	177900
19	298400	285300	279900	267200	257900	243800	231400	218000	203700	187600	171100	177900
20	297600	285900	278700	267100	257500	243000	231000	217200	203100	186900	171100	178400
21	296000	287400	277700	266900	256700	242500	230600	216700	202600	186200	171000	183800
22	295500	287900	278300	266800	256600	242100	230200	216200	201800	185500	170800	185200
23	294900	287600	277200	266800	256200	241700	230100	215700	201200	184900	171300	185400
24	293600	287000	276600	266300	255600	241600	229300	214400	200700	184400	171800	185400
25	293000	286400	275800	266000	255200	240500	228900	214500	201700	183700	171500	185200
26	292600	285400	275100	266000	254700	240500	228400	214200	201500	183100	171400	184900
27	292100	285000	274500	265600	254500	240500	228000	213700	201000	183000	171500	184800
28	291200	284400	273700	265200	253900	240100	227300	213300	200400	182400	171400	184100
29	290800	284200	272900	265200	253300	239800	227300	213000	200000	181800	171100	183600
30	291300	284000	272900	265000	---	239800	226300	212500	199500	181100	171000	183100
31	291200	---	273000	264400	---	239400	---	212000	---	180400	171600	---
MAX	310800	291300	284000	273000	264300	252600	238700	225600	211900	198900	179900	185400
MIN	290800	282700	272900	264400	253300	239400	226300	212000	199500	180400	170800	172800
(+)	200.9	200.5	199.7	199.2	198.4	197.4	196.4	195.3	194.3	192.7	191.9	192.9
(@)	-19600	-7200	-11000	-8600	-11100	-13900	-13100	-14300	-12500	-19100	-8800	+11500

CAL YR 1995 MAX 448200 MIN 272900 (@) -173600
WTR YR 1996 MAX 310800 MIN 170800 (@) -127700

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

08206910 CHOKE CANYON RESERVOIR OWC NEAR THREE RIVERS, TX

LOCATION.--Lat 28°29'09", long 98°14'29", Live Oak County, Hydrologic Unit 12110108, 0.2 mi downstream from Choke Canyon Dam on Frio River, 3.7 mi upstream from Atascosa River, and 3.8 mi west of Three Rivers.

DRAINAGE AREA.--5,490 mi².

PERIOD OF RECORD.--November 1991 to current year (low flow).

GAGE.--Water-stage recorder. Datum of gage is 124.06 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. Discharges are not published for days when instantaneous discharge exceeds 73 ft³/s. Flow is regulated by Choke Canyon Reservoir (station 08206900) 0.2 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 12.26 ft (backwater from Atascosa River) Sept. 1 at 1100 hours; minimum recorded daily discharge, 30 ft³/s Jan. 2-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	31	34	32	56	---	---	---	---	---	---	35
2	59	31	34	30	56	---	---	---	---	---	---	37
3	59	31	34	30	56	---	---	---	---	---	---	37
4	---	31	33	30	56	---	---	---	---	---	---	37
5	---	31	33	---	---	---	---	---	---	---	---	37
6	---	---	33	---	---	---	---	---	---	---	---	37
7	---	---	33	---	---	---	---	---	---	---	---	37
8	---	---	33	---	---	---	---	---	---	---	---	37
9	---	---	33	---	---	---	---	---	---	---	---	37
10	---	---	32	37	---	---	---	---	---	---	---	37
11	---	---	---	37	---	---	---	---	---	---	---	37
12	---	---	---	44	---	---	---	---	---	---	---	34
13	---	---	---	52	---	---	---	---	---	---	---	34
14	---	---	---	52	---	---	---	---	---	---	---	34
15	---	---	---	52	---	---	---	---	---	---	34	34
16	---	---	---	52	---	---	---	---	---	---	35	35
17	---	---	---	52	---	---	---	---	---	---	35	38
18	---	---	---	56	---	---	---	---	---	---	36	38
19	---	---	---	57	---	---	---	---	---	---	34	38
20	---	---	---	56	---	---	---	---	---	---	34	38
21	---	---	---	56	---	---	---	---	---	---	35	37
22	---	---	---	56	---	---	---	---	---	---	35	37
23	---	---	---	56	---	---	---	---	---	---	34	37
24	---	---	---	56	---	---	---	---	---	---	34	37
25	---	---	---	56	---	---	---	---	---	---	34	37
26	---	---	---	56	---	---	---	---	---	---	34	37
27	---	---	---	56	---	---	---	---	---	---	34	37
28	35	34	---	56	---	---	---	---	---	---	34	37
29	34	34	---	57	---	---	---	---	---	---	34	37
30	33	34	32	58	---	---	---	---	---	---	34	37
31	32	---	32	58	---	---	---	---	---	---	34	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	1098
MEAN	---	---	---	---	---	---	---	---	---	---	---	36.6
MAX	---	---	---	---	---	---	---	---	---	---	---	38
MIN	---	---	---	---	---	---	---	---	---	---	---	34

08208000 ATASCOSA RIVER AT WHITSETT, TX

LOCATION.--Lat 28°37'19", long 98°16'52", Live Oak County, Hydrologic Unit 12110110, on right bank at downstream side of bridge on Farm Road 99, 1.1 mi southwest of Whitsett, 4.2 mi downstream from La Parita Creek, and 12.9 mi upstream from mouth.

DRAINAGE AREA.--1,171 mi².

PERIOD OF RECORD.--September 1924 to May 1926, May 1932 to current year.

GAGE.--Water-stage recorder. Datum of gage is 159.04 ft above sea level. Prior to May 8, 1926, nonrecording gage at bridge destroyed in 1956 at site 200 ft downstream at 1.38 ft higher datum. May 21, 1932, to Feb. 16, 1983, water-stage recorder at site 1,000 ft upstream at same datum.

REMARKS.--Records good. Considerable loss of flow into various permeable formations occurs upstream from this station. The Campbellton water wells discharge into the Atascosa River 12 mi upstream from this station to supplement streamflow during dry periods; however, records provided by the city of Corpus Christi indicate that during the current year, the Campbellton water wells did not discharge into the Atascosa River. There are several small diversions above station. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1881, that of Sept. 23, 1967. Second highest stage, 41 ft (discharge 106,000 ft³/s), occurred in September 1919.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Aug. 31	1700	4,680	23.61				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.9	1.5	1.3	1.3	.00	.00	.00	4.3	1530
2	.00	.00	.00	1.8	1.4	1.5	1.5	.00	.00	.00	2.2	e218
3	.00	.00	.00	1.6	1.5	1.8	1.6	.00	276	.00	1.1	118
4	.00	.00	.00	1.6	1.6	1.7	1.3	.00	688	.00	.57	52
5	.00	.00	.00	1.5	1.5	1.9	1.3	.00	124	.00	.23	28
6	.00	.00	.00	1.5	1.7	1.9	1.2	.00	22	.00	.03	20
7	.93	.00	.00	1.4	1.8	2.0	e1.1	.00	11	.00	.00	17
8	.83	.00	.00	1.4	1.7	1.9	e1.1	.00	6.5	.00	.00	16
9	.01	.00	.00	1.4	1.8	1.6	e1.0	.00	4.0	.00	.00	45
10	.00	.00	.00	1.3	2.0	1.4	e.88	.00	2.3	.00	.00	59
11	.00	.00	.00	1.4	2.2	1.5	e.82	.00	1.2	.00	.00	28
12	.00	.00	.00	1.6	2.2	1.6	1.0	.00	.64	.00	.00	19
13	.00	.00	.00	1.4	2.2	1.8	1.2	.00	.33	.00	.00	11
14	.00	.00	.52	1.5	2.2	1.8	.84	.00	.14	.00	.00	8.1
15	.00	.00	.94	1.6	2.0	2.0	.49	.00	.13	.00	.00	6.2
16	.00	.00	1.1	1.7	1.7	1.7	.24	.00	.13	.00	31	48
17	.00	.00	1.1	1.7	1.7	1.7	.19	.00	.01	.00	14	56
18	.00	.00	9.5	1.6	1.8	1.6	.12	.00	.00	.00	5.7	27
19	.00	.00	8.5	1.4	1.8	1.4	.02	.00	.00	.00	3.2	71
20	.00	.00	4.9	1.6	1.7	1.3	.00	.00	.00	.00	2.5	474
21	.00	.00	.70	1.5	1.5	1.2	.00	.00	.00	.00	1.9	273
22	.00	1.2	3.6	1.5	1.5	1.2	.00	.00	.00	.00	1.9	366
23	.00	2.4	3.2	1.5	1.6	1.2	.00	.00	.00	.00	1.9	101
24	.00	2.0	4.4	1.4	1.5	1.2	.00	.00	.00	.00	6.3	39
25	.00	1.2	4.2	1.5	1.4	1.2	.00	.00	.26	.00	9.1	47
26	.00	.85	3.5	1.6	1.4	1.2	.00	.00	.87	.00	11	853
27	.00	.31	3.1	1.4	1.5	1.4	.00	.00	.08	50	46	226
28	.00	.00	3.0	1.4	1.3	1.1	.00	.00	.00	89	45	35
29	.00	.00	2.5	1.4	1.3	1.1	.00	.00	.00	34	42	20
30	.00	.00	2.1	1.5	---	1.4	.00	.00	.00	14	534	13
31	.00	---	1.9	1.5	---	1.3	---	.00	---	7.9	3290	---
TOTAL	1.77	7.96	58.76	47.1	49.0	46.9	17.20	0.00	1137.59	194.90	4053.93	4824.3
MEAN	.057	.27	1.90	1.52	1.69	1.51	.57	.000	37.9	6.29	131	161
MAX	.93	2.4	9.5	1.9	2.2	2.0	1.6	.00	688	89	3290	1530
MIN	.00	.00	.00	1.3	1.3	1.1	.00	.00	.00	.00	.00	6.2
AC-FT	3.5	16	117	93	97	93	34	.00	2260	387	8040	9570

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1996, BY WATER YEAR (WY)

MEAN	105	50.8	60.1	82.5	93.8	32.2	154	237	240	124	76.6	254
MAX	788	399	1060	2053	1590	250	2298	1365	3445	2879	1207	5006
(WY)	1947	1941	1992	1968	1992	1970	1977	1957	1935	1942	1946	1967
MIN	.048	.21	.19	1.52	1.57	1.51	.57	.000	.000	.89	.000	.12
(WY)	1989	1989	1989	1996	1990	1996	1996	1996	1989	1971	1954	1989

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1932 - 1996	
ANNUAL TOTAL	3874.25		10439.41			
ANNUAL MEAN	10.6		28.5		126	
HIGHEST ANNUAL MEAN					472	1935
LOWEST ANNUAL MEAN					2.29	1989
HIGHEST DAILY MEAN	463	Jun 1	3290	Aug 31	65000	Sep 23 1967
LOWEST DAILY MEAN	.00	Jul 31	.00	Oct 1	.00	Jun 11 1934
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 31	.00	Oct 10	.00	Jun 11 1934
INSTANTANEOUS PEAK FLOW			4680	Aug 31	121000	Sep 23 1967
INSTANTANEOUS PEAK STAGE			23.61	Aug 31	41.30	Sep 23 1967
ANNUAL RUNOFF (AC-FT)	7680		20710		91330	
10 PERCENT EXCEEDS	17		19		95	
50 PERCENT EXCEEDS	2.1		1.0		11	
90 PERCENT EXCEEDS	.00		.00		1.0	

e Estimated

08210000 NUECES RIVER NEAR THREE RIVERS, TX

LOCATION.--Lat 28°25'38", long 98°10'40", Live Oak County, Hydrologic Unit 12110111, on right bank at U.S. Highway 281, 1.0 mi downstream from Frio River, 2.2 mi south of Three Rivers, and at mile 100.2.

DRAINAGE AREA.--15,427 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1915 to current year. Monthly discharge only for November 1919 to January 1920, published in WSP 1312.

REVISED RECORDS.--WSP 548: 1920-21. WSP 1562: 1916, 1918-21, 1922(M), 1923, 1929. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 99.26 ft above sea level. Prior to Apr. 5, 1932, nonrecording gage at railroad bridge 0.8 mi upstream at datum 1.87 ft higher. Apr. 5, 1932, to Aug. 9, 1983, recording gage at a site 0.8 mi upstream at datum 1.87 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow of the Frio River is impounded in Choke Canyon Reservoir (see station 08206900), about 11 mi upstream from this station on the Frio River. Part of flow of the Nueces and Frio Rivers and their headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone upstream from U.S. Highway 90 (see REMARKS for station 08205500). Considerable loss of flow into various permeable formations also occurs downstream from the Balcones Fault Zone. There are many small diversions for irrigation and for municipal supply above this station. There is some minor upstream regulation by small reservoirs and by groundwater supplements (see station 08208000, Atascosa River at Whitsett). Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--67 years (water years 1916-82) prior to partial regulation by Choke Canyon Reservoir, 857 ft³/s (620,900 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1916-82).--Maximum discharge, 141,000 ft³/s Sept. 23, 1967 (gage height, 49.21 ft), site and datum then in use; no flow at times. Maximum stage since about 1875, that of Sept. 23, 1967.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	526	39	70	38	58	159	128	124	120	143	185	3050
2	144	38	61	37	58	159	128	124	119	143	173	1380
3	94	38	55	36	58	159	128	124	119	144	163	530
4	96	38	52	36	58	159	128	124	558	154	158	654
5	206	38	51	61	71	159	128	124	603	154	157	700
6	208	61	48	247	152	159	128	124	175	156	157	714
7	205	232	47	252	154	158	127	124	139	157	157	635
8	203	237	46	254	155	158	127	123	133	157	157	525
9	201	239	45	222	155	158	126	123	129	157	157	568
10	201	241	44	48	157	158	126	122	126	157	157	548
11	200	242	61	42	158	158	126	122	125	157	157	274
12	199	243	220	42	158	160	127	122	124	157	157	203
13	198	243	307	52	158	159	127	121	124	157	157	226
14	198	243	309	53	158	158	127	121	126	157	160	210
15	198	243	312	54	158	159	127	121	143	157	99	123
16	198	243	312	55	158	159	127	121	144	306	63	82
17	206	285	312	55	158	159	127	121	144	258	60	126
18	247	286	437	56	158	153	127	121	144	208	53	92
19	250	1230	468	56	158	126	126	121	144	186	47	80
20	249	1710	319	56	158	125	125	121	144	173	52	781
21	248	1710	308	56	158	126	125	121	144	165	39	2030
22	249	1270	318	56	158	126	125	121	144	162	38	1560
23	250	1180	310	56	159	126	125	125	146	159	446	1470
24	249	1230	308	56	159	126	124	121	145	155	151	1200
25	248	1310	305	57	159	126	124	120	147	155	170	1170
26	248	953	305	57	159	126	124	120	147	155	176	1100
27	217	369	304	57	159	126	124	119	144	155	173	1060
28	47	115	304	57	159	126	124	119	143	195	76	548
29	39	85	262	57	159	126	124	119	143	224	127	711
30	39	75	47	58	---	126	124	119	143	184	289	811
31	39	---	39	58	---	126	---	119	---	169	1210	---
TOTAL	6100	14466	6386	2377	4085	4488	3783	3771	5029	5316	5521	23161
MEAN	197	482	206	76.7	141	145	126	122	168	171	178	772
MAX	526	1710	468	254	159	160	128	125	603	306	1210	3050
MIN	39	38	39	36	58	125	124	119	119	143	38	80
AC-FT	12100	28690	12670	4710	8100	8900	7500	7480	9980	10540	10950	45940

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1996#, BY WATER YEAR (WY)

MEAN	507	315	285	261	331	236	328	568	1177	588	275	335
MAX	2126	1805	1572	1361	2808	1015	1730	2514	8451	2687	1643	1699
(WY)	1986	1986	1992	1992	1992	1992	1992	1992	1987	1990	1990	1983
MIN	41.6	21.7	10.8	10.9	10.9	10.3	4.30	10.2	39.2	26.9	1.47	1.28
(WY)	1994	1983	1984	1983	1984	1984	1984	1984	1988	1986	1984	1984

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1983 - 1996#	
ANNUAL TOTAL	100397		84483			
ANNUAL MEAN	275		231		433	
HIGHEST ANNUAL MEAN					1261	1992
LOWEST ANNUAL MEAN					82.3	1984
HIGHEST DAILY MEAN	1710	Nov 20	3050	Sep 1	17600	Sep 21 1983
LOWEST DAILY MEAN	34	Aug 10	36	Jan 3	.55	Aug 29 1984
ANNUAL SEVEN-DAY MINIMUM	34	Aug 13	38	Oct 30	.57	Aug 25 1984
INSTANTANEOUS PEAK FLOW			3500	Sep 1	18300	Sep 21 1983
INSTANTANEOUS PEAK STAGE			18.49	Sep 1	37.29	Jun 22 1987
ANNUAL RUNOFF (AC-FT)	199100		167600		314000	
10 PERCENT EXCEEDS	555		389		947	
50 PERCENT EXCEEDS	220		153		132	
90 PERCENT EXCEEDS	44		56		11	

Period of regulated streamflow.

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1941 to September 1952. Chemical and biochemical analyses: May 1965 to current year. Pesticide analyses: January 1968 to May 1982. Sediment analyses: October 1941 to August 1945, March 1951 to September 1952, October 1974 to August 1994.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1941 to September 1952, October 1974 to September 1981.
WATER TEMPERATURE: October 1950 to September 1952, October 1974 to September 1981.
SUSPENDED-SEDIMENT DISCHARGE: October 1950 to September 1951.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,310 microsiemens Jan. 17, 1977; minimum daily, 157 microsiemens May 26, 1975.
WATER TEMPERATURE: Maximum daily, 32.0°C on several days during summers of 1977, 1978, and 1981; minimum daily, 7.0°C Jan. 2, 3, 1979.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
OCT 26...	1340	248	805	7.8	22.5	7	8.3	8.5	97	K80	800	180
FEB 14...	1035	158	853	8.3	12.5	--	--	10.8	101	110	110	200
MAY 08...	1253	123	857	8.1	26.0	--	--	8.2	--	100	110	200
JUL 31...	1047	169	850	8.0	31.5	--	--	7.8	--	220	190	190
AUG 14...	1020	157	940	8.4	28.0	--	--	7.2	92	--	--	200
SEP 13...	1400	230	420	8.1	27.0	--	--	6.0	76	--	--	110

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 26...	74	48	14	78	3	11	100	76	120	0.20	18	428
FEB 14...	54	55	14	85	3	11	140	78	120	0.60	17	466
MAY 08...	70	57	15	86	3	12	130	88	140	0.20	17	498
JUL 31...	56	53	14	90	3	12	130	83	130	0.30	17	482
AUG 14...	55	54	16	97	3	13	150	91	140	0.20	17	518
SEP 13...	0	38	4.2	32	1	8.0	110	23	33	0.20	17	225

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
OCT 26...	22	10	12	--	--	<0.010	--	<0.050	<0.015	--	0.40	0.020
FEB 14...	--	--	--	0.230	--	<0.010	0.230	0.230	0.030	0.47	0.50	0.030
MAY 08...	--	--	--	0.200	0.200	0.010	0.210	0.210	0.070	0.53	0.60	0.050
JUL 31...	--	--	--	0.150	0.150	0.020	0.170	0.170	0.060	0.54	0.60	0.040
AUG 14...	--	--	--	0.410	0.410	0.010	0.420	0.420	0.040	0.46	0.50	0.050
SEP 13...	--	--	--	0.230	0.230	0.010	0.240	0.240	0.040	0.56	0.60	0.200

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 26...	<0.010	--	7.8	5	100	<0.50	<1.0	<5.0	<3.0	<10	<3.0
FEB 14...	0.030	0.09	--	--	--	--	--	--	--	--	--
MAY 08...	0.040	0.12	--	4	110	<0.50	2.0	<5.0	<3.0	<10	7.0
JUL 31...	0.060	0.18	--	6	110	<0.50	<1.0	<5.0	<3.0	<10	4.0
AUG 14...	0.030	0.09	--	6	120	1.5	<1.0	<5.0	<3.0	<10	<3.0
SEP 13...	0.210	0.64	--	--	--	--	--	--	--	--	--

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
26...	<10	17	2.0	<0.1	<10	<10	<1	<1.0	430	<6	3.0
FEB											
14...	--	--	--	--	--	--	--	--	--	--	--
MAY											
08...	<10	19	3.0	<0.1	<10	<10	<1	<1.0	440	<6	8.9
JUL											
31...	<10	21	<1.0	<0.1	<10	<10	<1	<1.0	430	9	4.0
AUG											
14...	20	20	2.0	<0.1	<10	<10	<1	<1.0	470	7	<3.0
SEP											
13...	--	--	--	--	--	--	--	--	--	--	--

08210500 LAKE CORPUS CHRISTI NEAR MATHIS, TX

LOCATION.--Lat 28°02'17", long 97°52'15", San Patricio-Jim Wells County line, Hydrologic Unit 12110111, on right upstream corner of outlet tower at right end of Wesley E. Seale Dam on Nueces River, 0.6 mi upstream from bridge on State Highway 359, and 4.5 mi southwest of Mathis.

DRAINAGE AREA.--16,656 mi².

PERIOD OF RECORD.--September 1948 to current year. Prior to October 1960, month end records only. The Natural Resources Conservation Service, in cooperation with the Texas Natural Resources Conservation Commission, collected fragmentary gage-height records in connection with sedimentation studies from Feb. 2, 1942, to July 10, 1947.

REVISED RECORDS.--WSP 1923: 1953(M), 1957(M).

GAGE.--Nonrecording gage read twice daily. Supplemental water-stage recorder operated by city of Corpus Christi. Datum of gage is sea level. Prior to Oct. 1, 1957, nonrecording gage at various sites 0.2 mi upstream at datum 0.52 ft higher. Oct. 1, 1957, to Apr. 3, 1961, nonrecording gage near left end of Mathis Dam 0.2 mi upstream at present datum.

