

Water Resources Data Texas Water Year 2002

Volume 5. Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins

By S.C. Gandara

Water-Data Report TX-02-5



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PREFACE

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

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

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had the primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to U.S. Geological Survey policy and established guidelines, most of the data were collected, computed, and processed from Subdistrict and Field Offices. The following supervised the collection, processing, and tabulation of the data:

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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; (p) precipitation.]

	Station number	Page
WESTERN GULF OF MEXICO BASINS		
GUADALUPE RIVER BASIN		
Guadalupe River:		
North Fork Guadalupe River near Hunt (d) -----	08165300	38
Guadalupe River at Hunt (d) -----	08165500	40
Johnson Creek near Ingram (d) -----	08166000	42
Guadalupe River above Bear Creek at Kerrville (d) -----	08166140	44
Guadalupe River at Kerrville (d) -----	08166200	46
Guadalupe River at Comfort (d) -----	08167000	48
Guadalupe River near Spring Branch (d) -----	08167500	50
Canyon Lake near New Braunfels (e) -----	08167700	52
Guadalupe River at Sattler (d) -----	08167800	54
Guadalupe River above Comal River at New Braunfels (d) -----	08168500	56
Comal River:		
Panther Canyon at New Braunfels (c) (t) -----	08168700	58
Comal Springs at New Braunfels (d) -----	08168710	60
Comal River at New Braunfels (d) -----	08169000	62
Guadalupe River at New Braunfels (e) -----	08169500	64
San Marcos River Tributary at Sessions Road, San Marcos (c) (t) -----	08169948	66
San Marcos Springs at San Marcos (d) -----	08170000	68
San Marcos River at San Marcos (d) -----	08170500	70
Blanco River at Wimberley (d) -----	08171000	72
Blanco River near Kyle (d) -----	08171300	74
San Marcos River at Luling (d) -----	08172000	76
Plum Creek at Lockhart (d) -----	08172400	78
Plum Creek near Luling (d) -----	08173000	80
Guadalupe River at Gonzales (d) -----	08173900	82
Peach Creek below Dilworth (d) -----	08174600	84
Sandies Creek near Westhoff (d) -----	08175000	86
Guadalupe River at Cuero (d) -----	08175800	88
Guadalupe River at Victoria (d) -----	08176500	90
Coleta Creek:		
Fifteenmile Creek near Weser (d) -----	08176550	92
Coleta Creek at Arnold Road Crossing near Schroeder (d) -----	08176900	94
Perdido Creek at Farm to Market Road 622 near Fannin (d) -----	08177300	96
Coleta Creek Reservoir near Victoria (e) -----	08177400	98
Coleta Creek near Victoria (d) -----	08177500	100
Guadalupe River near Bloomington (e) -----	08177520	102
SAN ANTONIO RIVER BASIN		
San Antonio River:		
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San Antonio River at San Antonio (e) -----	08178000	106
San Antonio River at Mitchell Street, San Antonio (d) -----	08178050	108
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Salado Creek at Wilderness Road at San Antonio (d) -----	08178585	112
Elm Waterhole Creek Tributary at San Antonio (c) (t) -----	08178627	114
Salado Creek at Loop 410 at San Antonio (d) -----	08178700	118
Salado Creek at Loop 13 at San Antonio (d) (c) (t) -----	08178800	120
Medina River at Bandera (d) -----	08178880	126
Medina Lake near San Antonio (e) -----	08179500	128
Medina River below Medina Lake (d) -----	08179520	130
Medina Canal near Riomedina (d) -----	08180000	132
Diversion Lake near Riomedina (d) -----	08180010	134
Medina River at Riomedina (d) -----	08180500	138
Medina River near Macdona (d) -----	08180700	140
Medina River near Somerset (d) -----	08180800	148
Leon Creek:		
Culebra Creek:		
Government Canyon Creek Site 2 near Helotes (c) (t) -----	08180941	150
Leon Creek at Scenic Loop Road near Leon Springs (c) (t) -----	08180945	152
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Leon Creek at Prue Road at San Antonio (c) (t) -----	08181050	158
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GAGING STATIONS, IN DOWNSTREAM ORDER,
FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