REMARKS.--Mathis Dam was completed and storage began July 24, 1934. The original capacity at spillway crest (elevation, 74.5 ft) was 54,000 acre-ft, but by March 1948 had decreased to 39,400 acre-ft because of sedimentation. Wesley E. Seale Dam was completed and deliberate impoundment began on Apr. 26, 1958, submerging the old Mathis Dam. Wesley E. Seale Dam is a rolled earthfill dam, 5,930 ft long, including two spillways. The 1,320-foot north spillway has 33 gates that are operated by movable hydraulic lifts. The 1,080-foot south spillway has 27 gates that are electrically operated from the control tower. The gates were repaired and modified in August 1966. All gates in both spillways are 37.5 by 8.75 ft wide. Water for municipal supply for the city of Corpus Christi is released downstream through a 4.0-foot-diameter cylinder valve and three 2.5- by 4.0-foot rectangular openings. The releases are diverted from the river at Calallen 35 mi downstream for domestic, municipal, irrigation, mining, and industrial uses in the Corpus Christi area. The cities of Alice, Beeville, and Mathis withdrew 8,130 acre-ft from the lake during the current year for municipal use. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	106.0	-
Top of north spillway gates	94.46	-
Top of south spillway gates	94.0	241,200
Crest of spillways	88.0	137,100
Lowest gated outlet (invert)	55.5	-

COOPERATION.--Capacity curve 5-C is from a January 1987 survey provided by the city of Corpus Christi. Figures for new capacity curve were used beginning Oct. 1, 1989. Elevation and content records were provided by the city of Corpus Christi.

EXTREMES (AT 0600 HOURS) FOR PERIOD OF RECORD.--Maximum daily contents, 320,000 acre-ft Sept. 22, 1967, and Sept. 12, 1971; maximum elevation, 94.82 ft Sept. 22, 1967; minimum daily, 14,740 acre-ft May 5, 1951 (elevation, 67.62 ft).

EXTREMES (AT 0600 HOURS) FOR CURRENT YEAR.--Maximum daily contents, 131,300 acre-ft Nov. 28 (elevation, 87.6 ft); minimum daily, 68,340 acre-ft Aug. 22 (elevation, 82.6 ft).

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

80.0	47,250	86.0	107,900	92.0	204,000
82.0	63,030	88.0	137,100	93.0	222,300
84.0	82,870	90.0	169,200	94.0	241,200

08210500 LAKE CORPUS CHRISTI NEAR MATHIS, TX--Continued

AT 0600 HRS
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 0600 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127900	112400	128900	129800	120800	116900	111700	102800	90450	83660	73300	73200
2	128300	112400	128500	129500	120700	116800	111600	102200	90200	83320	72900	75540
3	128600	112100	128800	129200	120400	116500	111300	102000	89840	82990	72500	80660
4	127700	111800	128800	128000	120100	116400	111100	101400	89720	82650	72100	81320
5	125800	112100	128000	127300	119500	116200	110900	100900	89480	82310	71710	82200
6	125100	110900	128000	127100	119100	116100	110900	100700	89480	82090	71410	82540
7	123700	110700	127400	127000	118900	115900	110900	100300	89480	81870	71020	83890
8	122900	111000	126700	127100	118700	115700	110600	99870	89600	81650	70920	84000
9	122100	111000	126200	127000	118700	115700	110400	99480	89600	81320	70730	84690
10	121700	110900	125800	127100	118700	115500	110200	98960	89480	80980	70530	85490
11	121300	110700	125100	127300	118900	114900	109900	98570	89250	80660	70240	86180
12	120700	110900	124200	127000	119100	114700	109500	98570	88770	80330	69960	86420
13	119800	111000	123500	126500	119100	114500	109200	98310	88290	79890	69760	86530
14	119200	111400	123600	126200	118800	114200	109000	97800	87820	79460	69480	86530
15	118200	111600	123700	126000	118800	114400	109200	97280	87350	79130	69380	86420
16	117500	111700	124300	125700	118800	114700	108500	96900	87000	78810	69380	86300
17	116800	111800	125200	125400	118500	114900	107700	96390	86300	78490	69380	86300
18	116200	112100	126500	125100	118500	114900	107400	96010	85840	78270	69290	86180
19	115500	113000	127300	125100	118200	114700	107100	95630	85140	78060	69100	86180
20	114900	114700	128200	124600	118200	114500	106700	95000	84570	77850	68810	85950
21	114200	117200	128600	124300	118200	114100	106600	94380	84120	77530	68440	87350
22	112800	120100	129200	123600	117900	113500	106300	93630	83660	77320	68340	91540
23	112300	123500	129500	123500	117500	113100	106100	93260	83210	77000	68440	93880
24	112100	125800	129800	123300	117800	112800	105900	92760	83210	76690	68440	96010
25	111700	127300	130000	122900	117200	113100	105200	92400	83100	76270	69000	97800
26	111800	129100	130400	122600	117400	113000	105100	91900	83320	75850	69860	98570
27	111800	130100	130700	122600	116900	112800	104500	91420	83780	75340	70830	99870
28	112100	131300	131000	122100	117200	113000	104100	91300	83890	74720	71800	101200
29	111400	131000	130900	121400	117100	112400	103700	91050	83780	74210	72700	101400
30	113500	130000	131000	121400	---	112000	103300	90930	83780	73800	72600	102500
31	113400	---	130400	120800	---	112000	---	90690	---	73500	72500	---
MAX	128600	131300	131000	129800	120800	116900	111700	102800	90450	83660	73300	102500
MIN	111400	110700	123500	120800	116900	112000	103300	90690	83100	73500	68340	73200
(+)	86.4	87.5	87.6	86.9	86.6	86.3	85.7	84.7	84.1	83.1	83.0	85.6
(@)	-13900	+16600	+400	-9600	-3700	-5100	-8700	-12610	-6910	-10280	-1000	+30000

CAL YR 1995 MAX 142900 MIN 110700 (@) -9400
WTR YR 1996 MAX 131300 MIN 68340 (@) -24800

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

08211000 NUECES RIVER NEAR MATHIS, TX

LOCATION.--Lat 28°02'17", long 97°51'36", San Patricio-Jim Wells County line, Hydrologic Unit 12110111, at downstream side of bridge on State Highway 359, 0.6 mi downstream from Wesley E. Seale Dam, 4 mi southwest of Mathis, and at mile 46.7.

DRAINAGE AREA.--16,660 mi², of which 16,656 mi² is above Wesley E. Seale Dam.

PERIOD OF RECORD.--August 1939 to current year.
Water-quality records.--Chemical analyses: October 1947 to September 1991. Specific conductance: October 1947 to September 1991. Water temperature: October 1947 to September 1991.

GAGE.--Water-stage recorder. Datum of gage is 26.53 ft above sea level. Aug. 5, 1939, to Aug. 29, 1984, on left bank 9 ft upstream at datum 1.0 ft higher. Aug. 29 to Nov. 5, 1984, on left bank 9 ft upstream at present datum. Nov. 5, 1984, to Aug. 5, 1987, on left bank 154 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records fair. Flow is regulated by Lake Corpus Christi (station 08210500) 0.6 mi upstream. Upstream from Lake Corpus Christi, flow is affected by recharge to permeable formations, small diversions, and minor regulation. Water for municipal and industrial uses at Corpus Christi is released from Lake Corpus Christi above gage and is diverted from river at Calallen 34 mi downstream. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of about 41 ft, present datum, occurred Sept. 20, 1919, from information by Texas and New Orleans Railroad Co. and is the second highest known. Maximum stage since at least 1888, that of Sept. 24, 1967.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	472	125	136	279	125	134	115	124	197	166	200	134
2	470	125	135	280	125	140	136	158	157	197	247	134
3	469	125	131	280	125	146	165	198	154	274	230	134
4	463	130	152	230	125	161	151	150	223	203	231	130
5	463	127	237	128	125	142	95	113	236	148	236	127
6	464	119	256	130	159	124	108	132	235	119	226	129
7	462	119	256	130	158	106	110	146	185	140	230	127
8	462	120	256	138	142	115	118	171	146	231	229	141
9	461	120	256	148	142	131	121	153	129	261	216	143
10	461	121	255	150	142	172	115	152	159	213	161	143
11	460	121	255	150	142	168	129	151	235	182	178	137
12	460	117	257	150	134	180	162	128	254	136	214	128
13	458	114	186	150	125	173	151	155	241	166	249	124
14	459	115	188	150	119	171	133	134	195	164	252	111
15	457	126	206	151	120	179	108	136	133	192	229	124
16	456	127	130	151	120	143	137	208	130	268	172	131
17	455	117	131	153	153	137	149	212	191	279	124	132
18	455	107	121	155	160	116	157	169	273	225	154	133
19	453	102	120	155	156	112	150	174	283	227	242	134
20	453	102	120	155	168	159	150	161	212	166	266	141
21	452	102	120	155	170	182	139	178	141	145	159	138
22	452	102	120	148	149	158	135	176	117	225	87	138
23	451	103	120	132	135	146	112	229	130	312	40	139
24	452	130	111	133	143	122	160	206	176	352	51	140
25	284	149	103	127	135	127	177	194	136	303	97	140
26	136	145	91	127	149	92	175	165	107	224	93	141
27	134	141	125	126	147	93	163	159	97	351	75	139
28	133	149	277	127	141	130	137	189	103	314	126	121
29	128	184	279	127	129	140	128	226	107	225	203	137
30	125	171	279	127	---	145	113	214	120	195	263	153
31	126	---	279	126	---	121	---	164	---	166	185	---
TOTAL	12086	3755	5688	4868	4063	4365	4099	5225	5202	6769	5665	4023
MEAN	390	125	183	157	140	141	137	169	173	218	183	134
MAX	472	184	279	280	170	182	177	229	283	352	266	153
MIN	125	102	91	126	119	92	95	113	97	119	40	111
AC-FT	23970	7450	11280	9660	8060	8660	8130	10360	10320	13430	11240	7980

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1996, BY WATER YEAR (WY)

MEAN	1282	434	201	305	340	289	447	1261	1329	837	538	1547
MAX	14850	4552	1871	4994	5165	4377	4639	10500	8204	10440	10050	24950
(WY)	1972	1977	1977	1958	1958	1958	1977	1941	1987	1942	1971	1967
MIN	55.3	31.0	27.9	28.1	24.3	31.0	37.3	39.3	43.7	67.0	41.6	44.0
(WY)	1953	1940	1940	1940	1942	1948	1948	1948	1948	1951	1943	1945

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1939 - 1996	
ANNUAL TOTAL	77821		65808			
ANNUAL MEAN	213		180		736	
HIGHEST ANNUAL MEAN					2167	1967
LOWEST ANNUAL MEAN					104	1964
HIGHEST DAILY MEAN	616	Jun 25	472	Oct 1	125000	Sep 25 1967
LOWEST DAILY MEAN	87	Mar 17	40	Aug 23	6.8	Aug 15 1940
ANNUAL SEVEN-DAY MINIMUM	97	Mar 13	81	Aug 22	15	Aug 9 1940
INSTANTANEOUS PEAK FLOW			473	Oct 1	138000	Sep 24 1967
INSTANTANEOUS PEAK STAGE			4.40	Oct 1	48.70	Sep 24 1967
INSTANTANEOUS LOW FLOW					6.8	Aug 15 1940
ANNUAL RUNOFF (AC-FT)	154400		130500		533200	
10 PERCENT EXCEEDS	455		279		1290	
50 PERCENT EXCEEDS	162		148		129	
90 PERCENT EXCEEDS	111		116		52	

08211200 NUECES RIVER AT BLUNTZER, TX

LOCATION.--Lat 27°56'15", long 97°46'32", Nueces County, Hydrologic Unit 12110111, on right bank, at downstream end of bridge on Farm Road 666, 1.2 mi south of San Patricio, 5.5 mi upstream from Cayamon Creek, and 10.3 mi northwest of Calallen.

DRAINAGE AREA.--16,772 mi².

PERIOD OF RECORD.--January 1966 to February 1967, March 1992 to current year (operated as a low-flow station only). Prior to October 1994, published as "above Calallen".

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Mar. 27, 1992, at same site at datum 6.04 ft higher.

REMARKS.--No estimated daily discharges. Records good. Daily discharges are published only for days when instantaneous maximum discharge does not exceed 2,950 ft³/s. Flow is largely regulated by Lake Corpus Christi (station 08210500). Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 27.18 ft Mar. 29, 1992, at 1500 hours; minimum daily discharge, 83 ft³/s Feb. 7-9, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 9.97 ft Oct. 2 at 1200 hours; minimum daily discharge, 97 ft³/s Apr. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	456	161	170	285	134	136	125	129	194	121	177	212
2	462	157	150	286	134	139	122	157	200	156	194	175
3	464	154	147	287	134	141	142	177	171	185	223	160
4	464	161	143	287	132	152	168	197	191	207	200	156
5	464	166	181	209	127	148	142	161	223	184	211	149
6	464	161	234	153	131	139	102	141	237	141	214	146
7	464	152	256	148	160	115	123	156	229	124	213	144
8	463	149	260	144	153	108	119	165	187	145	211	145
9	460	146	260	152	151	108	123	180	171	195	212	152
10	460	146	261	158	150	140	129	170	154	216	196	155
11	461	144	262	159	146	156	122	171	193	189	167	154
12	460	144	263	158	146	155	146	170	241	167	176	147
13	461	140	261	157	142	163	158	149	244	135	205	147
14	461	134	179	158	135	163	153	174	236	157	229	149
15	463	134	215	157	127	160	137	151	201	150	229	146
16	464	141	187	154	126	165	123	174	164	181	213	149
17	464	154	161	154	128	140	154	215	160	229	177	153
18	464	141	157	155	149	131	152	213	211	229	147	149
19	464	130	147	159	151	107	153	185	254	202	178	148
20	464	120	139	159	152	114	160	179	263	206	274	152
21	464	116	136	158	158	154	161	183	209	160	248	158
22	464	113	136	159	158	165	148	196	168	154	189	150
23	464	113	136	151	140	150	140	201	148	206	151	146
24	464	114	135	139	139	129	138	230	259	269	208	145
25	455	146	120	141	141	124	170	206	316	304	173	145
26	273	155	112	135	135	120	178	217	294	260	178	143
27	180	157	106	134	143	103	180	171	160	262	143	139
28	164	156	178	134	141	106	159	181	118	321	125	135
29	170	169	260	134	138	136	155	218	113	285	155	130
30	199	188	280	134	---	150	135	227	111	230	199	136
31	172	---	284	134	---	140	---	205	---	202	227	---
TOTAL	12716	4362	5916	5232	4101	4257	4317	5649	6020	6172	6042	4515
MEAN	410	145	191	169	141	137	144	182	201	199	195	150
MAX	464	188	284	287	160	165	180	230	316	321	274	212
MIN	164	113	106	134	126	103	102	129	111	121	125	130
AC-FT	25220	8650	11730	10380	8130	8440	8560	11200	11940	12240	11980	8960

CAL YR 1995 TOTAL 80986 MEAN 222 MAX 656 MIN 106 AC-FT 160600
WTR YR 1996 TOTAL 69299 MEAN 189 MAX 464 MIN 102 AC-FT 137500

08211500 NUECES RIVER AT CALALLEN, TX

LOCATION.--Lat 27°52'34", long 97°37'32", Nueces County, Hydrologic Unit 12110111, at the Cunningham pumping station in Corpus Christi, 0.4 mi upstream from Calallen Dam, 0.5 mi northwest of Calallen, about 1.4 mi upstream from bridge on Interstate Highway 37, about 1.5 mi upstream from Missouri-Pacific Railroad bridge, and about 8 mi upstream from Nueces Bay.

DRAINAGE AREA.--16,920 mi².

PERIOD OF RECORD.--October 1989 to current year (low flow). Maximum annual gage height and discharge were published at this site from October 1983 to September 1989. Gage-height records collected from April 1920 to July 1950 were not published but are filed in the District Office in Austin. Records collected from August 1915 to September 1918 (referenced in WSP 1312) are unreliable and should not be used.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 0.84 ft above sea level. From Aug. 12, 1915, to Mar. 31, 1919, and Apr. 1, 1920, to July 31, 1950, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records poor. Daily discharges are published only for days when instantaneous maximum discharge does not exceed 2,570 ft³/s. There are numerous diversions above station for agricultural, municipal, and industrial supply. The cities of Corpus Christi, San Patricio, Robstown, and the Nueces River Water Control and Improvement District No. 3 have a combined withdrawal capacity of 205,500 gallons/minute. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,780 ft³/s June 11, 1987 (gage height, 9.25 ft), from extension of rating above 2,500 ft³/s; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 740 ft³/s Oct. 29 at 2100 hours (gage height, 5.86 ft); no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	312	30	26	171	3.0	.00	.00	.00	.00	.05	.00	22
2	357	29	12	103	1.3	.00	.00	.00	.00	.00	.00	12
3	326	26	27	121	.00	.00	.00	.00	.00	.00	.00	12
4	353	36	5.0	104	.00	.00	.00	.00	.00	.00	.00	1.1
5	319	44	1.1	101	.00	.77	.00	.00	.00	.00	.00	.00
6	318	33	61	34	.00	2.4	.00	.00	.00	.47	.00	.00
7	331	17	74	16	.00	.02	.00	.00	.00	.00	.00	.00
8	335	16	80	12	.41	.00	.00	.00	.02	.00	.00	.00
9	321	15	89	14	2.3	.00	.00	.00	.00	.00	.00	1.2
10	324	9.1	106	19	16	.00	.00	.00	.00	.00	.00	.00
11	337	12	83	21	8.7	.00	.00	.00	.00	.00	.00	.00
12	340	13	97	20	7.3	.00	.00	.00	.00	.00	.00	.00
13	331	9.3	83	22	14	.00	.00	.00	.00	.00	.00	.00
14	354	3.6	55	26	7.1	.00	.00	.00	.00	.00	.00	.00
15	340	.00	40	18	.00	.00	.00	.00	.00	.00	.00	.00
16	343	.24	50	18	.00	.08	.00	.00	.00	.00	.00	.00
17	332	27	33	8.6	.00	1.5	.00	.00	.00	.00	.00	.00
18	327	28	28	19	.00	.00	.00	.00	.00	.00	.00	.00
19	331	22	15	16	.00	.00	.00	.00	.00	.00	.00	.00
20	342	3.6	12	22	.00	.00	.00	.00	.01	.00	.00	1.3
21	344	.00	13	12	.00	.00	.00	.00	12	.00	1.0	4.7
22	355	.00	12	23	.48	.00	.00	.00	.00	.00	53	.00
23	305	.00	8.6	15	6.8	.00	.00	.00	.00	.00	26	.00
24	346	.00	11	9.4	2.0	.00	.00	.00	.00	.00	7.8	.00
25	317	.00	10	5.9	1.1	.00	.00	.00	99	26	39	.00
26	154	10	15	21	.00	.00	.00	.00	113	42	9.9	.00
27	31	14	3.7	7.9	.00	.00	.00	.00	32	22	10	.00
28	22	11	1.8	.00	.00	.00	.00	.00	.25	103	4.3	.00
29	149	11	68	8.6	1.6	.00	.00	.00	.00	59	.00	.00
30	191	25	152	3.2	---	.00	.00	.00	2.9	13	7.0	.00
31	60	---	124	.00	---	.00	---	.00	---	1.0	41	---
TOTAL	8947	444.84	1396.2	991.60	72.09	4.77	0.00	0.00	259.18	266.52	199.00	54.30
MEAN	289	14.8	45.0	32.0	2.49	.15	.000	.000	8.64	8.60	6.42	1.81
MAX	357	44	152	171	16	2.4	.00	.00	113	103	53	22
MIN	22	.00	1.1	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	17750	882	2770	1970	143	9.5	.00	.00	514	529	395	108

CAL YR 1995 TOTAL 24431.44 MEAN 66.9 MAX 437 MIN .00 AC-FT 48460
WTR YR 1996 TOTAL 12635.50 MEAN 34.5 MAX 357 MIN .00 AC-FT 25060

08211520 OSO CREEK AT CORPUS CHRISTI, TX

LOCATION.--Lat 27°42'40", long 97°30'06", Nueces County, Hydrologic Unit 12110202, on left downstream end of bridge on Farm Road 763, 1.5 mi south of intersection of Farm Roads 763 and 665, 1.6 mi downstream from mouth of West Oso Creek, and 1.9 mi southwest of intersection of Farm Road 665 and State Highway 357.

DRAINAGE AREA.--90.3 mi².

PERIOD OF RECORD.--September 1972 to current year.
Water-quality records.--Chemical and biochemical analyses: July 1972 to August 1988. Pesticide analyses: July 1972 to July 1981.

GAGE.--Water-stage recorder. Datum of gage is 1.91 ft below sea level.

REMARKS.--No estimated daily discharges. Records good. No known diversions above station. An undetermined amount of water from oil-field operations enters the stream upstream from station at various points.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 24.5 ft occurred in May 1968, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 30	0100	3,730	24.56				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	263	3.1	2.4	1.9	1.8	1.7	1.5	1.5	1.4	.75	35
2	3.1	91	3.4	2.4	1.8	1.7	1.7	1.5	1.5	1.1	.71	25
3	3.4	41	3.6	2.3	1.7	1.7	1.6	1.6	1.3	1.0	.70	10
4	2.5	23	3.2	2.1	1.8	1.7	1.4	1.6	1.3	.95	.72	5.3
5	2.1	83	3.2	2.0	1.8	1.9	3.8	1.6	1.4	.92	.71	3.9
6	2.0	95	3.3	2.1	1.9	1.8	4.1	1.5	1.4	.91	.68	3.2
7	2.1	29	3.2	2.3	1.9	1.8	2.7	1.5	1.4	.89	.73	3.2
8	1.8	13	3.0	2.2	1.9	1.8	2.6	1.5	1.3	.95	.72	3.2
9	1.8	7.7	2.8	2.3	2.0	1.6	2.2	1.5	1.3	.90	.71	105
10	1.9	5.4	2.7	2.2	1.8	1.5	2.0	1.5	1.4	.88	.71	104
11	1.7	4.3	2.8	2.1	1.9	1.6	1.9	42	1.4	.85	.73	19
12	1.7	3.7	2.7	2.1	1.7	1.8	1.7	25	1.4	.84	.74	6.3
13	1.8	3.4	2.6	2.0	2.0	1.7	1.6	2.3	1.3	.83	.78	4.2
14	2.1	3.2	2.6	2.0	2.0	1.8	1.8	1.7	1.3	.82	.83	3.5
15	2.0	3.2	2.4	2.0	1.8	1.8	1.7	1.6	1.3	.83	1.1	3.0
16	1.7	3.3	2.9	2.1	1.7	1.8	1.6	1.6	1.4	.82	1.3	2.6
17	1.7	181	3.0	2.0	1.7	1.8	1.6	1.5	1.4	.82	1.1	2.7
18	1.8	278	4.3	1.9	1.7	1.7	1.7	1.5	1.6	.82	.95	2.6
19	1.9	110	4.9	2.7	1.8	1.6	1.7	1.6	1.5	.81	.89	2.3
20	1.8	32	3.6	2.3	1.8	1.5	1.7	1.5	1.4	.78	.84	53
21	1.8	14	3.1	2.0	1.8	1.5	1.6	1.5	1.3	.77	.87	29
22	1.8	8.6	2.8	2.1	1.8	1.6	1.6	1.5	1.4	.76	6.7	13
23	1.8	6.2	2.9	2.3	1.8	1.6	1.7	1.4	1.4	.76	31	5.6
24	1.9	4.7	3.3	2.1	1.8	1.7	1.6	1.4	1.5	.77	197	4.3
25	1.8	3.9	2.9	2.0	1.8	1.7	1.6	1.5	5.6	.77	364	5.9
26	1.8	3.6	2.6	2.0	1.8	1.7	1.6	1.3	22	.81	114	5.4
27	1.8	3.5	2.5	1.8	1.8	1.8	1.8	1.2	14	.76	42	16
28	1.8	3.3	2.4	1.8	1.8	1.7	1.7	1.4	4.5	.74	27	9.7
29	484	3.1	2.2	1.8	1.8	1.8	2.5	1.7	4.2	.76	66	3.6
30	2850	3.1	2.1	1.9	---	1.8	1.7	1.6	6.2	.78	48	4.0
31	974	---	2.3	1.9	---	1.8	---	1.6	---	.77	31	---
TOTAL	4363.1	1327.2	92.4	65.2	52.8	53.1	58.2	111.7	89.9	26.57	943.97	493.5
MEAN	141	44.2	2.98	2.10	1.82	1.71	1.94	3.60	3.00	.86	30.5	16.4
MAX	2850	278	4.9	2.7	2.0	1.9	4.1	42	22	1.4	364	105
MIN	1.7	3.1	2.1	1.8	1.7	1.5	1.4	1.2	1.3	.74	.68	2.3
AC-FT	8650	2630	183	129	105	105	115	222	178	53	1870	979

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1996, BY WATER YEAR (WY)

MEAN	52.5	21.4	16.1	13.6	22.6	17.8	16.1	34.5	59.3	25.7	24.7	47.4
MAX	355	119	181	130	238	128	96.0	185	379	339	454	228
(WY)	1974	1982	1992	1984	1982	1995	1990	1993	1993	1976	1980	1979
MIN	1.26	1.40	1.27	1.53	1.29	.89	1.05	1.71	1.28	.86	1.07	1.91
(WY)	1991	1994	1991	1993	1975	1988	1975	1978	1980	1996	1974	1986

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1972 - 1996	
ANNUAL TOTAL	11164./		7677.64			
ANNUAL MEAN	30.6		21.0		29.3	
HIGHEST ANNUAL MEAN					54.3	1992
LOWEST ANNUAL MEAN					3.03	1989
HIGHEST DAILY MEAN	2850	Oct 30	2850	Oct 30	6160	Aug 11 1980
LOWEST DAILY MEAN	1.2	Jul 28	.68	Aug 6	.27	Mar 12 1988
ANNUAL SEVEN-DAY MINIMUM	1.3	Jul 27	.71	Aug 2	.35	Mar 9 1988
INSTANTANEOUS PEAK FLOW			3730	Oct 30	12100	Aug 10 1980
INSTANTANEOUS PEAK STAGE			24.56	Oct 30	29.37	Aug 10 1980
ANNUAL RUNOFF (AC-FT)	22150		15230		21210	
10 PERCENT EXCEEDS	17		13		21	
50 PERCENT EXCEEDS	2.6		1.8		2.4	
90 PERCENT EXCEEDS	1.5		.86		1.2	

08364000 RIO GRANDE AT EL PASO, TX

LOCATION.--Lat 31°48'10", long 106°32'25", El Paso County, Hydrologic Unit 13030102, at gaging station on the downstream side of the Courchesne Bridge, 5.6 mi upstream from the Santa Fe Street-Juarez Avenue bridge between El Paso, Tex., and Cd. Juarez, Mex., and 1.7 mi upstream from the American Dam.

DRAINAGE AREA.--29,267 mi².

PERIOD OF RECORD.--Chemical analyses: February 1930 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1996 are given in International Boundary and Water Commission Water Bulletins Nos. 65 and 66.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
OCT 19...	0810	752	1290	8.1	16.0	250	62	72	18
NOV 30...	0800	174	2380	8.3	13.5	470	210	130	35
DEC 14...	0750	167	2500	8.2	8.0	480	230	130	38
JAN 18...	0820	360	1460	7.8	6.0	270	110	72	22
FEB 15...	0805	191	1720	8.1	11.0	350	120	96	26
MAR 21...	0820	1030	862	8.1	--	150	59	37	15
APR 18...	0755	805	1120	7.5	15.5	250	78	74	17
MAY 16...	0750	516	1370	7.6	20.5	290	96	80	21
JUN 20...	0800	1030	1050	7.7	--	220	60	62	16
JUL 18...	0815	833	1140	7.6	--	220	59	63	16
AUG 22...	0805	877	1000	7.7	24.0	220	64	62	15
SEP 26...	0810	434	1430	7.6	19.5	320	100	90	22

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 19...	160	4	7.1	190	260	130	0.80	17	780
NOV 30...	340	7	12	260	460	330	0.90	25	1490
DEC 14...	380	8	12	250	500	360	0.80	25	1600
JAN 18...	190	5	8.5	160	280	190	0.70	13	873
FEB 15...	230	5	9.8	220	340	220	0.80	17	1070
MAR 21...	110	4	6.9	95	180	92	0.60	14	512
APR 18...	130	4	7.7	180	210	110	0.70	14	670
MAY 16...	160	4	8.6	190	270	150	0.60	16	820
JUN 20...	130	4	7.2	160	210	100	0.70	17	639
JUL 18...	130	4	7.5	160	210	120	0.60	21	666
AUG 22...	120	4	7.3	150	200	98	0.70	18	613
SEP 26...	190	5	8.5	210	290	140	0.70	22	891

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°46'50", long 101°45'20", Val Verde County, Hydrologic Unit 13040212, at gaging station 0.1 mi downstream from Terrell-Val Verde County line, 16.9 mi from Langtry, and 597.2 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--80,742 mi², United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Inorganic chemical analyses: April 1944 to current year. Biochemical analyses: October 1974 to August 1995. Organic chemical analyses: July 1975 to June 1982, October 1995 to current year. Sediment analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1981.
WATER TEMPERATURE: October 1974 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,110 microsiemens Dec. 4, 1974; minimum daily, 225 microsiemens May 2, 1981.
WATER TEMPERATURE: Maximum daily, 32.0°C June 13, 1977, July 25, 26, 1979, July 4, 1980, and June 8, 1981; minimum daily, 9.0°C Jan. 12, 1975, Jan. 8, 1976, and Jan. 18, 1981.

REMARKS.--Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1996 are given in International Boundary and Water Commission Water Bulletins Nos. 65 and 66.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT												
25...	1025	529	1760	8.1	18.0	60	9.2	102	340	200	90	28
FEB												
21...	1130	529	1880	8.2	18.0	38	11.0	123	360	190	94	30
MAR												
20...	1200	388	1510	8.2	17.5	36	9.4	102	360	150	95	29
APR												
01...	1140	274	1510	8.1	21.0	34	9.4	110	360	180	94	29
16...	1237	236	1320	8.0	19.5	0.20	11.8	135	320	170	83	26
MAY												
01...	1135	270	1330	8.0	21.0	20	8.6	102	320	170	82	27
29...	1145	176	782	8.1	28.5	7.0	7.6	104	210	74	51	20
JUN												
27...	1045	274	677	8.0	27.5	180	7.4	99	210	57	61	14
JUL												
30...	1345	458	972	8.0	28.0	200	7.8	105	280	150	83	17
AUG												
15...	1120	1350	1480	7.7	27.0	5300	6.2	82	300	200	100	12
20...	1238	410	593	8.0	26.5	860	7.1	93	170	34	55	7.2
30...	1340	10000	723	7.5	26.5	7500	4.1	54	200	110	67	6.9
SEP												
11...	1135	1190	1060	7.9	27.0	920	7.2	95	320	200	110	10

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT												
25...	230	5	7.5	0	177	145	330	250	0.90	16	1120	1040
FEB												
21...	250	6	8.1	0	205	168	380	300	1.1	7.7	1190	1170
MAR												
20...	190	4	7.1	0	255	209	320	210	1.3	16	1000	999
APR												
01...	180	4	6.2	0	220	180	320	210	1.3	18	992	972
16...	160	4	4.4	0	177	145	280	160	1.4	20	834	826
MAY												
01...	160	4	6.0	0	178	146	290	160	1.3	21	882	839
29...	78	2	4.9	0	167	137	160	62	1.2	20	513	482
JUN												
27...	51	2	4.5	0	189	154	130	38	1.1	17	438	416
JUL												
30...	91	2	5.7	0	158	130	250	63	1.3	18	626	612
AUG												
15...	170	4	7.3	0	121	99	350	190	0.70	12	940	908
20...	58	2	3.8	0	163	134	120	27	0.90	17	398	376
30...	73	2	4.7	0	108	88	200	42	0.60	10	484	465
SEP												
11...	84	2	6.0	0	142	116	300	78	0.80	15	706	680

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
OCT												
25...	0.290	0.290	0.010	0.300	0.300	<0.015	0.70	0.40	<0.20	0.40	0.020	0.020
FEB												
21...	0.080	0.080	0.010	0.090	0.090	<0.015	1.1	1.0	0.20	1.0	0.090	<0.010
MAR												
20...	0.500	0.500	0.010	0.510	0.510	<0.015	1.0	0.50	<0.20	0.50	0.050	<0.010
APR												
01...	0.500	0.500	0.030	0.530	0.530	0.030	0.93	0.37	<0.20	0.40	0.060	0.020
16...	0.340	0.340	0.010	0.350	0.350	<0.015	0.65	0.30	<0.20	0.30	0.030	<0.010
MAY												
01...	0.420	--	<0.010	0.420	0.420	0.030	0.72	0.27	<0.20	0.30	0.040	<0.010
29...	0.190	0.190	0.020	0.210	0.210	0.030	0.51	0.27	<0.20	0.30	0.030	0.020
JUN												
27...	0.970	0.970	0.030	1.00	1.00	<0.015	1.4	0.40	<0.20	0.40	0.070	<0.010
JUL												
30...	0.740	0.740	0.010	0.750	0.750	0.040	--	--	<0.20	<0.20	<0.010	<0.010
AUG												
15...	0.890	0.890	0.010	0.900	0.900	0.030	1.4	0.47	0.20	0.50	0.100	0.010
20...	1.30	--	<0.010	1.30	1.30	<0.015	2.7	1.4	<0.20	1.4	1.20	<0.010
30...	1.33	1.33	0.070	1.40	1.40	0.020	1.9	0.48	0.30	0.50	0.120	<0.010
SEP												
11...	1.10	--	<0.010	1.10	1.10	0.020	1.9	0.78	<0.20	0.80	0.370	<0.010

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ANTI-MONY, DIS-SOLVED (UG/L AS SB)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	BORON, DIS-SOLVED (UG/L AS B)
OCT												
25...	<0.010	2.6	1.5	172	246	100	<10	--	--	110	--	--
FEB												
21...	0.001	2.7	>5.0	112	160	99	<1.0	<1.0	2	91	<1.0	320
MAR												
20...	0.001	1.8	2.1	101	106	98	<1.0	<1.0	3	101	<1.0	290
APR												
01...	0.001	1.7	>5.0	88	65	100	2.0	<1.0	2	100	<1.0	280
16...	<0.001	1.6	1.1	106	68	95	1.0	<1.0	3	79	<1.0	240
MAY												
01...	0.001	1.6	0.80	95	69	100	2.0	<1.0	4	80	<1.0	270
29...	0.001	1.7	0.40	26	12	98	2.0	<1.0	4	80	<1.0	190
JUN												
27...	0.003	2.2	2.4	253	187	98	5.0	<1.0	4	89	<1.0	139
JUL												
30...	0.001	1.7	3.6	408	505	100	1.0	<1.0	3	118	<1.0	192
AUG												
15...	<0.001	3.4	>5.0	8850	32300	100	2.0	<1.0	2	192	<1.0	233
20...	0.008	2.5	>5.0	1860	2060	99	4.0	<1.0	3	55	<1.0	113
30...	<0.001	3.5	>5.0	17000	459000	93	2.0	<1.0	1	98	<1.0	106
SEP												
11...	0.011	2.4	>5.0	1660	5330	100	3.0	<1.0	3	123	<1.0	141

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)
OCT												
25...	--	--	<3.0	--	<3.0	--	120	<1.0	10	1.0	1	<1.0
FEB												
21...	<1.0	3.0	<1.0	3.0	<3.0	<1.0	130	<1.0	10	2.0	1	<1.0
MAR												
20...	<1.0	2.0	<1.0	3.0	<3.0	<1.0	110	2.0	10	2.0	1	<1.0
APR												
01...	<1.0	2.0	<1.0	4.0	<3.0	<1.0	110	2.0	10	3.0	1	<1.0
16...	<1.0	2.0	<1.0	2.0	<3.0	<1.0	95	2.0	10	2.0	1	<1.0
MAY												
01...	<1.0	2.0	<1.0	2.0	<3.0	<1.0	96	2.0	10	2.0	<1	<1.0
29...	<1.0	1.0	<1.0	2.0	<3.0	<1.0	64	2.0	10	1.0	<1	<1.0
JUN												
27...	<1.0	2.0	<1.0	2.0	<3.0	<1.0	47	<1.0	7.0	2.0	<1	<1.0
JUL												
30...	<1.0	1.0	<1.0	<1.0	<3.0	<1.0	61	<1.0	10	<1.0	2	<1.0
AUG												
15...	<1.0	<1.0	<1.0	3.0	<3.0	<1.0	62	<1.0	8.0	5.0	1	<1.0
20...	<1.0	3.0	<1.0	2.0	4.0	<1.0	28	<1.0	7.0	2.0	1	<1.0
30...	<1.0	1.0	<1.0	1.0	<3.0	<1.0	24	<1.0	7.0	3.0	1	<1.0
SEP												
11...	<1.0	<1.0	<1.0	2.0	<3.0	<1.0	38	<1.0	7.0	3.0	1	<1.0

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	STRONTIUM, DIS-SOLVED (UG/L AS SR)	VANADIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)	ACETOCHLOR, WATER FLTRD REC (UG/L)	ALACHLOR, WATER, DISS, REC, (UG/L)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L)	ATRAZINE, WATER, DISS, REC (UG/L)	METHYL AZINPHOS WAT FLT 0.7 U GF, REC (UG/L)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L)	BUTYLATE, WATER, DISS, REC (UG/L)
OCT											
25...	2000	<6	--	--	<0.002	<0.002	<0.002	E0.007	<0.001	<0.002	<0.002
FEB											
21...	2200	<6	5.0	5.0	<0.002	<0.002	<0.002	0.020	<0.001	<0.002	<0.002
MAR											
20...	2200	<6	4.0	5.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
APR											
01...	2200	<6	2.0	5.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
16...	2200	8	2.0	4.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
MAY											
01...	2200	<6	1.0	5.0	<0.002	<0.002	<0.002	E0.002	<0.001	<0.002	<0.002
29...	1400	8	2.0	4.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
JUN											
27...	1400	7	5.0	3.0	<0.002	<0.002	<0.002	E0.002	<0.001	<0.002	<0.002
JUL											
30...	1800	7	6.0	5.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
AUG											
15...	1900	<6	2.0	4.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
20...	940	10	<1.0	3.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
30...	1100	6	1.0	3.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
SEP											
11...	1500	7	2.0	3.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002

DATE	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L)	CHLORPYRIFOS DIS-SOLVED (UG/L)	DIAZINON, WATER, DISS, REC (UG/L)	DIELDRIN WATER FLTRD 0.7 U GF, REC (UG/L)	P,P' DDE DISSOLV (UG/L)	DIAZINON, DIS-SOLVED (UG/L)	DIELDRIN DIS-SOLVED (UG/L)	2,6-DIANILINE WAT FLT 0.7 U GF, REC (UG/L)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L)
OCT											
25...	<0.003	<0.003	<0.004	<0.004	E0.003	<0.006	E0.006	<0.001	<0.003	<0.017	<0.002
FEB											
21...	<0.003	<0.003	<0.004	<0.004	E0.001	<0.006	0.160	<0.001	<0.003	<0.017	<0.002
MAR											
20...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
APR											
01...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
16...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
MAY											
01...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
29...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
JUN											
27...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
JUL											
30...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
AUG											
15...	<0.003	<0.003	<0.004	0.010	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
20...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
30...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
SEP											
11...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002

DATE	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L)	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L)	FONOFOS WATER DISS REC (UG/L)	ALPHA BHC DISSOLVED (UG/L)	LINDANE DISSOLVED (UG/L)	LINURON WATER FLTRD 0.7 U GF, REC (UG/L)	MALATHION, DISSOLVED (UG/L)	METOLACHLOR WATER DISSOLV (UG/L)	METRIBUZIN SENCOR WATER DISSOLV (UG/L)	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L)	NAPROPAMIDE WATER FLTRD 0.7 U GF, REC (UG/L)
OCT											
25...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	E0.006	<0.021	<0.004	<0.003
FEB											
21...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
MAR											
20...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
APR											
01...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
16...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
MAY											
01...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
29...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
JUN											
27...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
JUL											
30...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
AUG											
15...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
20...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.049	<0.005	<0.002	<0.004	<0.004	<0.003
30...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
SEP											
11...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	PARA-THION, DIS-SOLVED (UG/L)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PRO-METON, WATER, DISS, REC (UG/L)	PROP-CHLOR, WATER, DISS, REC (UG/L)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L)
OCT											
25...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	E0.018	<0.007	<0.004	<0.013
FEB											
21...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
MAR											
20...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
APR											
01...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
16...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
MAY											
01...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	0.004	<0.018	<0.007	<0.004	<0.013
29...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.005	<0.018	<0.007	<0.004	<0.013
JUN											
27...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
JUL											
30...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
AUG											
15...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	E0.003	<0.007	<0.004	<0.013
20...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
30...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
SEP											
11...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013

DATE	SI-MAZINE, WATER, DISS, REC (UG/L)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT	SAMPLE VOLUME SCHED-ULE 2001 (ML)
OCT											
25...	E0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	E205	E180	E191	917
FEB											
21...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	113	100	103	952
MAR											
20...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	84.8	78.0	100	925
APR											
01...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	87.8	91.0	104	917
16...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	101	100	112	934
MAY											
01...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	92.2	96.0	95.7	952
29...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	99.7	115	111	970
JUN											
27...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	116	74.6	112	970
JUL											
30...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	80.0	84.7	102	952
AUG											
15...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	98.0	86.5	113	943
20...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	70.4	89.3	94.0	990
30...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	99.2	93.0	112	925
SEP											
11...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	82.4	90.9	106	934

08405500 PECOS RIVER AT RED BLUFF, NM

LOCATION.--Lat 32°04'30", long 104°02'21", in SW1/4NW1/4NE1/4 sec.1, T.26 S., R.28 E., Eddy County, Hydrologic Unit 13060011, on right bank at Red Bluff, 0.2 mi downstream from Red Bluff Draw, 1.6 mi northwest of the El Paso Natural Gas (Pecos River) compressor station, 5.2 mi north of the New Mexico-Texas State line, 5.5 mi upstream from Delaware River, and at mile 411.2.

DRAINAGE AREA.--19,540 mi², approximately (contributing area).

PERIOD OF RECORD.--October 1937 to current year.
Water-quality records.-- October 1936 to September 1994.

GAGE.--Water-stage recorder. Elevation of gage is 2,850.05 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by many reservoirs and diversion dams. Diversions and ground-water withdrawals upstream from station for irrigation of about 202,000 acres, 1959 determination. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1904 reached a stage of 28.0 ft, from information by Panhandle and Santa Fe Railway Co. (For dates of other historical floods see stations 08404000, 08406500.)

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	93	88	99	74	51	58	48	353	55	52	409
2	72	143	89	102	66	50	54	57	347	51	49	186
3	71	153	89	107	62	51	52	56	340	49	50	90
4	71	132	90	105	67	51	52	50	336	51	47	66
5	69	108	87	95	69	51	62	57	320	50	48	64
6	72	105	86	91	71	52	71	60	217	50	48	58
7	58	96	85	97	73	52	70	50	107	47	51	55
8	86	96	88	109	71	54	66	44	70	45	47	69
9	361	91	86	94	64	52	58	40	58	42	45	55
10	404	90	87	88	61	63	57	37	52	94	48	58
11	389	91	88	88	64	69	59	37	49	326	52	84
12	394	88	89	80	68	60	53	42	47	339	48	632
13	410	82	90	76	67	61	53	40	46	334	52	625
14	418	86	92	74	65	54	51	37	55	318	42	183
15	420	89	90	74	66	52	49	37	79	316	41	108
16	415	89	87	74	67	52	49	40	91	346	40	86
17	402	90	90	71	61	51	48	38	63	324	41	78
18	405	91	95	69	55	50	43	36	51	350	42	77
19	427	91	96	74	54	53	45	36	49	366	60	71
20	424	91	101	69	55	55	50	36	47	341	165	68
21	246	90	99	66	58	50	51	33	45	355	59	65
22	121	90	92	70	58	50	49	30	42	253	53	64
23	87	90	93	69	54	55	50	29	47	127	44	62
24	84	89	94	67	56	55	56	72	50	83	44	62
25	73	89	93	69	57	55	49	310	51	78	60	65
26	70	90	92	64	53	47	45	340	65	75	135	66
27	89	90	95	61	51	53	51	336	60	71	178	68
28	86	89	94	68	52	46	53	336	58	68	134	61
29	84	85	93	66	55	48	50	335	71	72	114	53
30	88	86	93	67	---	52	52	321	56	64	95	64
31	89	---	91	64	---	60	---	344	---	56	191	---
TOTAL	654/	2883	2822	246/	1/94	1655	1606	3364	3322	5196	2175	3752
MEAN	211	96.1	91.0	79.6	61.9	53.4	53.5	109	111	168	70.2	125
MAX	427	153	101	109	74	69	71	344	353	366	191	632
MIN	58	82	85	61	51	46	43	29	42	42	40	53
AC-FT	12990	5720	5600	4890	3560	3280	3190	6670	6590	10310	4310	7440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1996, BY WATER YEAR (WY)

MEAN	277	149	126	114	98.1	70.5	58.6	223	184	114	159	289
MAX	5255	1382	813	703	534	295	681	6954	3181	1273	4210	6521
(WY)	1942	1942	1942	1942	1942	1942	1942	1941	1941	1941	1966	1941
MIN	10.0	6.71	8.57	10.7	13.7	7.76	6.38	7.90	4.30	2.55	5.08	5.77
(WY)	1965	1978	1978	1965	1965	1978	1978	1971	1990	1966	1964	1977

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1938 - 1996	
ANNUAL TOTAL	34908		37583			
ANNUAL MEAN	95.6		103		155	
HIGHEST ANNUAL MEAN					1655	1941
LOWEST ANNUAL MEAN					19.2	1977
HIGHEST DAILY MEAN	427	Oct 19	632	Sep 12	50700	Aug 24 1966
LOWEST DAILY MEAN	30	Apr 13	29	May 23	.22	Aug 1 1966
ANNUAL SEVEN-DAY MINIMUM	33	Apr 10	34	May 17	.33	Jul 26 1966
INSTANTANEOUS PEAK FLOW			1140	Sep 12	c111000	Aug 23 1966
INSTANTANEOUS PEAK STAGE			7.25	Sep 12	33.32	Aug 23 1966
INSTANTANEOUS LOW FLOW			28	May 23	.19	Aug 1 1966
ANNUAL RUNOFF (AC-FT)	69240		74550		112600	
10 PERCENT EXCEEDS	148		317		208	
50 PERCENT EXCEEDS	79		68		56	
90 PERCENT EXCEEDS	36		47		14	

c From rating curve extended above 32,000 ft³/s, on basis of slope-area measurement of peak flow.

RIO GRANDE BASIN
08408500 DELAWARE RIVER NEAR RED BLUFF, NM

LOCATION.--Lat 32°01'23", long 104°03'15", in NE1/4SW1/4SE1/4 sec. 23, T. 26 S., R. 28 E., Eddy County, Hydrologic Uni. 13070002, near center of channel on downstream side of pier of bridge on U.S. Highway 285, 2.1 mi north of the New Mexico-Texas State line, 3.6 mi southwest of Red Bluff, 3.7 mi upstream from mouth and 14 mi south of Malaga. Mouth at Pecos River mile 405.6.

DRAINAGE AREA.--689 mi².

PERIOD OF RECORD.--April 1912 to September 1913, May 1914 to June 1915, October 1937 to current year. Published as "near Malaga" 1912-13, and as "near Angeles, lex." 1914-15.

GAGE.--Water-stage recorder. Elevation of gage is 2,900.66 ft above sea level (U.S. Boundary Commission post). Prior to May 1914, at site 3.0 mi upstream at different datum. May 1914 to June 1915, at site 2.5 mi downstream at different datum.

REMARKS.--Records fair except those for estimated daily discharges and those above 100 ft³/s, which are poor. One small upstream diversion. Several observations of water temperature were made during the year. No flow for many days most years.

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.4	1.1	1.8	2.7	1.6	1.9	2.5	1.2	.00	e55	e.00	288
2	e3.9	1.1	1.9	2.8	1.7	1.9	2.5	1.1	.00	e1.6	19	26
3	21	1.1	2.0	2.7	1.7	2.1	2.5	1.0	.00	e1.4	3.8	15
4	17	1.2	2.1	2.5	1.7	2.1	2.4	.87	.00	1.3	12	24
5	5.4	1.3	2.2	2.4	1.7	2.1	3.7	.76	.00	1.2	1.0	11
6	2.6	1.4	2.3	2.3	1.8	2.1	4.1	.68	.00	1.3	.38	8.3
7	1.7	1.4	2.3	2.4	1.9	2.0	3.6	.50	.00	1.1	.23	20
8	1.5	1.4	2.5	2.4	1.9	2.0	2.7	.41	.00	.80	1.9	23
9	1.4	1.3	2.5	2.4	1.9	2.0	2.4	.33	.00	.48	3.7	e9.0
10	1.4	1.2	2.6	2.3	1.8	2.3	2.4	.20	.00	.28	.91	e7.0
11	1.3	1.0	2.8	2.3	1.7	2.4	2.2	.13	.00	.22	.27	e6.0
12	1.3	1.0	3.0	2.3	1.7	2.5	2.2	.11	.00	.20	.18	e5.0
13	1.2	.97	3.1	2.3	1.8	2.5	2.1	.05	.00	14	.18	e4.5
14	1.2	1.1	3.2	2.2	1.8	2.5	2.0	.02	.00	7.8	.17	e4.0
15	1.2	1.3	3.2	2.2	1.8	2.5	2.0	.00	.00	1.9	.14	e3.7
16	1.2	1.3	3.3	2.2	1.7	2.4	2.0	.00	.00	1.3	.10	e3.5
17	1.1	1.4	3.5	2.1	1.7	2.5	2.1	.00	.00	18	.10	e3.3
18	1.1	1.5	4.2	1.7	1.8	2.5	2.0	.00	.00	4.3	.10	e3.1
19	1.0	1.5	4.4	1.7	1.8	2.5	1.9	.00	.00	15	.09	e3.0
20	.89	1.5	4.6	1.7	1.8	2.5	1.9	.00	.00	31	1.7	e2.8
21	.97	1.5	4.7	1.7	1.8	2.7	1.9	.00	.00	4.4	.10	e2.7
22	.92	1.6	5.0	1.8	1.8	2.7	1.8	.00	.00	5.6	.77	e2.6
23	.83	1.5	5.3	1.8	1.9	2.7	1.9	.00	.00	1.9	.42	e2.4
24	.86	1.6	5.4	1.7	1.8	2.7	1.8	.00	.00	1.3	.15	e2.3
25	.92	1.6	5.4	1.7	1.9	2.5	1.6	.00	.00	8.2	.10	e2.2
26	1.0	1.6	5.6	1.6	1.9	2.5	1.5	.00	204	2.0	44	e2.2
27	1.0	1.6	5.8	1.6	1.9	2.6	1.5	.00	167	1.1	92	e2.1
28	.98	1.5	6.0	1.7	1.9	2.8	1.3	.00	15	.48	441	e2.1
29	.98	1.5	6.3	1.6	1.9	2.8	1.2	.00	9.2	.00	466	e2.0
30	1.0	1.6	6.2	1.6	---	2.8	1.2	.00	111	.00	53	e2.0
31	1.1	---	6.4	1.6	---	2.5	---	.00	---	.00	91	---
TOTAL	79.35	40.67	119.6	64.0	52.1	74.6	64.9	7.36	506.20	183.16	1234.49	492.8
MEAN	2.56	1.36	3.86	2.06	1.80	2.41	2.16	.24	16.9	5.91	39.8	16.4
MAX	21	1.6	6.4	2.8	1.9	2.8	4.1	1.2	204	55	466	288
MIN	.83	.97	1.8	1.6	1.6	1.9	1.2	.00	.00	.00	.00	2.0
AC-FT	157	81	237	127	103	148	129	15	1000	363	2450	977

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1996, BY WATER YEAR (WY)

MEAN	29.4	3.51	3.27	3.34	3.12	2.78	5.78	9.63	18.5	14.2	22.6	22.4
MAX	748	18.9	7.99	8.57	8.77	9.44	135	233	281	166	326	303
(WY)	1956	1979	1987	1987	1987	1987	1954	1941	1938	1952	1966	1978
MIN	.000	.030	.17	.41	.12	.42	.23	.003	.000	.000	.000	.000
(WY)	1952	1965	1966	1965	1966	1993	1968	1950	1950	1947	1983	1953

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1938 - 1996	
ANNUAL TOTAL	991.25		2919.23			
ANNUAL MEAN	2.72		7.98		11.6	
HIGHEST ANNUAL MEAN					66.1	1956
LOWEST ANNUAL MEAN					1.78	1993
HIGHEST DAILY MEAN	110	Sep 11	466	Aug 29	22000	Oct 2 1955
LOWEST DAILY MEAN	.00	May 23	.00	May 15	.00	Jun 12 1938
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 5	.00	May 15	.00	Jul 29 1946
INSTANTANEOUS PEAK FLOW			1610	Aug 29	c81400	Oct 2 1955
INSTANTANEOUS PEAK STAGE			7.19	Aug 29	a27.00	Oct 2 1955
INSTANTANEOUS LOW FLOW			.00	May 14	.00	Jun 11 1938
ANNUAL RUNOFF (AC-FT)	1970		5790		8400	
10 PERCENT EXCEEDS	4.3		6.0		7.0	
50 PERCENT EXCEEDS	1.6		1.8		2.2	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
c From rating curve extended above 6,500 ft³/s, on basis of slope-area measurements at gage heights, 12.84 ft, 17.55 ft and 27.0 ft.
a From floodmarks.

RIO GRANDE BASIN
08410000 RED BLUFF RESERVOIR NEAR ORLA, TX

LOCATION.--Lat 31°54'04", long 103°54'35", Reeves County, Hydrologic Unit 13070001, at right end of Red Bluff Dam on the Pecos River, 2.8 mi upstream from Salt Creek, and 5.2 mi north of Orla.

DRAINAGE AREA.--20,720 mi², approximately (contributing area).

PERIOD OF RECORD.--February 1937 to current year. Monthly contents only for some periods, published in WSP 1312.

GAGE.--Nonrecording gage. Datum of gage is 0.43 ft below sea level.

REMARKS.--Reservoir is formed by a rock-faced earthfill dam 9,200 ft long. The dam was completed and storage began in September 1936. The dam and reservoir are owned and operated by the Red Bluff Water Power Control District. The water is used for power development and for irrigation from Mentone to Grandfalls. The uncontrolled emergency spillway, 790 ft wide, is a cut through natural ground located to the right of right end of dam. The controlled service spillway is equipped with 12 tainter gates that are 25- by 15-ft high. Inflow is regulated by many reservoirs and diversion dams. The capacity curve is based on U.S. Geological Survey topographic map and aerial photography, survey of 1986. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	2,856.0	-
Crest of emergency spillway	2,845.0	324,000
Top of gates (top of conservation pool)	2,842.0	289,700
Crest of service spillway and bottom of tainter gates	2,827.0	155,700
Lowest gated outlet (invert)	2,764.0	2,800

COOPERATION.--Gage height records and capacity curve were furnished by Red Bluff Water Power and Control District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 352,000 acre-ft, Sept. 27, 28, 1941, gage height, 2,846.2 ft, observed on nonrecording gage at service spillway (affected by variable drawdown due to flow through tainter gates); minimum observed, 11,080 acre-ft, May 13, 1948, gage height, 2,781.4 ft.

EXTREMES (AT 0800) FOR CURRENT YEAR.--Maximum contents observed, 77,520 acre-ft, April 10-12 gage height, 2,812.82 ft; minimum observed, 56,690 acre-ft, Aug. 25, gage height, 2,807.31 ft.

Capacity table (gage height, in feet, and total contents, in acre-feet)

2,806.0	52,460	2,814.0	82,630	2,820.0	112,200
2,808.0	59,000	2,816.0	91,830	2,822.0	123,600
2,810.0	66,220	2,818.0	101,700	2,824.0	135,800
2,812.0	74,090				

DAILY OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60060	67570	68880	72650	75470	77020	76730	75680	66290	63300	58370	59710
2	60410	67600	68990	72800	75510	77020	76730	75350	66370	63340	58030	60770
3	60480	67600	69110	72930	75600	77060	76730	74510	66450	63380	57700	61120
4	60550	67570	69260	73050	75680	77060	76770	74010	66370	63380	57530	61220
5	60910	67570	69380	73170	75770	77100	76850	73530	66290	63340	57390	61300
6	61330	67600	69490	73290	75850	77100	77020	73050	66220	63300	57060	61370
7	61370	67570	69610	73410	75890	77100	77190	72560	66070	63270	57030	61440
8	61400	67530	69720	73530	75930	77150	77360	72080	65700	62750	56990	61510
9	61440	67450	69840	73690	76010	77150	77440	71600	65180	62180	56960	61580
10	61400	67370	69910	73850	76100	77150	77520	71120	64740	61610	56930	61650
11	61580	67290	69990	74010	76180	77190	77520	70630	64150	61050	56990	61720
12	61790	67220	70070	74130	76270	77190	77520	70150	63640	60770	56990	62240
13	62350	67140	70150	74260	76350	77190	77480	69720	63190	60730	56990	63340
14	63190	67060	70270	74380	76430	77230	77480	69300	62970	60700	56990	64370
15	63710	67060	70390	74510	76520	76810	77440	68880	63190	60660	56960	64740
16	64220	67140	70510	74640	76600	76770	77440	68450	62820	61300	56930	64850
17	64890	67260	70630	74760	76640	76730	77400	68060	62460	61300	56930	64960
18	65550	67370	70790	74800	76690	76730	77400	67680	62490	61260	56890	65070
19	66220	67490	70950	74840	76730	76690	77360	67290	62530	61220	56890	65180
20	66870	67600	71080	74890	76770	76690	77360	66910	62460	61190	56960	65260
21	67290	67720	71240	74930	76810	76690	77310	66520	62350	61150	56960	65290
22	67330	67830	71360	74970	76850	76730	77310	66140	62240	61120	56890	65330
23	67180	67950	71520	75010	76850	76730	77270	65770	62140	60840	56830	65370
24	67060	68060	71680	75050	76900	76690	77270	65400	61960	60590	56760	65400
25	66870	68180	71830	75140	76900	76690	77230	65480	62310	60380	56690	65290
26	66910	68300	72000	75220	76940	76690	77230	65590	62710	60170	56790	65110
27	66990	68410	72160	75260	76940	76690	76940	65740	62900	59920	56990	64920
28	67060	68530	72320	75310	76980	76690	76690	65850	63080	59610	57460	64740
29	67180	68640	72440	75350	76980	76690	76350	65990	63150	59290	58170	64560
30	67290	68760	72560	75390	---	76690	76010	66140	62900	58970	59010	64440
31	67490	---	72680	75430	---	76690	---	66220	---	58670	59360	---
MAX	67490	68760	72680	75430	76980	77230	77520	75680	66450	63380	59360	65400
MIN	60060	67060	68880	72650	75470	76690	76010	65400	61960	58670	56690	59710
(+)	2810.33	2810.66	2811.65	2812.32	2812.69	2812.62	2812.46	2810.00	2809.10	2807.90	2808.10	2809.52
(@)	+7530	+1270	+3920	+2750	+1550	-290	-680	-9790	-3320	-4230	+690	+5080

CAL YR 1995 MAX 90380 MIN 56120 (@) -8900
WTR YR 1996 MAX 77520 MIN 56690 (@) +4480

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

08412500 PECOS RIVER NEAR ORLA, TX

LOCATION.--Lat 31°52'21", long 103°49'52", Reeves County, Hydrologic Unit 1300001, on right bank at bridge on Farm Road 652, 5.5 mi downstream form Salt Creek (Screw Bean Arroyo), 5.9 mi northeast of Orla, and 8.5 mi downstream from Red Bluff Reservoir.

DRAINAGE AREA.--21,210 mi² approximately (contributing area).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 928: 1937.

GAGE.--Water-stage recorder. Datum of gage is 2,730.86 ft above sea level. Prior to Nov. 16, 1969, at site 6.9 mi downstream at datum 12.81 ft lower.

REMARKS.--No estimated daily discharges. Records good. Most of flow is releases from storage in Red Bluff Reservoir (station 08410000) 8.5 mi upstream. Occasional runoff occurs from draws between dam and station. There are many diversions above Red Bluff Reservoir for irrigation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	9.4	8.6	11	12	7.4	7.8	223	244	15	174	9.1
2	28	11	9.8	11	15	6.4	8.0	255	245	14	174	8.4
3	13	109	9.1	11	10	4.3	8.0	304	246	13	174	8.6
4	9.8	115	9.2	12	10	5.6	7.4	224	246	13	176	8.5
5	9.1	114	7.0	10	10	6.1	11	227	246	12	176	8.1
6	9.4	22	6.5	11	10	6.1	8.5	286	246	11	122	8.0
7	9.7	110	5.9	11	11	6.0	9.2	289	246	20	43	7.8
8	9.8	118	6.0	11	11	5.4	9.9	290	246	267	42	7.6
9	10	119	16	11	11	5.8	10	289	246	288	267	29
10	101	120	9.7	11	11	6.9	10	264	246	289	105	20
11	106	122	9.5	11	10	7.4	9.9	200	237	288	77	14
12	107	122	9.5	10	10	7.4	9.5	200	206	287	54	14
13	90	103	9.6	11	10	7.4	9.7	200	205	287	46	11
14	12	59	9.6	10	11	127	8.7	199	206	287	43	16
15	9.5	17	9.7	10	10	195	8.4	199	206	298	42	24
16	9.0	12	10	11	10	11	8.6	198	211	1140	42	13
17	8.9	7.3	9.7	11	10	9.8	8.8	198	147	344	34	11
18	8.8	11	10	11	10	8.7	8.4	198	39	321	14	10
19	8.4	11	9.7	12	9.9	8.4	8.4	197	31	298	12	9.7
20	9.6	10	9.8	12	9.6	8.8	8.2	176	30	293	73	9.1
21	105	10	10	12	9.4	8.9	8.4	175	30	292	79	8.7
22	111	10	10	12	8.9	8.8	8.2	175	30	291	78	9.0
23	112	10	10	12	8.5	8.9	8.6	172	43	273	55	8.2
24	113	10	10	11	8.5	8.5	8.8	151	80	219	54	8.9
25	88	7.3	10	11	8.6	8.2	8.3	150	526	232	53	87
26	12	8.8	10	11	8.5	7.8	44	149	118	214	48	94
27	10	8.9	10	11	8.1	8.9	138	149	136	158	11	94
28	10	9.4	11	11	7.5	8.4	131	150	42	177	9.3	95
29	10	9.7	14	11	7.6	8.3	126	150	20	177	20	94
30	9.9	6.5	15	11	---	7.7	155	165	16	176	12	19
31	10	---	11	10	---	7.7	---	254	---	174	9.7	---
TOTAL	1170.9	1412.3	305.9	342	287.1	543.0	814.7	6456	5016	7168	2319.0	764.7
MEAN	37.8	47.1	9.87	11.0	9.90	17.5	27.2	208	167	231	74.8	25.5
MAX	113	122	16	12	15	195	155	304	526	1140	267	95
MIN	8.4	6.5	5.9	10	7.5	4.3	7.4	149	16	11	9.3	7.6
AC-FT	2320	2800	607	678	569	1080	1620	12810	9950	14220	4600	1520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1996, BY WATER YEAR (WY)

MEAN	159	70.1	42.9	39.9	45.7	87.5	199	201	229	237	197	237
MAX	5717	1474	838	712	617	288	601	2717	3481	1425	686	6515
(WY)	1942	1942	1942	1942	1942	1955	1942	1941	1941	1941	1941	1941
MIN	1.78	1.38	1.77	.76	.46	.84	1.05	5.86	17.1	8.11	.74	8.70
(WY)	1948	1960	1962	1965	1965	1965	1965	1978	1953	1984	1965	1953

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1938 - 1996	
ANNUAL TOTAL	26419.4		26599.6			
ANNUAL MEAN	72.4		72.7		146	
HIGHEST ANNUAL MEAN					1284	1941
LOWEST ANNUAL MEAN					13.1	1953
HIGHEST DAILY MEAN	405	Jun 30	1140	Jul 16	23700	Sep 28 1941
LOWEST DAILY MEAN	5.9	Dec 7	4.3	Mar 3	.00	Sep 9 1946
ANNUAL SEVEN-DAY MINIMUM	7.6	Dec 2	5.6	Mar 3	.00	Jul 7 1965
INSTANTANEOUS PEAK FLOW			1570	Jul 16	23700	Sep 29 1941
INSTANTANEOUS PEAK STAGE			12.60	Jul 16	20.74	Sep 29 1941
INSTANTANEOUS LOW FLOW			1.8	Feb 1	.00	Sep 9 1946
ANNUAL RUNOFF (AC-FT)	52400		52760		105600	
10 PERCENT EXCEEDS	189		239		368	
50 PERCENT EXCEEDS	14		11		34	
90 PERCENT EXCEEDS	9.0		8.2		5.3	

08412500 PECOS RIVER NEAR ORLA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1937 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1937 to current year.
WATER TEMPERATURE: March 1953 to current year.

REMARKS.--October 1937 to September 1969, this station was published as 08410100 Pecos River below Red Bluff Dam, near Orla. Water-quality station operation transfered from the Texas District to the New Mexico District beginning with the 1993 water year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 29,400 microsiemens May 16, 1978; minimum daily, 1,600 microsiemens June 19, 1984.
WATER TEMPERATURE: Maximum daily, 32.0°C, Aug 4, 1991; minimum daily, 0.0°C, many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 20,500 microsiemens Sept. 10; minimum daily, 6,560 microsiemens Aug. 10.
WATER TEMPERATURE: Maximum daily, 29.0°C, July 2; minimum daily 3.0°C, Jan. 7, Feb. 3 and 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
DEC 1995									
01...	1215	8.6	10500	7.9	21.0	8.5	691	10.0	98
MAR 1996									
11...	1200	8.0	10800	8.0	25.5	11.0	694	9.8	102
APR									
09...	1235	10	11800	7.8	30.0	22.0	697	8.6	112
JUN									
10...	1145	247	9960	8.0	35.0	25.0	690	8.0	111
JUL									
25...	1030	228	9280	7.6	24.5	25.5	696	11.4	158
SEP									
10...	0950	20	19500	7.8	26.0	24.0	695	8.4	117

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3
DEC 1995									
01...	2700	2600	640	260	1500	13	16	134	0
MAR 1996									
11...	2700	2600	630	270	1600	13	32	155	0
APR									
09...	2700	2600	660	260	2000	17	34	142	0
JUN									
10...	2700	2600	650	250	1400	12	41	106	0
JUL									
25...	2400	2300	580	230	1300	12	37	95	0
SEP									
10...	3700	3600	940	340	4600	33	38	137	0

DATE	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)
DEC 1995									
01...	110	--	2100	2400	0.80	12	6990	--	--
MAR 1996									
11...	127	--	2100	2700	1.0	9.5	7420	--	--
APR									
09...	116	116	2300	3300	1.0	7.0	8630	1000	<24
JUN									
10...	87	95	2300	2400	1.0	9.4	7100	466	<30
JUL									
25...	78	--	2200	2200	0.90	11	6610	--	--
SEP									
10...	112	--	3000	6400	1.1	5.9	15400	--	--

08412500 PECOS RIVER NEAR ORLA, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13000	10600	10200	11000	11900	9980	10900	9940	10300	11100	8560	12300
2	10800	10500	---	11100	11200	9960	10900	9890	10400	11500	9590	12100
3	16000	9200	---	11100	12000	10000	11000	9880	10300	11700	9580	12000
4	7100	9200	---	12200	11000	10000	11000	9920	10400	11600	9320	---
5	9800	9200	10900	11000	11200	10300	10600	9910	10400	11500	9500	11500
6	10400	9000	11000	11500	11100	10200	10300	9900	10400	11500	9550	11400
7	11400	9400	11000	11500	11500	9970	10800	9890	10400	11500	10200	11400
8	11400	9200	11100	11600	11900	10500	11100	9900	10400	9000	10100	11300
9	12800	9000	11500	11900	11900	10600	12700	9900	10400	8980	9460	11200
10	10400	9100	10800	12000	12000	10600	12800	9870	11400	9030	6560	20500
11	10200	9000	10000	12000	12100	11100	12800	10000	9280	9030	8290	11800
12	10200	9500	11100	12100	12300	11000	13400	9960	9390	9000	8670	20200
13	10100	9200	11100	12000	12000	11000	---	9950	9330	9000	9490	12700
14	10500	9100	11200	12300	12000	11100	13300	10000	9130	9030	9690	10200
15	10800	9200	11000	12000	12000	9470	13200	10000	9110	9010	9750	9630
16	11500	9500	11200	12300	12000	10100	12800	10000	9890	14200	9810	8490
17	11200	10000	12000	12100	10900	---	12300	10000	9260	8980	9780	10000
18	11400	10400	11000	12200	10900	10800	12200	10000	10200	9440	9890	10400
19	11200	10200	10900	12000	10800	10800	12100	10000	9940	9030	10800	10800
20	11900	10600	10900	12000	10300	10800	12100	10000	9750	8990	10300	10800
21	10100	10100	11000	11900	10400	10900	12000	10200	9630	8950	9460	10900
22	9800	10000	11000	11800	10200	10900	12000	10100	9590	8950	9440	10800
23	10200	---	10900	11700	10100	10900	11900	10100	9560	8930	9670	10600
24	9800	10200	10900	11900	10800	11000	11800	10100	9130	8960	9570	10600
25	9800	10400	11000	11400	10200	11000	11800	10000	7440	8880	9520	8890
26	9600	10400	10500	12000	9990	11000	11700	10300	9100	8890	9530	8540
27	10600	10200	10900	11200	9990	10900	9870	10200	9630	8620	9580	8420
28	10900	11000	11000	11500	10000	10800	9830	10300	8960	8640	10100	8460
29	10900	10400	11000	11800	10000	10900	9870	10300	9830	8720	10900	8470
30	11000	10100	11500	11600	---	11000	9930	10300	10500	8630	14700	8500
31	10600	---	10100	11100	---	11000	---	10300	---	8610	13700	---
MEAN	10800	9790	11000	11700	11100	10600	11600	10000	9780	9670	9840	11100
MAX	16000	11000	12000	12300	12300	11100	13400	10300	11400	14200	14700	20500
MIN	7100	9000	10000	11000	9990	9470	9830	9870	7440	8610	6560	8420

WTR YR 1996 MEAN 10600 MAX 20500 MIN 6560

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	---	7.0	5.5	4.5	7.0	14.0	16.0	22.0	27.0	27.0	27.0
2	22.0	15.0	8.0	5.0	4.0	7.0	15.0	17.5	24.0	29.0	26.0	26.0
3	20.0	14.0	---	3.5	3.0	9.5	19.0	18.0	23.5	28.5	26.0	25.0
4	20.0	14.0	---	6.0	3.0	10.0	17.0	18.0	24.0	26.0	26.0	---
5	20.5	14.0	10.0	6.5	3.5	13.0	14.0	18.0	23.0	27.5	27.0	25.0
6	18.0	16.0	10.5	5.0	5.0	14.5	11.5	18.5	24.0	26.5	27.0	25.0
7	16.0	15.0	10.0	3.0	7.0	9.0	13.0	20.0	24.0	27.0	27.0	25.0
8	16.0	14.0	9.0	3.5	8.0	7.5	15.0	19.0	23.5	26.0	---	24.5
9	19.0	13.0	7.5	3.5	9.5	5.0	17.0	19.0	24.0	26.0	25.5	24.5
10	19.0	16.0	5.0	4.5	11.0	7.0	20.0	20.0	24.0	26.0	24.5	24.5
11	18.0	12.0	5.0	7.0	11.0	9.0	19.0	21.5	25.0	27.0	26.0	25.0
12	18.0	14.0	5.0	7.0	9.0	11.5	18.0	21.0	24.0	26.0	26.0	26.0
13	18.0	13.0	9.5	6.5	8.0	14.0	---	21.0	25.0	26.0	26.0	22.0
14	18.0	13.0	9.5	7.5	10.0	15.0	17.0	21.5	24.0	28.0	27.0	22.5
15	16.5	12.0	9.0	7.5	10.0	12.0	16.0	21.0	24.0	27.0	26.0	26.0
16	16.0	13.0	7.5	8.0	9.5	19.0	16.0	21.0	25.0	23.0	26.0	22.0
17	16.0	13.0	7.0	11.0	10.0	---	17.5	21.0	25.0	25.5	26.0	23.0
18	20.0	11.0	8.0	6.5	9.0	12.5	18.0	21.0	26.5	26.0	26.5	24.5
19	17.0	11.0	6.5	8.0	10.0	12.0	19.0	22.0	27.5	26.0	27.0	23.0
20	15.0	15.0	4.5	8.0	13.0	13.5	17.0	21.0	27.0	27.0	26.0	22.0
21	16.0	12.5	6.0	5.0	16.0	13.0	17.0	21.0	27.0	27.0	25.5	21.0
22	20.0	14.0	6.0	9.5	14.5	14.0	16.0	21.5	27.0	27.0	25.0	21.5
23	17.0	14.0	5.0	5.5	12.5	16.0	17.5	22.0	26.5	27.5	25.5	23.0
24	15.0	12.0	6.5	10.0	13.0	17.0	19.0	22.0	26.0	26.0	25.5	24.5
25	16.0	14.0	8.0	9.0	15.0	12.5	20.0	24.0	22.5	26.0	26.0	22.0
26	16.0	13.0	4.5	7.0	10.0	10.0	18.0	23.0	24.5	27.0	25.0	22.5
27	18.0	11.5	4.0	6.0	12.5	11.0	17.0	22.0	24.5	26.0	25.0	20.0
28	14.0	10.0	4.0	7.0	10.0	12.5	18.5	21.5	24.5	27.0	25.5	20.0
29	15.0	7.5	5.0	5.0	8.5	15.0	17.0	21.0	27.0	27.0	23.5	19.0
30	18.0	7.0	5.0	7.5	---	15.5	17.0	23.0	27.5	28.5	24.5	19.0
31	20.0	---	5.0	6.5	---	15.5	---	23.0	---	27.0	28.5	---
MEAN	17.7	12.9	6.8	6.5	9.3	12.0	16.9	20.6	24.9	26.7	25.9	23.3
MAX	22.0	16.0	10.5	11.0	16.0	19.0	20.0	24.0	27.5	29.0	28.5	27.0
MIN	14.0	7.0	4.0	3.0	3.0	5.0	11.5	16.0	22.0	23.0	23.5	19.0

WTR YR 1996 MEAN 17.0 MAX 29.0 MIN 3.0

08446500 PECOS RIVER NEAR GIRVIN, TX

LOCATION.--Lat 31°06'47", long 102°25'02", Pecos County, Hydrologic Unit 13070008, on right bank 2.1 mi upstream from Comanche Creek, 3.8 mi northwest of Girvin, and 7.2 mi upstream from bridge on U.S. Highway 67.

DRAINAGE AREA.--29,560 mi² approximately, for contributing area of supplementary gage 7.2 mi downstream.

PERIOD OF RECORD.--August 1939 to current year.
Water-quality records.--Chemical analyses: October 1939 to June 1941, October 1946 to September 1947, October 1953 to September 1982. Pesticide analyses: October 1968 to September 1974.

GAGE.--Water-stage recorder with concrete control and measuring flume. Datum of gage not determined. Supplementary water-stage recorder, used as regular gage prior to July 17, 1951, is now used only for peaks exceeding about 750 ft³/s, 7.2 mi downstream at datum 2,269.65 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Flow is largely regulated (70 percent) by Red Bluff Reservoir (station 08410000). There are also numerous diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1932 occurred Oct. 5, 1941.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	69	29	31	27	26	26	12	19	8.4	9.6	36
2	34	85	28	31	27	26	25	12	18	8.5	9.2	49
3	34	76	28	31	27	26	24	12	18	8.2	8.8	46
4	34	51	29	31	27	26	23	11	16	8.2	7.9	39
5	34	39	30	31	27	26	26	11	17	7.8	7.7	37
6	34	35	30	31	27	26	27	9.4	18	7.2	6.9	33
7	32	33	30	31	28	26	25	9.4	16	6.7	6.9	34
8	32	32	29	30	28	25	23	9.0	15	6.5	6.9	32
9	32	30	28	30	28	25	21	8.0	14	6.2	8.7	30
10	32	30	28	30	28	25	20	17	13	6.3	9.3	31
11	32	29	28	34	28	25	19	35	13	7.2	22	28
12	32	28	29	32	27	25	19	33	13	7.2	22	26
13	32	43	29	32	27	25	18	36	14	7.2	12	24
14	32	55	30	31	27	25	18	30	13	7.4	17	38
15	31	44	29	31	28	25	18	21	13	7.2	39	58
16	30	42	28	31	27	25	20	16	12	7.1	30	53
17	30	51	29	31	27	25	21	14	12	6.8	26	37
18	30	48	29	30	27	24	22	14	12	6.7	22	34
19	30	49	31	30	27	24	21	14	11	6.6	32	33
20	48	63	34	30	26	24	20	14	11	6.5	32	37
21	62	68	33	29	26	24	20	14	10	6.7	26	37
22	57	63	32	28	26	24	20	14	9.7	7.6	23	32
23	44	49	33	28	26	43	18	14	9.6	7.6	24	29
24	36	39	33	28	26	65	15	12	10	7.6	26	28
25	33	35	32	28	26	47	14	10	10	7.2	24	27
26	32	33	32	28	26	35	14	9.7	11	6.5	24	27
27	31	32	32	28	26	32	13	9.1	12	6.3	28	27
28	30	30	31	28	26	30	13	9.1	10	10	29	26
29	30	30	31	28	26	29	12	9.2	9.0	15	34	26
30	30	30	31	28	---	27	12	10	8.4	13	34	25
31	46	---	31	27	---	27	---	18	---	11	30	---
TOTAL	1091	1341	936	927	779	887	587	466.9	387.7	242.4	637.9	1019
MEAN	35.2	44.7	30.2	29.9	26.9	28.6	19.6	15.1	12.9	7.82	20.6	34.0
MAX	62	85	34	34	28	65	27	36	19	15	39	58
MIN	30	28	28	27	26	24	12	8.0	8.4	6.2	6.9	24
AC-FT	2160	2660	1860	1840	1550	1760	1160	926	769	481	1270	2020

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1996, BY WATER YEAR (WY)

MEAN	208	110	70.6	66.3	56.2	45.9	37.1	47.8	106	48.6	35.1	67.2
MAX	8506	3007	1192	935	769	314	142	538	3556	813	376	1168
(WY)	1942	1942	1942	1942	1942	1942	1957	1942	1941	1941	1941	1941
MIN	9.52	13.0	15.7	18.3	14.5	16.7	11.3	7.62	2.84	3.86	4.13	6.05
(WY)	1980	1974	1984	1984	1982	1966	1985	1985	1983	1964	1969	1983

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1939 - 1996	
ANNUAL TOTAL	10265.7		9301.9			
ANNUAL MEAN	28.1		25.4		74.9	
HIGHEST ANNUAL MEAN					1386	1942
LOWEST ANNUAL MEAN					16.2	1984
HIGHEST DAILY MEAN	221	Jul 5	85	Nov 2	19400	Oct 5 1941
LOWEST DAILY MEAN	5.8	May 21	6.2	Jul 9	1.9	Jun 19 1982
ANNUAL SEVEN-DAY MINIMUM	6.3	May 16	6.8	Jul 6	2.3	Jul 1 1983
INSTANTANEOUS PEAK FLOW			95	Sep 14	20000	Oct 5 1941
INSTANTANEOUS PEAK STAGE			1.88	Nov 2	20.49	Oct 5 1941
ANNUAL RUNOFF (AC-FT)	20360		18450		54280	
10 PERCENT EXCEEDS	40		36		88	
50 PERCENT EXCEEDS	27		27		30	
90 PERCENT EXCEEDS	13		8.9		11	

08447410 PECOS RIVER NEAR LANGTRY, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°48'10", long 101°26'45", Val Verde County, Hydrologic Unit 13040212, at gaging station 7.4 mi east of Langtry, and 15.0 mi upstream from confluence with the Rio Grande.

DRAINAGE AREA.--35,179 mi².

PERIOD OF RECORD.--Inorganic chemical analyses: October 1954 to current year. Biochemical analyses: October 1974 to August 1995. Organic analyses: July 1975 to June 1982, October 1995 to current year. Sediment analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1970 to September 1976, October 1980 to September 1985.
WATER TEMPERATURE: October 1970 to September 1985.

INSTRUMENTATION.--Specific conductance and water temperature were recorded continuously from November 1980 to September 1985.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,000 microsiemens Mar. 21, 22, 1981; minimum daily, 230 microsiemens Oct. 11, 1981.
WATER TEMPERATURE: Maximum daily, 32.5°C June 8, 1981; minimum daily, 1.5°C Dec. 26, 27, 1983.

REMARKS.--Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1996 are given in International Boundary and Water Commission Water Bulletins Nos. 65 and 66.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT												
24...	1050	117	3470	8.1	19.5	0.20	8.6	98	660	540	140	74
FEB												
22...	1122	136	4820	8.1	18.5	0.20	9.6	110	910	760	200	98
MAR												
21...	1000	123	4750	8.1	18.0	0.20	9.5	106	920	780	200	100
APR												
02...	1030	120	4760	8.1	19.0	0.20	9.0	103	890	750	190	100
17...	0732	107	5200	8.0	19.5	0.20	10.3	120	960	850	200	110
MAY												
02...	1200	94	4230	7.9	22.5	0.20	7.1	87	780	680	170	86
30...	1140	80	3940	7.8	29.0	0.40	6.3	87	740	630	160	81
JUN												
28...	1125	89	2800	8.1	28.5	1.5	7.9	108	540	410	120	57
JUL												
17...	1020	75	3000	8.1	28.0	0.20	6.9	93	590	470	130	63
AUG												
14...	1035	94	2460	8.1	30.5	0.20	7.3	103	430	320	92	48
25...	1455	282	996	7.8	25.0	7.5	7.2	92	230	130	65	16
SEP												
12...	1025	210	2980	8.0	27.5	0.20	7.2	97	610	460	140	62
15...	1830	5820	1850	7.5	25.0	100	9.2	120	360	270	91	33

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT												
24...	480	8	8.7	0	148	122	480	750	0.80	13	2200	2020
FEB												
22...	690	10	10	0	185	152	660	1100	0.90	8.8	3020	2860
MAR												
21...	700	10	11	0	164	134	690	1200	1.0	7.2	3150	2990
APR												
02...	700	10	9.6	0	166	136	680	1200	0.90	7.4	3100	2970
17...	810	11	5.9	0	129	106	740	1300	1.0	7.0	3320	3240
MAY												
02...	640	10	10	0	129	106	590	1100	0.80	9.1	2800	2670
30...	560	9	9.0	0	132	108	540	940	0.90	14	2680	2370
JUN												
28...	360	7	7.1	0	155	126	380	610	0.90	13	1750	1630
JUL												
17...	400	7	7.6	0	146	118	380	650	0.80	14	1810	1720
AUG												
14...	310	7	6.8	0	135	111	310	520	0.70	8.4	1480	1360
25...	99	3	3.5	0	126	103	110	170	0.30	9.6	589	545
SEP												
12...	410	7	8.4	0	184	150	420	670	0.90	14	1830	1820
15...	230	5	6.3	0	114	94	240	380	0.50	9.6	1130	1050

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
OCT												
24...	0.210	0.210	0.010	0.220	0.220	0.030	0.42	0.17	0.20	0.20	<0.010	<0.010
FEB												
22...	0.280	0.280	0.020	0.300	0.300	0.040	--	--	0.20	<0.20	<0.010	<0.010
MAR												
21...	0.100	0.100	0.010	0.110	0.110	0.130	0.41	0.17	0.30	0.30	0.020	0.030
APR												
02...	0.060	0.060	0.030	0.090	0.090	0.050	0.39	0.25	0.20	0.30	<0.010	0.010
17...	0.080	--	<0.010	0.080	0.080	0.030	0.38	0.27	0.30	0.30	<0.010	<0.010
MAY												
02...	0.160	0.160	0.010	0.170	0.170	0.140	0.77	0.46	0.50	0.60	0.020	<0.010
30...	0.080	0.080	0.020	0.100	0.100	0.270	0.80	0.43	0.60	0.70	0.030	<0.010
JUN												
28...	0.110	0.110	0.010	0.120	0.120	<0.015	0.32	0.20	<0.20	0.20	<0.010	<0.010
JUL												
17...	0.110	--	<0.010	0.110	0.110	0.030	0.41	0.27	<0.20	0.30	0.020	<0.010
AUG												
14...	0.110	0.110	0.010	0.120	0.120	0.030	0.42	0.27	0.20	0.30	<0.010	<0.010
25...	1.87	1.87	0.030	1.90	1.90	0.060	2.6	0.64	0.40	0.70	0.020	<0.010
SEP												
12...	0.430	0.430	0.020	0.450	0.450	0.060	0.75	0.24	0.20	0.30	<0.010	<0.010
15...	0.880	0.880	0.020	0.900	0.900	0.060	1.5	0.54	0.40	0.60	0.020	<0.010

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ANTI-MONY, DIS-SOLVED (UG/L AS SB)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	BORON, DIS-SOLVED (UG/L AS B)
OCT												
24...	<0.010	3.9	0.20	19	6.0	84	10	--	--	73	--	--
FEB												
22...	0.001	1.6	0.20	4	1.5	52	1.0	<1.0	<1	81	<1.0	300
MAR												
21...	0.001	2.4	0.30	3	1.0	75	<2.0	<2.0	<1	83	<2.0	320
APR												
02...	0.001	2.2	1.7	2	0.65	76	2.0	<2.0	<1	102	<2.0	310
17...	<0.001	2.6	0.60	5	1.4	85	3.0	<3.0	<1	79	<3.0	340
MAY												
02...	0.001	5.6	0.50	4	1.0	100	4.0	<2.0	1	105	<2.0	240
30...	0.001	3.0	0.40	5	1.1	93	3.0	<2.0	1	92	<2.0	290
JUN												
28...	<0.001	2.2	0.30	--	--	--	2.0	<2.0	1	86	<2.0	207
JUL												
17...	<0.001	2.2	0.40	16	3.2	84	3.0	<2.0	1	76	<2.0	226
AUG												
14...	<0.001	2.6	0.40	6	1.5	81	3.0	<1.0	1	78	<1.0	198
25...	<0.001	6.2	0.70	24	18	100	5.0	<1.0	1	59	<1.0	90
SEP												
12...	<0.001	2.7	0.30	--	--	--	<2.0	<2.0	1	86	<2.0	210
15...	<0.001	5.5	>5.0	--	--	--	2.0	<1.0	<1	77	<1.0	121

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)
OCT												
24...	--	--	<9.0	--	<9.0	--	72	<3.0	<30	<1.0	<1	<1.0
FEB												
22...	<1.0	5.0	<1.0	5.0	<9.0	<1.0	97	3.0	8.0	3.0	<1	<1.0
MAR												
21...	<2.0	4.0	<2.0	6.0	46	<2.0	98	3.0	8.0	5.0	<1	<2.0
APR												
02...	<2.0	7.0	<2.0	8.0	<9.0	<2.0	94	5.0	10	6.0	<1	<2.0
17...	<3.0	4.0	<3.0	5.0	<12	<3.0	110	5.0	7.0	6.0	<1	<3.0
MAY												
02...	<2.0	3.0	<2.0	5.0	<12	<2.0	86	29	6.0	5.0	<1	<2.0
30...	<2.0	<2.0	<2.0	4.0	150	<2.0	80	9.0	5.0	5.0	<1	<2.0
JUN												
28...	<2.0	<2.0	<2.0	<2.0	<9.0	<2.0	55	<2.0	5.0	3.0	<1	<2.0
JUL												
17...	<2.0	2.0	<2.0	3.0	<9.0	<2.0	55	<2.0	5.0	3.0	<1	<2.0
AUG												
14...	<1.0	2.0	<1.0	1.0	<9.0	<1.0	51	1.0	5.0	3.0	<1	<1.0
25...	<1.0	1.0	<1.0	2.0	6.0	<1.0	18	3.0	3.0	3.0	<1	<1.0
SEP												
12...	<2.0	<2.0	<2.0	3.0	<9.0	<2.0	56	2.0	7.0	3.0	<1	<2.0
15...	<1.0	<1.0	<1.0	2.0	3.0	<1.0	30	<1.0	4.0	1.0	<1	<1.0

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)	URANIUM NATURAL DISSOLVED (UG/L AS U)	ACETOCHLOR, WATER FLTRD REC (UG/L)	ALACHLOR, WATER, DISS, REC, (UG/L)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L)	ATRAZINE, WATER, DISS, REC (UG/L)	METHYL AZINPHOS WAT FLT 0.7 U GF, REC (UG/L)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L)	BUTYLATE, WATER, DISS, REC (UG/L)
OCT											
24...	3000	<18	--	--	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
FEB											
22...	3800	<18	5.0	4.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
MAR											
21...	3900	<18	5.0	4.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
APR											
02...	3800	<18	9.0	5.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
17...	4300	<24	6.0	4.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
MAY											
02...	3300	<24	6.0	3.0	<0.002	<0.002	<0.002	0.017	<0.001	<0.002	<0.002
30...	3100	<18	7.0	2.0	<0.002	<0.002	<0.002	0.005	<0.001	<0.002	<0.002
JUN											
28...	2200	<18	4.0	<2.0	<0.002	<0.002	<0.002	E0.002	<0.001	<0.002	<0.002
JUL											
17...	2400	<18	3.0	2.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
AUG											
14...	1800	<18	5.0	2.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
25...	680	8	3.0	1.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
SEP											
12...	2500	<18	2.0	3.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002
15...	1300	8	2.0	2.0	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002

DATE	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L)	CHLORPYRIFOS DISSOLVED (UG/L)	CHLORPYRIFOS, WATER, DISS, REC (UG/L)	DIAZINON WATER FLTRD 0.7 U GF, REC (UG/L)	P,P' DDE DISSOLV (UG/L)	DIAZINON, DISSOLVED (UG/L)	DIELDRIN DISSOLVED (UG/L)	2,6-DIANILINE WAT FLT 0.7 U GF, REC (UG/L)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L)	ETHALFLURALIN WATER FLTRD 0.7 U GF, REC (UG/L)
OCT											
24...	<0.003	<0.003	<0.004	<0.004	E0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
FEB											
22...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	0.150	<0.001	<0.003	<0.017	<0.002
MAR											
21...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
APR											
02...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
17...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
MAY											
02...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
30...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
JUN											
28...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
JUL											
17...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
AUG											
14...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
25...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
SEP											
12...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
15...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002

DATE	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L)	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L)	FONOFOS WATER DISS REC (UG/L)	ALPHA BHC DISSOLVED (UG/L)	LINDANE DISSOLVED (UG/L)	LINURON WATER FLTRD 0.7 U GF, REC (UG/L)	MALATHION, DISSOLVED (UG/L)	METOLACHLOR WATER DISSOLV (UG/L)	METRIBUZIN SENCOR WATER DISSOLV (UG/L)	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L)	NAPROPAMIDE WATER FLTRD 0.7 U GF, REC (UG/L)
OCT											
24...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
FEB											
22...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
MAR											
21...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
APR											
02...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
17...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
MAY											
02...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
30...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
JUN											
28...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
JUL											
17...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
AUG											
14...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
25...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
SEP											
12...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
15...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	PARATHION, DISSOLVED (UG/L)	METHYL PARATHION WAT FLT 0.7 U GF, REC (UG/L)	PEBULATE WATER FLTRD 0.7 U GF, REC (UG/L)	PENDIMETHALIN WAT FLT 0.7 U GF, REC (UG/L)	PERMETHRIN CIS WAT FLT 0.7 U GF, REC (UG/L)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L)	PRONAMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PROMETON, WATER, DISS, REC (UG/L)	PROPCHLOR, WATER, DISS, REC (UG/L)	PROPANIL WATER FLTRD 0.7 U GF, REC (UG/L)	PROPARGITE WATER FLTRD 0.7 U GF, REC (UG/L)
OCT											
24...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
FEB											
22...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	E0.004	<0.004	<0.013
MAR											
21...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
APR											
02...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
17...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
MAY											
02...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
30...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
JUN											
28...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
JUL											
17...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
AUG											
14...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
25...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
SEP											
12...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
15...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013

DATE	SIMAZINE, WATER, DISS, REC (UG/L)	THIOBENCARB WATER FLTRD 0.7 U GF, REC (UG/L)	TEBUTHIURON WATER FLTRD 0.7 U GF, REC (UG/L)	TERBACIL WATER FLTRD 0.7 U GF, REC (UG/L)	TERBUFOS WATER FLTRD 0.7 U GF, REC (UG/L)	TRIALLATE WATER FLTRD 0.7 U GF, REC (UG/L)	TRIFLURALIN WAT FLT 0.7 U GF, REC (UG/L)	DIAZINON D10 SRG WAT FLT 0.7 U GF, REC PERCENT	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT	TERBUTHYLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT	SAMPLE VOLUME SCHEDULE 2001 (ML)
OCT											
24...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	106	100	98.6	952
FEB											
22...	E0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	108	100	105	934
MAR											
21...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	86.2	82.0	98.5	925
APR											
02...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	106	100	114	943
17...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	100	97.0	113	925
MAY											
02...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	86.9	87.1	106	--
30...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	93.3	109	110	952
JUN											
28...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	105	76.5	107	925
JUL											
17...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	64.3	103	112	961
AUG											
14...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	89.8	97.8	121	934
25...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	101	90.2	114	909
SEP											
12...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	82.8	101	1	961
15...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	88.0	94.4		952

08449400 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TX
(Hydrologic benchmark station)

LOCATION.--Lat 29°40'35", long 101°00'00", Val Verde County, Hydrologic Unit 13040302, on left bank 10 mi east of Comstock, and 25.5 mi upstream from mouth.

DRAINAGE AREA.--3,961 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1967 to current year. Sediment analyses: January 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1978 to September 1985 .
WATER TEMPERATURE: February 1978 to September 1985 .

INSTRUMENTATION.--From August 1980 to September 1985, specific conductance and water temperature were continuously recorded at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 763 microsiemens Oct. 18, 1984; minimum, 105 microsiemens Oct. 20, 1983.
WATER TEMPERATURE: Maximum recorded, 38.0°C May 6, 1984; minimum, 0.0 °C Feb. 1, 2, 1985.

REMARKS.--Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1996 are given in International Boundary and Water Commission Water Bulletins Nos. 65 and 66.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
OCT 26...	1030	276	404	8.2	20.5	0.40	8.9	104	K10	110	190	16
JUL 31...	1035	208	369	8.0	26.0	0.30	8.0	104	10	50	170	9

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT 26...	52	14	8.7	0.3	1.4	0	210	172	7.1	15	0.30	14
JUL 31...	44	14	8.5	0.3	1.3	0	194	159	8.0	16	0.40	16

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
OCT 26...	237	222	1.28	1.28	0.020	1.30	1.30	<0.015	1.5	0.20	0.20
JUL 31...	206	205	0.120	--	<0.010	0.120	0.120	0.040	0.42	0.26	0.30

DATE	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	BARIUM, DIS-SOLVED (UG/L AS BA)	COBALT, DIS-SOLVED (UG/L AS CO)	IRON, DIS-SOLVED (UG/L AS FE)	LITHIUM DIS-SOLVED (UG/L AS LI)
OCT 26...	<0.010	<0.010	<0.010	14	10	79	<10	120	<3.0	<3.0	6
JUL 31...	<0.010	<0.010	<0.010	31	17	94	<5.0	110	<3.0	<3.0	6

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)	URANIUM NATURAL 2 SIGMA WATER, DISS, (UG/L)	RA-226 2 SIGMA WATER, DISS, (PCI/L)
OCT 26...	<1.0	10	<1.0	<1	<1.0	530	8	0.20	0.85	0.0	0.040
JUL 31...	<1.0	<10	<1.0	<1	<1.0	470	9	--	--	--	--

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°25'30", long 101°27'00", Val Verde County, Hydrologic Unit 13080001, 2.2 mi downstream from Amistad Dam and 10 mi northwest of Del Rio.

DRAINAGE AREA.--123,143 mi².

PERIOD OF RECORD.--Inorganic chemical analyses: July 1968 to current year. Organic chemical and sediment analyses: October 1995 to current year.

REMARKS.--The flow is controlled largely by releases from Amistad Reservoir. Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1996 are given in International Boundary and Water Commission Water Bulletins Nos. 65 and 66.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT												
18...	0640	1310	1280	8.2	22.0	--	--	--	270	150	67	24
NOV												
22...	0740	1510	1290	8.1	22.0	--	--	--	290	170	73	25
DEC												
20...	0740	1240	1250	8.1	15.5	--	--	--	280	170	72	25
JAN												
17...	0745	1570	1300	7.8	11.0	--	--	--	280	160	73	23
FEB												
14...	0745	1560	1330	8.0	9.0	--	--	--	290	170	75	25
MAR												
20...	0905	1060	1320	7.3	--	--	--	--	280	180	70	25
APR												
17...	0743	1080	1330	7.5	13.0	--	--	--	290	170	76	25
MAY												
13...	0645	2520	1380	7.7	16.0	--	--	--	300	170	76	26
28...	1445	3520	1310	7.9	17.5	0.10	8.1	89	290	160	77	24
JUN												
19...	0630	1690	1370	7.8	--	--	--	--	300	170	77	26
26...	1320	4630	1360	7.8	19.5	0.30	4.6	52	310	180	79	26
JUL												
16...	1330	1660	1370	7.8	22.0	0.50	5.8	69	320	190	81	27
17...	0638	438	1360	7.7	--	--	--	--	290	160	74	25
AUG												
13...	1345	1730	1360	7.7	24.0	0.20	5.8	72	280	150	71	25
21...	0700	424	1350	7.5	24.0	--	--	--	290	170	74	26
SEP												
10...	1325	1570	1320	7.8	25.0	0.50	5.5	69	280	170	73	24
18...	0845	216	1300	7.7	25.5	--	--	--	290	170	73	26

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT												
18...	150	4	5.5	--	--	--	110	250	170	1.2	16	--
NOV												
22...	160	4	6.2	--	--	--	120	260	170	1.0	17	--
DEC												
20...	150	4	5.7	--	--	--	120	240	160	1.0	17	--
JAN												
17...	150	4	5.8	--	--	--	120	260	170	1.0	15	--
FEB												
14...	160	4	5.3	--	--	--	120	260	190	1.0	16	--
MAR												
20...	150	4	5.9	--	--	--	98	260	180	1.0	14	--
APR												
17...	150	4	5.5	--	--	--	120	250	190	0.90	15	--
MAY												
13...	160	4	5.4	--	--	--	120	260	190	0.90	15	--
28...	150	4	5.5	0	156	128	--	240	170	0.90	15	802
JUN												
19...	160	4	5.4	--	--	--	130	260	190	0.90	15	--
26...	170	4	5.7	0	154	126	--	260	200	0.90	15	862
JUL												
16...	150	4	5.3	0	150	124	--	250	200	1.0	16	838
17...	150	4	5.6	--	--	--	120	250	190	0.90	15	--
AUG												
13...	150	4	5.4	0	155	127	--	250	190	0.90	15	838
21...	160	4	5.2	--	--	--	120	250	190	0.90	16	--
SEP												
10...	140	4	5.2	E0	E140	113	--	250	180	0.90	16	798
18...	150	4	5.3	--	--	--	120	240	170	0.90	16	--

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
OCT												
18...	751	--	--	--	--	--	--	--	--	--	--	--
NOV												
22...	781	--	--	--	--	--	--	--	--	--	--	--
DEC												
20...	740	--	--	--	--	--	--	--	--	--	--	--
JAN												
17...	767	--	--	--	--	--	--	--	--	--	--	--
FEB												
14...	805	--	--	--	--	--	--	--	--	--	--	--
MAR												
20...	765	--	--	--	--	--	--	--	--	--	--	--
APR												
17...	783	--	--	--	--	--	--	--	--	--	--	--
MAY												
13...	807	--	--	--	--	--	--	--	--	--	--	--
28...	763	0.380	0.380	0.010	0.390	0.390	0.020	0.69	0.28	0.20	0.30	0.020
JUN												
19...	811	--	--	--	--	--	--	--	--	--	--	--
26...	836	0.360	--	<0.010	0.360	0.360	0.020	--	--	<0.20	<0.20	0.080
JUL												
16...	808	0.330	0.330	0.010	0.340	0.340	0.040	--	--	<0.20	<0.20	0.020
17...	784	--	--	--	--	--	--	--	--	--	--	--
AUG												
13...	787	0.260	0.260	0.010	0.270	0.270	0.030	--	--	<0.20	<0.20	<0.010
21...	795	--	--	--	--	--	--	--	--	--	--	--
SEP												
10...	760	0.150	0.150	0.010	0.160	0.160	0.040	0.36	0.16	<0.20	0.20	<0.010
18...	750	--	--	--	--	--	--	--	--	--	--	--

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ANTI-MONY, DIS-SOLVED (UG/L AS SB)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)
OCT												
18...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
22...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
20...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
17...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
14...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
20...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
13...	--	--	--	--	--	--	--	--	--	--	--	--
28...	<0.010	0.001	2.2	0.20	9	86	80	3.0	<1.0	3	134	<1.0
JUN												
19...	--	--	--	--	--	--	--	--	--	--	--	--
26...	<0.010	0.001	4.4	0.10	17	213	93	3.0	<1.0	2	139	<1.0
JUL												
16...	<0.010	<0.001	2.0	0.20	17	76	92	2.0	<1.0	3	132	<1.0
17...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
13...	0.020	<0.001	1.9	0.20	6	28	85	<1.0	<1.0	3	127	<1.0
21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
10...	<0.010	<0.001	2.0	0.30	3	13	100	1.0	<1.0	5	130	<1.0
18...	--	--	--	--	--	--	--	--	--	--	--	--

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	BORON, DIS-SOLVED (UG/L AS B)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)
OCT												
18...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
22...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
20...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
17...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
14...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
20...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
13...	--	--	--	--	--	--	--	--	--	--	--	--
28...	190	<1.0	1.0	<1.0	2.0	<3.0	<1.0	60	3.0	8.0	3.0	<1
JUN												
19...	--	--	--	--	--	--	--	--	--	--	--	--
26...	207	<1.0	1.0	<1.0	2.0	<3.0	<1.0	62	20	7.0	2.0	<1
JUL												
16...	206	<1.0	1.0	<1.0	1.0	<3.0	<1.0	58	32	8.0	2.0	<1
17...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
13...	197	<1.0	2.0	<1.0	1.0	<3.0	<1.0	59	96	7.0	3.0	<1
21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
10...	197	<1.0	<1.0	<1.0	1.0	<3.0	<1.0	55	140	7.0	2.0	<1
18...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)	ACETO-CHLOR, WATER FLTRD REC (UG/L)	ALA-CHLOR, WATER, DISS, REC, (UG/L)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L)	ATRA-ZINE, WATER, DISS, REC (UG/L)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L)	BUTYL-ATE, WATER, DISS, REC (UG/L)
OCT												
18...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
22...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
20...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
17...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
14...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
20...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
13...	--	--	--	--	--	--	--	--	--	--	--	--
28...	<1.0	1400	8	3.0	4.0	<0.002	<0.002	<0.002	E0.004	<0.001	<0.002	<0.002
JUN												
19...	--	--	--	--	--	--	--	--	--	--	--	--
26...	<1.0	1500	<6	4.0	4.0	<0.002	<0.002	<0.002	E0.003	<0.001	<0.002	<0.002
JUL												
16...	<1.0	1600	<6	5.0	4.0	<0.002	<0.002	<0.002	E0.004	<0.001	<0.002	<0.002
17...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
13...	<1.0	1400	<6	2.0	4.0	<0.002	<0.002	<0.002	E0.002	<0.001	<0.002	<0.002
21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
10...	<1.0	1400	<6	6.0	4.0	<0.002	<0.002	<0.002	0.004	<0.001	<0.002	<0.002
18...	--	--	--	--	--	--	--	--	--	--	--	--

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	CAR-WATER FLTRD 0.7 U GF, REC (UG/L)	CARBO-WATER FLTRD 0.7 U GF, REC (UG/L)	CHLOR-PYRIFOS DIS-SOLVED (UG/L)	ZINE, WATER, DISS, REC (UG/L)	WATER FLTRD 0.7 U GF, REC (UG/L)	P,P' DDE DISSOLV (UG/L)	DI-AZINON, DIS-SOLVED (UG/L)	DI-ELDRIN DIS-SOLVED (UG/L)	2,6-DI-ANILINE WAT FLT 0.7 U GF, REC (UG/L)	DISUL-WATER FLTRD 0.7 U GF, REC (UG/L)	WATER FLTRD 0.7 U GF, REC (UG/L)
OCT											
18...	--	--	--	--	--	--	--	--	--	--	--
NOV											
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
17...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14...	--	--	--	--	--	--	--	--	--	--	--
MAR											
20...	--	--	--	--	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
28...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--
26...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
JUL											
16...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	<0.002	<0.001	<0.003	<0.017	<0.002
18...	--	--	--	--	--	--	--	--	--	--	--

DATE	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L)	FONOFOS WATER DISS REC (UG/L)	ALPHA BHC DIS-SOLVED (UG/L)	LINDANE DIS-SOLVED (UG/L)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L)	MALA-THION, DIS-SOLVED (UG/L)	METO-LACHLOR WATER DISSOLV (UG/L)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)
OCT											
18...	--	--	--	--	--	--	--	--	--	--	--
NOV											
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
17...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14...	--	--	--	--	--	--	--	--	--	--	--
MAR											
20...	--	--	--	--	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
28...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--
26...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
JUL											
16...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	<0.004	<0.003	<0.003	<0.002	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003
18...	--	--	--	--	--	--	--	--	--	--	--

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	PARA-THION, DIS-SOLVED (UG/L)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PRO-METON, WATER, DISS, REC (UG/L)	PROP-CHLOR, WATER, DISS, REC (UG/L)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L)
OCT											
18...	--	--	--	--	--	--	--	--	--	--	--
NOV											
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
17...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14...	--	--	--	--	--	--	--	--	--	--	--
MAR											
20...	--	--	--	--	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
28...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	E0.005	<0.007	<0.004	<0.013
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--
26...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	E0.006	<0.007	<0.004	<0.013
JUL											
16...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	E0.008	<0.007	<0.004	<0.013
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	<0.004	<0.006	<0.004	<0.004	<0.005	<0.002	<0.003	<0.018	<0.007	<0.004	<0.013
18...	--	--	--	--	--	--	--	--	--	--	--

DATE	SI-MAZINE, WATER, DISS, REC (UG/L)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT	SAMPLE VOLUME SCHED-ULE 2001 (ML)
OCT											
18...	--	--	--	--	--	--	--	--	--	--	--
NOV											
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
17...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14...	--	--	--	--	--	--	--	--	--	--	--
MAR											
20...	--	--	--	--	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
28...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	92.2	105	104	970
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--
26...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	103	85.6	94.3	917
JUL											
16...	E0.004	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	76.0	90.0	102	917
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	85.3	91.2	117	909
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	<0.005	<0.002	<0.010	<0.007	<0.013	<0.001	<0.002	72.7	92.8	103	943
18...	--	--	--	--	--	--	--	--	--	--	--

08459000 RIO GRANDE AT LAREDO, TX

LOCATION.--Lat 27°29'45", long 99°29'30", Webb County, Hydrologic Unit 13080002, at gaging station 1.1 mi downstream from the highway bridge between Laredo and Nuevo Laredo, Tamaulipas, Mex., and 891.0 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--132,578 mi², United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: April 1952, July 1955 to September 1986, October 1989 to current year. Chemical, biochemical, and sediment analyses: January 1973 to September 1986. Pesticide analyses: March to May 1979. Sediment analyses: May 1973 to September 1986.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1954 to September 1986.
WATER TEMPERATURE: February 1973 to August 1976.

REMARKS.--Records of discharge for water year 1996 are given in International Boundary and Water Commission Water Bulletins Nos. 65 and 66.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,690 microsiemens June 1, 1963; minimum daily, 214 microsiemens Sept. 26, 1964.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 17...	1201	1490	1290	8.0	26.0	270	160	69	24
NOV 21...	1015	1720	1130	8.1	20.0	270	160	72	23
DEC 12...	1030	1520	1290	7.9	17.0	300	180	79	24
JAN 17...	1020	1680	1250	7.6	12.0	280	170	71	24
FEB 21...	1055	1430	1340	7.8	28.0	310	180	80	26
MAR 19...	1015	1070	1370	7.4	--	300	190	78	26
APR 16...	0915	953	1370	7.6	17.0	310	180	83	26
MAY 14...	1105	3090	1360	7.5	26.5	290	160	76	25
JUN 26...	0836	1800	1390	7.7	29.0	290	180	73	27
JUL 16...	0955	999	993	7.7	33.5	220	120	59	18
AUG 21...	1040	1090	1410	7.6	27.0	300	210	76	27
SEP 18...	0920	3000	1180	7.8	29.0	280	160	74	23

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 17...	150	4	5.2	120	250	160	1.1	13	742
NOV 21...	130	3	5.3	120	220	140	0.80	14	674
DEC 12...	140	4	5.4	120	240	150	0.90	9.8	718
JAN 17...	140	4	5.2	100	260	160	0.90	5.3	729
FEB 21...	150	4	5.6	130	270	180	0.90	8.9	798
MAR 19...	150	4	5.3	120	270	180	0.90	7.7	787
APR 16...	150	4	5.7	130	270	190	0.90	13	817
MAY 14...	150	4	5.4	130	260	180	0.90	16	790
JUN 26...	160	4	5.5	120	270	200	0.90	13	820
JUL 16...	110	3	5.6	100	180	130	0.60	12	576
AUG 21...	160	4	5.9	92	270	200	0.90	16	811
SEP 18...	130	3	6.5	120	210	150	0.80	15	682

08461300 RIO GRANDE BELOW FALCON DAM, TX
(National Stream-Quality Accounting Network)

LOCATION.--Lat 26°33'25", long 99°10'05", Starr County, Hydrologic Unit 13090001, U.S. Tailrace at Falcon Dam.

DRAINAGE AREA.--159,270 mi², United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: July 1955 to current year. Biochemical analyses: October 1995 to September 1996 Pesticide analyses: October 1995 to September 1996.

REMARKS.--Records of specific conductance and discharge for water year 1996 are given in International Boundary and Water Commission Water Bulletins Nos. 65 and 66.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT												
16...	1130	1180	1140	7.9	22.0	--	--	--	230	140	58	20
19...	1030	1780	1110	8.2	24.5	35	1.5	18	220	130	55	19
DEC												
18...	1330	1360	1080	7.8	18.0	--	--	--	240	140	65	19
JAN												
15...	1300	653	1100	7.8	13.5	--	--	--	240	140	66	19
MAR												
19...	1400	2770	1170	7.3	15.5	--	--	--	270	150	71	22
21...	1010	4480	1190	8.2	17.5	0.70	7.2	75	270	150	70	22
MAY												
15...	1100	1890	1300	7.5	24.5	--	--	--	280	160	71	24
JUN												
13...	1150	3570	1290	8.1	27.0	5.6	6.4	81	260	170	68	22
JUL												
01...	1345	1420	1240	7.9	28.5	1.0	5.9	76	250	160	61	23
18...	1305	2380	1300	7.4	39.5	--	--	--	270	170	66	25
31...	0925	6140	1370	7.9	28.0	3.2	5.0	64	260	160	66	23
AUG												
21...	1345	1190	1270	7.4	28.5	--	--	--	260	170	68	23
SEP												
19...	0815	635	115	7.7	28.0	--	--	--	230	140	58	21
26...	1150	908	1110	7.7	28.5	2.7	6.8	88	230	140	59	20

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT											
16...	130	4	5.9	--	--	--	92	230	140	1.0	12
19...	120	4	5.8	0	110	90	89	230	140	0.70	11
DEC											
18...	120	3	6.1	--	--	--	98	220	140	0.80	11
JAN											
15...	120	3	6.1	--	--	--	100	230	140	0.80	10
MAR											
19...	130	3	6.3	--	--	--	120	240	140	0.80	9.8
21...	130	3	5.9	0	140	114	120	240	150	0.90	9.5
MAY											
15...	150	4	6.0	--	--	--	120	260	170	0.80	10
JUN											
13...	140	4	6.4	0	115	94	93	260	170	0.90	9.2
JUL											
01...	140	4	6.4	0	103	85	87	250	170	0.80	9.6
18...	150	4	6.1	--	--	--	97	260	180	0.80	11
31...	140	4	6.8	0	118	97	97	250	180	0.80	10
AUG											
21...	140	4	6.6	--	--	--	98	250	180	0.80	10
SEP											
19...	130	4	6.1	--	--	--	90	220	150	0.70	9.9
26...	130	4	6.1	0	113	93	92	220	150	0.70	10

08461300 RIO GRANDE BELOW FALCON DAM, TX--Continued
(National Stream-Quality Accounting Network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
OCT											
16...	--	652	--	--	--	--	--	--	--	--	--
19...	664	637	0.060	0.060	0.020	0.080	0.080	0.080	0.78	0.62	0.32
DEC											
18...	--	641	--	--	--	--	--	--	--	--	--
JAN											
15...	--	655	--	--	--	--	--	--	--	--	--
MAR											
19...	--	689	--	--	--	--	--	--	--	--	--
21...	734	699	--	--	0.010	--	<0.050	0.090	0.60	0.51	0.41
MAY											
15...	--	761	--	--	--	--	--	--	--	--	--
JUN											
13...	770	735	0.060	0.060	0.020	0.080	0.080	0.060	0.88	0.74	0.24
JUL											
01...	764	714	0.060	0.060	0.020	0.080	0.080	0.170	0.68	0.43	0.33
18...	--	757	--	--	--	--	--	--	--	--	--
31...	758	737	0.110	0.110	0.030	0.140	0.140	0.180	0.94	0.62	0.32
AUG											
21...	--	737	--	--	--	--	--	--	--	--	--
SEP											
19...	--	650	--	--	--	--	--	--	--	--	--
26...	666	654	0.090	0.090	0.020	0.110	0.110	0.180	0.81	0.52	0.32

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT											
16...	--	--	--	--	--	--	--	--	--	--	--
19...	0.40	0.70	0.070	0.030	<0.010	--	3.5	0.70	90	433	94
DEC											
18...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	--	--	--	--	--
MAR											
19...	--	--	--	--	--	--	--	--	--	--	--
21...	0.50	0.60	0.040	<0.010	0.002	0.01	5.9	1.0	17	206	97
MAY											
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
13...	0.30	0.80	0.080	0.020	0.003	0.01	3.7	0.30	22	212	94
JUL											
01...	0.50	0.60	0.030	0.030	0.012	0.04	4.0	0.70	7	27	100
18...	--	--	--	--	--	--	--	--	--	--	--
31...	0.50	0.80	0.070	<0.010	0.011	0.03	3.6	1.7	20	332	20
AUG											
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
19...	--	--	--	--	--	--	--	--	--	--	--
26...	0.50	0.70	0.060	0.010	0.009	0.03	4.1	0.80	16	39	97

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ANTI-MONY, DIS-SOLVED (UG/L AS SB)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	BORON, DIS-SOLVED (UG/L AS B)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT											
16...	--	--	--	--	--	--	--	--	--	--	--
19...	<10	--	4	100	<0.50	--	<1.0	<5.0	<3.0	2.0	7.0
DEC											
18...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	--	--	--	--	--
MAR											
19...	--	--	--	--	--	--	--	--	--	--	--
21...	1.0	<1.0	2	111	<1.0	240	<1.0	2.0	<1.0	2.0	4.0
MAY											
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
13...	1.0	<1.0	3	125	<1.0	219	<1.0	<1.0	<1.0	3.0	<3.0
JUL											
01...	1.0	<1.0	3	131	<1.0	232	<1.0	<1.0	<1.0	2.0	<3.0
18...	--	--	--	--	--	--	--	--	--	--	--
31...	<1.0	<1.0	3	145	<1.0	221	<1.0	1.0	<1.0	<1.0	<3.0
AUG											
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
19...	--	--	--	--	--	--	--	--	--	--	--
26...	2.0	<1.0	3	132	<1.0	219	<1.0	<1.0	<1.0	1.0	<3.0

08461300 RIO GRANDE BELOW FALCON DAM, TX--Continued
(National Stream-Quality Accounting Network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
OCT											
16...	--	--	--	--	--	--	--	--	--	--	--
19...	<1.0	51	2.0	<10	<1.0	<1	<1.0	1100	9	13	--
DEC											
18...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	--	--	--	--	--
MAR											
19...	--	--	--	--	--	--	--	--	--	--	--
21...	<1.0	51	2.0	6.0	2.0	<1	<1.0	1300	<6	7.0	3.0
MAY											
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
13...	<1.0	50	3.0	8.0	2.0	1	<1.0	1300	<6	4.0	4.0
JUL											
01...	<1.0	52	11	8.0	2.0	<1	<1.0	1400	8	3.0	3.0
18...	--	--	--	--	--	--	--	--	--	--	--
31...	<1.0	53	7.0	8.0	<1.0	<1	<1.0	1300	9	2.0	4.0
AUG											
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
19...	--	--	--	--	--	--	--	--	--	--	--
26...	<1.0	48	14	7.0	2.0	<1	<1.0	1200	<6	3.0	3.0

08464700 RIO GRANDE AT FORT RINGGOLD, RIO GRANDE CITY, TX

LOCATION.--Lat 26°22'05", long 98°48'20", Starr County, Hydrologic Unit 13090001, at gaging station about 1 mi downstream from Rio Grande City, 3.9 mi downstream from mouth of Rio San Juan, and 1,014.3 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--174,362 mi², United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: January 1959 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1996 are given in International Boundary and Water Commission Water Bulletins Nos. 65 and 66.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT									
19...	1340	1370	1250	7.9	27.0	250	150	66	21
NOV									
13...	1315	671	1200	8.0	19.0	250	160	64	22
DEC									
18...	1245	1770	1160	7.9	11.0	250	150	68	20
JAN									
19...	0940	1780	1160	8.2	5.0	260	150	70	21
FEB									
23...	1200	2260	1190	8.0	31.0	260	150	71	21
MAR									
22...	1055	3040	1250	7.2	19.0	290	170	77	23
APR									
16...	0945	6670	1300	7.3	18.0	290	170	75	24
MAY									
16...	1015	3000	1350	7.3	24.0	290	170	76	25
JUN									
20...	1005	2400	1280	7.5	30.0	270	160	70	23
JUL									
18...	1015	2220	1310	7.5	36.0	260	170	64	24
AUG									
22...	0945	1360	1260	7.4	22.5	250	160	67	21
SEP									
19...	0945	565	1310	7.9	30.0	250	160	62	24

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT									
19...	150	4	7.1	100	240	160	1.0	12	720
NOV									
13...	150	4	33	95	240	160	0.80	9.5	736
DEC									
18...	130	4	6.6	100	230	150	0.80	8.5	676
JAN									
19...	130	3	6.1	120	230	150	0.80	3.0	680
FEB									
23...	140	4	6.3	120	240	150	0.80	10	708
MAR									
22...	140	4	6.5	120	250	160	0.80	7.9	734
APR									
16...	150	4	6.4	120	270	160	0.80	11	770
MAY									
16...	160	4	6.9	120	270	180	0.90	11	802
JUN									
20...	150	4	7.0	100	260	170	0.80	10	754
JUL									
18...	150	4	6.3	89	260	180	0.80	12	750
AUG									
22...	140	4	7.3	93	240	180	0.70	10	722
SEP									
19...	170	5	6.5	90	250	190	0.80	9.8	767

08466300 RIO GRANDE NEAR LOS EBANOS, TX

LOCATION.--Lat 26°14'15", long 98°33'49", Hidalgo County, Hydrologic Unit 13090001, on Farm Road 886 at U.S. Border Port of Entry near Los Ebanos and at mile 204.37.

PERIOD OF RECORD.--Chemical analyses: June 1977 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1996 are given in International Boundary and Water Commission Water Bulletins Nos. 65 and 66.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT									
18...	1030	1150	1290	8.0	25.0	250	150	64	22
DEC									
14...	1040	297	1650	8.1	20.0	370	230	98	30
JAN									
17...	1300	188	1540	7.9	21.0	330	210	88	27
MAR									
15...	1030	1390	1230	7.1	--	280	170	76	23
MAY									
17...	0910	2540	1350	7.3	27.5	280	170	71	25
JUL									
19...	1200	1800	1360	7.7	--	270	180	67	25
SEP									
17...	1035	147	1670	7.8	31.0	330	230	80	31

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT									
18...	160	4	6.2	100	260	170	1.0	12	757
DEC									
14...	200	5	6.6	140	290	240	0.80	12	962
JAN									
17...	190	5	6.3	120	300	230	0.80	7.3	922
MAR									
15...	140	4	6.4	120	250	150	0.80	9.3	724
MAY									
17...	160	4	6.4	110	280	180	0.80	11	801
JUL									
19...	160	4	6.2	95	270	190	0.90	13	789
SEP									
17...	210	5	7.2	97	320	260	0.80	11	978

08469200 RIO GRANDE BELOW ANZALDUAS DAM, TX

LOCATION.--Lat 26°08'00", long 98°20'05", Hidalgo County, Hydrologic Unit 13090002, at gaging station 0.5 mi downstream from Anzalduas Dam, 12.2 mi from Hidalgo, and 1,077.1 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--176,112 mi², United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: March 1959 to current year. Pesticide analyses: October 1967 to July 1972.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1977 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1996 are given in International Boundary and Water Commission Water Bulletins Nos. 65 and 66. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations for this station may be obtained from the Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,310 microsiemens Feb. 12, 1984; minimum daily, 363 microsiemens Nov. 26 and 29 1995.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,260 microsiemens Jan. 15; minimum daily, 363 microsiemens Nov. 26 and 29

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT									
20...	0930	840	1230	8.0	--	250	150	62	22
DEC									
27...	1320	230	1170	7.7	14.0	250	150	69	20
MAR									
20...	0910	2070	1250	7.1	--	280	170	76	23
MAY									
22...	0830	2970	1370	7.7	25.0	290	180	73	25
AUG									
23...	0840	757	1410	7.6	28.0	290	190	73	26
SEP									
17...	0915	219	1210	8.0	30.0	250	130	72	18

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT									
20...	160	4	6.2	97	250	160	1.0	12	731
DEC									
27...	130	4	6.0	100	240	160	0.80	8.5	697
MAR									
20...	140	4	6.3	120	250	160	0.80	10	737
MAY									
22...	160	4	6.5	100	280	180	0.90	12	800
AUG									
23...	160	4	6.9	95	280	210	0.80	12	826
SEP									
17...	150	4	6.3	120	200	170	0.40	13	702

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.	1995	19176	1210	742	38400	1		260	13200	270
NOV.	1995	13335	1190	730	26300		[illegible]	250	8990	260
DEC.	1995	12198	1300	800	26300	16[illegible]	5770	270	9020	290
JAN.	1996	20486	1490	913	50500	210	11400	310	17200	320
FEB.	1996	40223	1280	788	85600	170	18200	270	29400	290
MAR.	1996	46659	1270	781	98500	170	20900	270	33800	290
APR.	1996	67860	1270	780	143000	170	30400	270	49100	290
MAY	1996	85080	1380	846	194000	180	42300	290	66600	310
JUNE	1996	61890	1360	833	139000	180	30100	290	47700	300
JULY	1996	40353	1380	847	92300	180	20100	290	31600	310
AUG.	1996	30834	1350	829	69000	180	14900	280	23700	300
SEPT	1996	10035	1320	811	22000	180	4800	280	7530	290
TOTAL		448129	**	**	985000	**	213000	**	338000	**
WTD.AVG.		1224	1330	814	**	180	**	280	**	300

08469200 RIO GRANDE BELOW ANZALDUAS DAM, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	494	1140	391	1160	1190	1210	1250	1310	1380	1350	1350	1460
2	515	1130	427	1190	1200	1210	1270	1320	1380	1380	1360	1630
3	523	1140	464	1200	1240	1260	1270	1390	1360	1380	1350	1640
4	568	1140	511	1240	1270	1350	1340	1340	1370	1400	1350	1290
5	582	1140	617	1280	1230	1350	1300	1340	1370	1430	1340	1050
6	722	1160	987	1350	1270	1290	1330	1380	1390	1480	1330	902
7	943	1200	1290	1460	1250	1250	1330	1400	1370	1490	1320	834
8	1100	1170	1500	1600	1230	1230	1300	1300	1400	1540	1350	781
9	1250	1190	1590	1790	1220	1230	1280	1350	1380	1550	1320	815
10	1610	1260	1640	2140	1230	1240	1290	1380	1390	1530	1340	855
11	1690	1340	1560	2230	1300	1270	1240	1370	1420	1490	1360	963
12	1160	1370	1530	2200	1320	1390	1260	1380	1370	1450	1350	1110
13	1390	1430	1550	2170	1330	1340	1230	1380	1340	1380	1340	1360
14	1130	1860	1410	2250	1350	1380	1250	1380	1360	1410	1330	1460
15	1220	2100	1420	2260	1320	1360	1300	1330	1340	1350	1270	1520
16	1220	1950	1450	2150	1360	1330	1270	1380	1350	1180	1340	1400
17	1200	1930	1510	1840	1390	1240	1260	1410	1330	1370	1620	1260
18	1210	1680	1480	1880	1340	1270	1250	1410	1360	1320	1400	1250
19	1210	1450	1450	1710	1310	1290	1260	1530	1320	1380	1340	1360
20	1210	448	1750	1720	1270	1260	1250	1430	1310	1360	1390	1600
21	1220	422	1770	1610	1290	1260	1250	1400	1300	1350	1370	1670
22	1260	387	1490	1610	1350	1260	1260	1400	1310	1370	1370	1720
23	1420	407	1420	1390	1350	1250	1260	1360	1350	1370	1450	1780
24	1370	374	1350	1250	1280	1250	1270	1380	1300	1360	1340	1710
25	1280	373	1220	1230	1280	1240	1270	1390	1300	1370	1370	1670
26	1370	363	1200	1200	1220	1240	1280	1370	1310	1380	1360	1580
27	1270	374	1180	1260	1230	1240	1260	1370	1340	1380	1360	1360
28	1220	434	1170	1270	1210	1250	1220	1380	1400	1370	1340	1240
29	1190	363	1170	1260	1200	1300	1310	1400	1310	1360	1310	943
30	1170	378	1170	1250	---	1260	1330	1380	1310	1380	1310	719
31	1150	---	1170	1200	---	1250	---	1380	---	1370	1340	---
TOTAL	34867	31103	38837	49350	37030	39550	38240	42720	40520	43280	42070	38932
MEAN	1120	1040	1250	1590	1280	1280	1270	1380	1350	1400	1360	1300
MAX	1690	2100	1770	2260	1390	1390	1340	1530	1420	1550	1620	1780
MIN	494	363	391	1160	1190	1210	1220	1300	1300	1180	1270	719

CAL YR 1995 TOTAL 464327 MEAN 1280 MAX 2100 MIN 363
WTR YR 1996 TOTAL 476499 MEAN 1300 MAX 2260 MIN 363

08470400 ARROYO COLORADO AT HARLINGEN, TX
(National Stream-Quality Accounting Network)

LOCATION.--Lat 26°10'24", long 97°42'01", Cameron County, Hydrologic Unit 13090002, on downstream side of northbound service road on U.S. Highways 83 & 77, about 18 mi from point of main floodway that divides into North Floodway and Arroyo Colorado.

PERIOD OF RECORD.--Chemical and biochemical analyses: November 1986 to current year. Pesticide analyses: October 1995 to September 1996.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)
MAR											
20...	1030	--	4090	8.0	19.0	96	8.9	95	810	570	190
APR											
18...	0940	E209	4190	8.1	23.0	100	7.6	89	860	670	210
MAY											
01...	0940	E250	4120	8.0	22.0	98	7.1	81	810	620	200
29...	1110	E210	4060	8.2	29.0	110	7.9	104	830	610	200
JUN											
12...	0940	--	4140	8.0	27.5	130	7.2	92	880	660	210
26...	0915	--	1170	7.6	26.5	330	4.7	58	220	140	59
JUL											
24...	1150	--	4720	8.2	28.5	59	10.6	137	930	720	210
AUG											
21...	1010	--	4580	7.9	27.0	87	7.4	93	880	670	210
SEP											
25...	0930	--	5030	7.9	28.0	89	7.1	--	1000	770	240

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
MAR											
20...	80	580	9	11	0	293	240	240	760	820	1.0
APR											
18...	81	620	9	11	0	240	197	200	770	820	1.0
MAY											
01...	75	590	9	9.7	0	240	196	200	740	840	1.0
29...	78	590	9	12	0	260	213	210	760	820	1.0
JUN											
12...	86	620	9	11	0	273	224	230	760	840	1.0
26...	17	130	4	8.6	0	97	80	79	170	180	0.50
JUL											
24...	96	700	10	11	9	236	208	200	890	950	1.0
AUG											
21...	85	610	9	12	0	255	209	210	820	880	1.0
SEP											
25...	100	740	10	11	0	300	246	240	890	1100	0.90

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
MAR											
20...	21	2760	2630	3.35	3.35	0.150	3.50	3.50	0.030	4.4	0.87
APR											
18...	21	2790	2680	3.99	3.99	0.110	4.10	4.10	0.020	5.8	1.7
MAY											
01...	22	2730	2620	3.74	3.74	0.160	3.90	3.90	<0.015	5.8	1.9
29...	22	2710	2630	2.79	2.79	0.110	2.90	2.90	0.030	4.2	1.3
JUN											
12...	24	2780	2710	3.19	3.19	0.110	3.30	3.30	0.050	4.0	0.65
26...	10	656	642	3.57	3.57	0.230	3.80	3.80	0.080	5.9	2.0
JUL											
24...	20	3220	3020	1.93	1.93	0.070	2.00	2.00	0.070	4.4	2.3
AUG											
21...	22	2950	2790	3.41	3.41	0.090	3.50	3.50	0.020	4.7	1.2
SEP											
25...	27	3340	3280	3.61	3.61	0.090	3.70	3.70	0.020	4.8	1.1

08470400 ARROYO COLORADO AT HARLINGEN, TX--Continued
(National Stream-Quality Accounting Network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR											
20...	0.67	0.70	0.90	0.330	0.290	0.240	0.74	4.9	4.2	207	99
APR											
18...	0.48	0.50	1.7	0.560	0.250	0.190	0.58	5.1	5.1	250	98
MAY											
01...	--	0.60	1.9	0.640	0.200	0.200	0.61	6.1	4.7	252	98
29...	0.57	0.60	1.3	0.340	0.150	0.160	0.49	5.0	>5.0	134	97
JUN											
12...	0.35	0.40	0.70	0.360	0.280	0.290	0.89	4.5	6.3	238	99
26...	0.52	0.60	2.1	0.940	0.180	0.180	0.55	8.0	4.3	468	94
JUL											
24...	0.43	0.50	2.4	0.430	0.050	0.070	0.21	4.8	4.9	175	96
AUG											
21...	0.38	0.40	1.2	0.380	0.120	0.150	0.46	19	3.9	205	99
SEP											
25...	0.38	0.40	1.1	0.370	0.190	0.190	0.58	4.3	4.2	200	99

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ANTIMONY, DISSOLVED (UG/L AS SB)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	BORON, DISSOLVED (UG/L AS B)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
MAR											
20...	<2.0	<2.0	6	79	<2.0	1400	<2.0	3.0	<2.0	8.0	<3.0
APR											
18...	<2.0	<2.0	6	79	<2.0	1400	<2.0	3.0	<2.0	7.0	<12
MAY											
01...	3.0	<2.0	6	73	<2.0	1500	<2.0	3.0	<2.0	8.0	<12
29...	2.0	<2.0	8	88	<2.0	1400	<2.0	3.0	<2.0	6.0	<12
JUN											
12...	<2.0	<2.0	8	81	<2.0	1460	<2.0	2.0	<2.0	5.0	<15
26...	2.0	<1.0	7	49	<1.0	328	<1.0	<1.0	<1.0	3.0	<3.0
JUL											
24...	11	<2.0	7	80	<2.0	1620	<2.0	<2.0	<2.0	3.0	<12
AUG											
21...	<2.0	<2.0	6	72	<2.0	1470	<2.0	3.0	<2.0	5.0	<12
SEP											
25...	<3.0	<3.0	7	98	<3.0	1830	<3.0	<3.0	<3.0	6.0	<12

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)	URANIUM NATURAL DISSOLVED (UG/L AS U)
MAR											
20...	<2.0	130	4.0	20	6.0	1	<2.0	4200	14	5.0	10
APR											
18...	<2.0	130	<2.0	20	5.0	1	<2.0	4400	<24	4.0	11
MAY											
01...	<2.0	130	<2.0	18	9.0	2	<2.0	4100	<24	9.0	9.0
29...	<2.0	130	<2.0	22	7.0	1	<2.0	4000	<24	7.0	9.0
JUN											
12...	<2.0	120	<2.0	19	5.0	2	<2.0	4500	<30	3.0	9.0
26...	<1.0	30	1.0	7.0	2.0	<1	<1.0	1000	20	4.0	2.0
JUL											
24...	<2.0	140	7.0	21	4.0	2	<2.0	4900	<24	6.0	12
AUG											
21...	<2.0	130	2.0	23	8.0	1	<2.0	4300	26	6.0	11
SEP											
25...	<3.0	150	8.0	21	7.0	2	<3.0	5200	<24	9.0	12

08475000 RIO GRANDE NEAR BROWNSVILLE, TX
(National Stream-Quality Accounting Network)

LOCATION.--Lat 25°52'35", long 97°27'15", Cameron County, Hydrologic Unit 13090002, at International Boundary and Water Commission gaging station, 1,000 ft downstream from El Jardin pumping plant, 6.8 mi below International Bridge between Brownsville and Matamoros, Tamps., Mex., and 48.8 mi above the Gulf of Mexico.

DRAINAGE AREA.--176,333 mi².

PERIOD OF RECORD.--Chemical analyses: January 1932, March 1943 to February 1944, February 1966 to September 1974. Chemical and biochemical analyses: October 1974 to current year. Pesticide analyses: May 1975 to May 1982, October 1995 to September 1996. Sediment analyses: February 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 1943 to February 1944, April 1967 to September 1983.
WATER TEMPERATURE: 1966-69, 1970-75, 1977-83.
SUSPENDED-SEDIMENT DISCHARGE: February 1966 to September 1983.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,130 microsiemens May 29, 1972; minimum daily, 337 microsiemens Sept. 3, 1967.
WATER TEMPERATURE: Maximum daily, 35.0°C on several days during summer months of 1982 and 1983; minimum daily, 8.0°C Jan. 10, 1967.
SEDIMENT CONCENTRATION: Maximum daily mean, 6,000 mg/L Feb. 28, 1983; minimum daily mean, 4 mg/L Apr. 26, 1970, Aug. 16, 18, 24, 27, 1977.
SEDIMENT LOAD: Maximum daily, 181,000 tons Feb. 28, 1983; minimum daily, 0.12 tons Aug. 26, 1983.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT												
17...	1130	167	1230	8.3	24.0	21	9.2	109	280	120	75	21
MAR												
19...	1020	112	1420	8.2	22.0	32	7.4	84	320	180	86	26
APR												
17...	0920	125	1520	8.3	25.0	23	7.6	91	350	200	96	27
MAY												
02...	1045	302	1450	8.1	24.0	32	7.7	91	280	190	77	22
28...	1040	152	1740	8.2	29.0	29	7.4	96	310	200	79	28
JUN												
11...	1010	88	1520	8.2	29.0	23	6.6	85	330	190	83	29
25...	1045	35	1650	8.1	28.5	19	6.3	81	320	200	81	28
JUL												
23...	1250	4.2	1930	8.1	30.0	39	5.0	65	360	210	89	33
AUG												
20...	1010	125	1530	8.1	30.0	22	6.6	88	310	180	77	27
SEP												
24...	0920	152	1360	8.0	30.5	7.5	6.2	82	310	150	84	24

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT											
17...	130	3	6.1	17	156	156	150	210	150	0.40	13
MAR											
19...	160	4	6.3	4	162	140	140	290	180	0.90	9.8
APR											
17...	170	4	6.5	0	184	150	150	300	200	0.80	13
MAY											
02...	150	4	6.3	0	121	99	98	270	170	0.90	11
28...	190	5	7.1	0	141	115	110	320	220	0.90	9.6
JUN											
11...	180	4	6.7	0	164	134	130	300	210	0.90	11
25...	170	4	7.3	0	151	124	120	290	210	0.90	12
JUL											
23...	210	5	7.5	0	181	148	150	330	240	0.90	19
AUG											
20...	160	4	7.3	0	157	129	130	280	200	0.90	13
SEP											
24...	150	4	6.5	0	201	165	160	230	190	0.60	16

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued
(National Stream-Quality Accounting Network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
OCT											
17...	732	701	--	--	<0.010	--	<0.050	<0.015	0.90	0.90	--
MAR											
19...	892	845	--	--	<0.010	--	<0.050	<0.015	1.0	1.0	--
APR											
17...	938	906	0.080	--	<0.010	0.080	0.080	<0.015	0.68	0.60	--
MAY											
02...	812	770	0.230	0.230	0.020	0.250	0.250	0.030	1.0	0.77	0.27
28...	966	926	--	--	<0.010	--	<0.050	0.020	0.80	0.78	0.28
JUN											
11...	916	904	--	--	<0.010	--	<0.050	0.050	0.50	0.45	0.25
25...	912	876	--	--	<0.010	--	<0.050	<0.015	1.3	1.3	--
JUL											
23...	1100	1020	0.090	0.090	0.010	0.100	0.100	0.030	1.1	0.97	0.37
AUG											
20...	868	844	--	--	<0.010	--	<0.050	<0.015	0.60	0.60	--
SEP											
24...	834	802	--	--	<0.010	--	<0.050	0.090	0.70	0.61	0.41

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT											
17...	0.30	0.90	0.110	0.050	0.010	0.03	3.8	2.2	38	17	99
MAR											
19...	0.40	1.0	0.160	0.020	0.002	0.01	4.2	2.5	63	19	100
APR											
17...	0.20	0.60	0.120	<0.010	<0.001	--	4.1	2.9	53	18	100
MAY											
02...	0.30	0.80	0.170	0.060	0.036	0.11	3.8	2.6	55	45	99
28...	0.30	0.80	0.110	0.030	0.016	0.05	3.7	2.4	156	64	97
JUN											
11...	0.30	0.50	0.060	0.030	0.009	0.03	3.5	2.2	47	11	98
25...	0.30	1.3	0.230	<0.010	0.009	0.03	3.8	2.0	28	2.6	92
JUL											
23...	0.40	1.0	0.120	<0.010	0.013	0.04	5.0	0.70	114	1.3	83
AUG											
20...	0.30	0.60	0.050	<0.010	0.013	0.04	4.0	1.6	43	15	98
SEP											
24...	0.50	0.70	0.210	0.120	0.130	0.40	4.6	1.6	32	13	97

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ANTI-MONY, DIS-SOLVED (UG/L AS SB)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	BORON, DIS-SOLVED (UG/L AS B)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT											
17...	<10	--	4	93	<0.50	--	<1.0	<5.0	<3.0	1.0	5.0
MAR											
19...	<1.0	<1.0	3	98	<1.0	330	<1.0	2.0	<1.0	3.0	3.0
APR											
17...	1.0	<1.0	3	117	<1.0	360	<1.0	2.0	<1.0	3.0	<3.0
MAY											
02...	2.0	<1.0	3	114	<1.0	270	<1.0	2.0	<1.0	3.0	16
28...	2.0	<1.0	3	138	<1.0	350	<1.0	<1.0	<1.0	3.0	<3.0
JUN											
11...	2.0	<1.0	4	130	<1.0	336	<1.0	2.0	<1.0	2.0	<3.0
25...	2.0	<1.0	3	126	<1.0	327	<1.0	1.0	<1.0	2.0	<3.0
JUL											
23...	<1.0	<1.0	6	141	<1.0	434	<1.0	<1.0	<1.0	2.0	<3.0
AUG											
20...	<1.0	1.0	5	136	<1.0	282	<1.0	1.0	<1.0	2.0	<3.0
SEP											
24...	<1.0	<1.0	7	100	<1.0	383	<1.0	1.0	<1.0	1.0	<3.0

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued
(National Stream-Quality Accounting Network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
OCT											
17...	<1.0	37	<1.0	<10	<1.0	<1	<1.0	1200	9	<3.0	--
MAR											
19...	<1.0	55	<1.0	7.0	2.0	<1	<1.0	1600	<6	2.0	3.0
APR											
17...	<1.0	57	<1.0	8.0	3.0	<1	<1.0	1700	<6	4.0	3.0
MAY											
02...	<1.0	56	<1.0	8.0	3.0	<1	<1.0	1400	<6	2.0	4.0
28...	<1.0	63	<1.0	9.0	3.0	<1	<1.0	1600	<6	4.0	4.0
JUN											
11...	<1.0	63	<1.0	9.0	2.0	<1	<1.0	1700	<6	3.0	4.0
25...	<1.0	60	<1.0	8.0	2.0	<1	<1.0	1700	<6	3.0	3.0
JUL											
23...	<1.0	65	<1.0	9.0	2.0	<1	<1.0	1900	<6	3.0	4.0
AUG											
20...	<1.0	57	<1.0	9.0	4.0	<1	<1.0	1500	10	4.0	4.0
SEP											
24...	<1.0	40	<1.0	6.0	2.0	<1	<1.0	1400	<6	3.0	2.0

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, the U.S. Geological Survey collects limited streamflow data at sites other than continuous stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. 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 1996

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Colorado River Basin				
08129500	Dove Creek Spring nr Knickerbocker, Tex.	Lat 31°11'06", long 100°43'51", Irion County, at headquarters ranchhouse, 500 ft upstream from Dove Creek, 1.8 mi upstream from Stilson Dam on Dove Creek, and 8.5 mi southwest of Knickerbocker.	--	1944-58† 1959-96	10-16-95 01-11-96 05-01-96 06-17-96 08-11-96 09-06-96 09-30-96	8.86 8.00 7.64 8.02 9.47 11.9 12.4
08143900	Springs at Fort McKavett, Tex.	Lat 30°50'03", long 100°05'37", Menard County, at Fort McKavett.	--	1902, 1905, 1922, 1942, 1948-49, 1951-52, 1955-56, 1958-96	10-23-95 01-11-96 02-14-96 04-17-96 06-20-96 08-19-96	21.0 21.0 20.8 19.1 15.0 17.5
08146500	San Saba Springs at San Saba, Tex.	Lat 31°11'44", long 98°42'42", San Saba County, 150 ft upstream from bridge on U.S. Highway 190 at San Saba and 0.8 mi east of courthouse.	--	1939, 1952, 1957, 1959-96	10-25-95 01-10-96 02-13-96 04-16-96 05-13-96 06-05-96 08-20-96	7.59 10.3 8.45 8.12 5.51 7.78 7.28
08149400	South Llano River near Telegraph, Tex.	Lat 30°15'43", long 99°56'01", Edwards County, 3.7 mi upstream from Paint Creek, 5.7 mi south of Telegraph, and 18.7 mi southwest of Junction.	508	1939, 1952, 1956, 1959-96	10-23-95 01-11-96 02-14-96 04-17-96 06-19-96 08-19-96	24.1 18.4 16.0 15.4 14.1 13.9
08149500	Seven Hundred Springs near Telegraph, Tex.	Lat 30°16'12", long 99°55'22", Edwards County, about 3 mi upstream from Paint Creek, about 5 mi south of Telegraph, and about 18 mi southwest of Junction.	--	1939, 1952, 1955-56, 1959-96	10-23-95 01-11-96 02-14-96 04-17-96 06-19-96 08-19-96	19.5 13.3 15.3 16.8 17.3 15.7
08155400	Barton Creek above Barton Springs at Austin, Tex.	Lat 30°15'48", long 97°46'19", Travis County, upstream from upper dam of Barton Creek swimming pool in Zilker Park and upstream from all springs known as Barton Springs at Austin.	125	1919-96	10-06-95 01-24-96 07-03-96	0 0 0
		Guadalupe River Basin				
08166140	Guadalupe River above Bear Creek at Kerrville, Tex.	Lat 30°40'10", long 99°11'42", Kerr County, 600 ft downstream from Goat Creek, 900 ft upstream from Bear Creek and Bear Creek Crossing, and 2.4 mi east of intersection of State Highways 27 and 39 in Ingram.	--	1978-86, 1996	10-12-95 12-06-95 01-05-96 04-03-96 06-06-96 07-05-96 07-31-96	83.7 73.0 65.2 93.2 54.4 28.1 32.3
08168000	Hueco Springs near New Braunfels, Tex.	Lat 29°45'33", long 98°08'23", Comal County, two springs located 400 and 500 ft west of the Guadalupe River, 600 ft downstream from the mouth of Elm Creek, and 4.2 mi north of New Braunfels.	--	1944-96	10-13-95 12-07-95 02-05-96 04-04-96 06-06-96 08-01-96	11.8 10.9 3.98 3.16 1.99 0

See footnotes at end of table.

Discharge measurements made at low-flow partial-record station during water year 1996--Continued

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Guadalupe River Basin--Continued				
08177818	San Antonio Springs at San Antonio, Tex.	Lat 29°27'56", long 98°28'04", Bexar County, just below Hildebrandt Street in San Antonio.	--	1951-52, 1959-62, 1972, 1974-77, 1979-96	11-22-95 01-10-96 02-23-96 04-04-96	0 0 0 0
08178090	San Pedro Springs at San Antonio, Tex.	Lat 29°26'42", long 98°30'06", Bexar County, at San Pedro Park in San Antonio.	--	1933-35, 1951-52, 1958-61, 1966, 1971, 1974-77, 1979-96	11-22-95 01-10-96 02-23-96 04-04-96	3.10 3.72 0 0
		Nueces River Basin				
08204000	Leona River spring flow near Uvalde, Tex.	Lat 29°09'15", long 99°44'35", Uvalde County, at old road crossing on White's Ranch, 2.0 mi downstream from Cooks Slough, and 4.7 mi southeast of Uvalde.	--	1935-65† 1966-96	10-20-95 01-17-96 03-22-96 05-10-96 07-11-96 09-13-96	18.7 23.4 13.8 1.92 0 0
		Rio Grande Basin				
08425500	Phantom Lake Spring near Toyahvale, Tex.	Lat 30°56'01", long 103°50'43", Jeff Davis County, 375 ft downstream from source of spring, 3.5 mi southwest of Toyahvale, and 7.0 mi southwest of Bahmorhea.	--	1931-33† 1942-66† 1967-96	10-18-95 01-09-96 04-18-96 07-02-96 09-05-96	1.47 1.31 1.18 0.82 1.88
08427000	Giffin Springs at Toyahvale, Tex.	Lat 30°56'51", long 103°47'19", Reeves County, 2,000 ft northwest of post office in Toyahvale.	--	1919, 1922-23, 1925, 1932-33†, 1941-86, 1988-96	10-18-95 01-09-96 04-18-96 07-02-96 09-05-96	3.53 2.71 4.05 2.62 4.64
08456300	Las Moras Springs at Brackettville, Tex. b/	Lat 29°18'33", long 100°25'13", Kinney County, in spring-flow pool at Brackettville, 160 ft south of U.S. Highway 90, and 1,550 ft upstream from bridge on Brackettville-Fort Clark Road.	--	1896, 1899-1900, 1902, 1904-06, 1910, 1912, 1925, 1928, 1951-96	10-11-95 01-17-96 02-16-96 03-12-96 04-09-96 05-14-96 06-11-96 07-09-96 08-13-96 09-10-96	27.8 10.5 8.51 8.23 7.2 2.5 2.2 0 0.60 8.6

† Operated as a continuous-record station.
b Records furnished by the International Boundary and Water Commission.

Crest-stage partial-record stations

The following table contains annual maximum stage and (or) discharge at partial-record stations operated primarily for the purpose of defining the flooding characteristics of the streams. At stations where discharge is given, or is footnoted "to be determined", a stage-discharge relaiton has been, or will be, defined by discharge measurements obtained by current meter or by indirect procedures. Water-stage recorders are located at these flood-hydrograph stations to facillitate complete hydrograph definition. At stations where only the maximum stage is given (discharge column is dashed), the data are generally collected for use in stage-frequency studies of flood-profile definition. Gages at these stations usually consist of a device that will register the peak stage occuring between inspections of the gage. The years used in the column "Period of record" identify the years in which the annual maximum has been determined.

Annual maximum stage and (or) discharge during water year 1996

Station name	Location	Period of record	Water Year 1996 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
Guadalupe River Basin								
Guadalupe River at New Braunfels, Tex. 08169500	Lat 29°41'52", long 98°06'23", Comal County, Comal Mills in New Braunfels and 0.4 mi upstream from IH-35. Drainage area is 1,652 mi^2.	1988† 1902, 1915-27† 1974-96	11-01-95	10.06 -- --	--	09-10-21	28.60	56,600
Guadalupe River at Gonzales, Tex. 08173900	Lat 29°29'49", long 97°27'17", Gonzales County, at Gonzales Hydro Station in Gonzales and 1.4 mi upstream from U.S. Highway 183. Drainage area is unknown.	1977-96	09-20-95	19.78	5,660	05-05-87	34.70	52,000
San Antonio River at Navarro Street, San Antonio, Tex. 08177900	Lat 29°25'50", long 98°29'24", Bexar County, at bridge on Navarro Street in San Antonio. Drainage area is unknown.	1973-96	06-25-96	*634.32	--	08-08-74	*642.77	--
San Pedro Creek at Santa Rosa Street, San Antonio, Tex. 08178100	Lat 2925'51", long 9829'49", Bexar County, at bridge on Santa Rosa Street in San Antonio. Drainage area is unknown.	1973-96	08-31-94	*638.30	--	07-16-90	*648.38	--
Martinez Creek at Fredericksburg Rd., San Antonio, Tex. 08178350	Lat 29°27'22", long 98°31'04", Bexar County, at bridge on Fredericksburg Road in San Antonio. Drainage area is unknown.	1973-96	09-01-96	*681.19	--	09-27-73	*683.84	--
Alazan Creek at West Martin Street, San Antonio, Tex. 08178400	Lat 29°25'51", long 98°30'51", Bexar County, at bridge on West Martin Street in San Antonio. Drainage area is unknown.	1973-96	08-31-96	*638.05	--	08-03-92	*644.20	--
Apache Creek at S. Zarzamora St., San Antonio, Tex. 08178450	Lat 29°24'47", long 98°31'42", Bexar County, at bridge on South Zarzamora Street in San Antonio. Drainage area is unknown.	1973-96	09-15-96	*627.23	--	09-27-73	*643.74	--
San Pedro Creek at Furnish Street, San Antonio, Tex. 08178500	Lat 29°24'22", long 98°30'38", Bexar County, at bridge on Furnish Street in San Antonio. Drainage area is unknown.	1973-96	08-31-96	*606.54	--	06-04-86	*616.28	--
San Antonio River at Ashley Street (Berg's Mill) San Antonio, Tex. 08178550	Lat 29°20'04", long 98°27'20", Bexar County, at bridge on Ashley Street in San Antonio. Drainage area is unknown.	1973-96	08-31-96	*515.99	--	07-16-90	*522.94	--
Nueces River Basin								
Rutledge Hollow at 7th Street, Poteet, Tex. 08207220	Lat 29°02'07", long 98°34'18", Atascosa in city of Poteet at 7th Street, and 2.0 mi above Atascosa River. Drainage area is 9.74 mi^2.	1979-96	08-30-96	413.43	--	07-17-90	*424.89	--
Atascosa River at U.S. Highway 281, Pleasanton, Tex. 08207300	Lat 28°57'44", long 98°28'51", Atascosa County, at bridge on U.S. Highway 281 in Pleasanton. Drain-area is unknown.	1973-96	08-30-96	345.18	--	06-28-93	*352.84	--
San Fernando Creek Basin								
Tranquitas Creek at Kingsville, Tex. 08212300	Lat 27°31'33", long 97°52'02", Kleberg County, at bridge on U.S. Highway 77 Business Route in Kingsville, 4.9 mi above San Fernando Creek, and 5.9 mi downstream from Tranquitas Dam. Drainage area is 48.5 mi^2.	1965-82, 1984-96	10-30-95	3.78	--	08-10-80	6.88	--

* Elevation, in feet.
† Operated as a continuous-record station.

See footnotes at end of table.

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table:

Discharge measurements made at miscellaneous sites during water year 1996

Station no.	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		Colorado River Basin				
Clear Creek near Menard	San Saba River	Lat 30°54'13", long 99°55'27", Menard County, at bridge on U.S. Highway 190, about 9 mi west of Menard.	106	1984-96	10-23-95	18.2
					01-11-96	16.1
					02-14-96	18.8
					04-17-96	16.4
					06-20-96	16.9
					08-19-96	14.6
Colorado River at Winchell 08138000	Colorado River	Lat 31°28'04", long 99°09'43", McCulloch-Brown County line near left bank at downstream end of pier of old abandoned bridge 300 ft. upstream from bridge on U.S. Highway 377, 0.3 mi south of Winchell, 5.9 mi downstream from Home Creek and at mile 560.7.	13,788	1924-34†, 1939-93†, 1994-96	10-26-95	0.52
					01-09-96	5.69
					02-12-96	5.19
					04-15-96	10.3
					05-08-96	464
					08-21-96	13.2
Tanner Spring near Telegraph	South Llano River	Lat 30°15'45", long 99°56'03", Edwards County, about 5.6 mi south of Telegraph, Kimble County, and 18.6 mi southwest of Juction, at mouth	--	1939, 1962, 1989-96	10-23-95	9.62
					01-11-96	10.8
					02-14-96	10.3
					04-17-96	9.14
					06-19-96	8.76
					08-19-96	8.84
		Rio Grande Basin				
Mud Springs 1/	Mud Creek	Lat 29°27'10", long 100°37'30", Kinney County, on Mays Ranch about 16 mi northwest of Brackettville.	--	1939-41, 1952-53, 1962, 1965-96	10-11-95	3.25
					01-17-96	2.5
					03-16-96	2.94
					03-12-96	2.22
					04-09-96	1.69
					05-15-96	0.9
					06-11-96	1.12
					07-09-96	0.82
					08-13-96	0.50
					09-10-96	1.0
Pinto Springs b	Pinto Creek	Lat 29°24'10", long 100°27'15", Kinney County, on C.C. Belcher Ranch 7.5 mi northwest of Brackettville.	--	1939-41, 1952-53, 1965-96	10-11-95	0
					04-09-96	0
					05-15-96	0
					06-11-96	0
					07-09-96	0
					08-13-96	0
					09-10-96	0

† Operated as a continuous-record station.
b Measurements by International Boundary and Water Commission.

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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^{0}	kilometer
	Area	
acre	4.047×10^{3}	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi^2)	2.590×10^{0}	square kilometer
	Volume	
gallon (gal)	3.785×10^{0}	liter
	3.785×10^{0}	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^{3}	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft^3)	2.832×10^{1}	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft^3/s) d]	2.447×10^{3}	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^{3}	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second
	2.832×10^{1}	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^{1}	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
	Mass	
ton (short)	9.072×10^{-1}	megagram or metric ton

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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