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	Station number	Page
WESTERN GULF OF MEXICO BASINS--Continued		
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San Antonio River near Falls City (d) -----	08183500	184
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Cibolo Creek at Selma (d) -----	08185000	188
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San Antonio River at Goliad (d) -----	08188500	192
Guadalupe-Blanco River Authority Calhoun Canal Pump Station near Long Mott (d) -----	08188600	194
Guadalupe River near Tivoli (e) -----	08188800	196
COPANO CREEK BASIN		
Copano Creek near Refugio (d) -----	08189200	202
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Mission River:		
Medio Creek near Beeville (d) -----	08189300	204
Mission River at Refugio (d) -----	08189500	208
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Aransas River near Skidmore (d) -----	08189700	210
NUECES RIVER BASIN		
Nueces River at Laguna (d) -----	08190000	214
West Nueces River near Brackettville (d) -----	08190500	216
Nueces River below Uvalde (d) -----	08192000	218
Nueces River near Asherton (d) -----	08193000	220
Nueces River at Cotulla (d) -----	08194000	222
San Casimiro Creek near Freer (d) -----	08194200	224
Nueces River near Tilden (d) (c) (t) -----	08194500	226
Frio River at Concan (d) (c) (t) -----	08195000	232
Dry Frio River near Reagan Wells (d) -----	08196000	236
Frio River below Dry Frio River near Uvalde (d) -----	08197500	238
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Sabinal River at Sabinal (d) -----	08198500	242
Hondo Creek near Tarpley (d) -----	08200000	244
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Seco Creek at Miller Ranch near Utopia (d) -----	08201500	248
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Frio River near Derby (d) -----	08205500	252
Frio River at Tilden (d) (c) (t) -----	08206600	254
San Miguel Creek near Tilden (d) -----	08206700	260
Choke Canyon Reservoir near Three Rivers (e) (c) (t) (s) -----	08206900	262
Choke Canyon Reservoir (Outlet Works Channel) near Three Rivers (d) -----	08206910	284
Atascosa River at Whitsett (d) -----	08208000	286
Nueces River near Three Rivers (d) (c) (t) -----	08210000	288
Nueces River at George West (e) -----	08210100	294
Lake Corpus Christi near Mathis (e) (c) (t) (s) -----	08210500	298
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Oso Creek at Corpus Christi (d) -----	08211520	322
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San Fernando Creek at Alice (d) -----	08211900	324
COASTAL BASIN326		
Los Olmos Creek near Falfurias (d) -----	08212400	326
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Rio Grande below Rio Conchos near Presidio (c) (t) -----	08374200	330
Rio Grande at Foster Ranch near Langtry (c) (t) (s) -----	08377200	334
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Pecos River near Orla (d) (c) (t) -----	08412500	340
Pecos River near Girvin (d) -----	08446500	344
Pecos River near Langtry (c) (t) (s) -----	08447410	346
Rio Grande below Amistad Dam near Del Rio (c) (t) (s) -----	08450900	352
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Rio Grande below Falcon Dam (c) (t) (s) -----	08461300	362
Arroyo Colorado at Harlingen (c) (t) (s) -----	08470400	366
Rio Grande near Brownsville (c) (t) (s) -----	08475000	370

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

The following continuous-record surface-water discharge or stage-only stations (gaging stations) in Texas have been discontinued. Daily stream-flow 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. A pound sign (#) after a station indicates a temporary discontinuance to redefine ratings. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the title page of this report.

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

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Punta De Agua Creek near Channing (d)	07227448	3,568	1968-73
East Cheyenne Creek Tributary near Channing (e)	07227460	1.60	1965-74
Canadian River at Tascosa (d)	07227470	18,536	1969-77
Tecovas Creek Tributary near Bushland (e)	07227480	2.5	1966-74
Dixon Creek near Borger (d)	07227920	134	1974-89
Palo Duro Creek near Canyon (e)	07229700	982	1942-54
Palo Duro Creek near Spearman (d)	07233500#	1,076	1954-79, 1999-2001
White Woman Creek Tributary near Darrouzett (e)	07234150	4.03	1966-74
Tierra Blanca Creek above Buffalo Lake near Umbarger (d)	07295500	1,968	1939-54, 1967-73
Buffalo Lake near Umbarger (e)	07296000	2,075	1938-54
Tierra Blanca Creek below Buffalo Lake near Umbarger (d)	07296100	2,075	1967-73
Prairie Dog Town Fork Red River near Canyon (d)	07297500	3,369	1924-26, 1938-49
Middle Tule Draw near Tulia (e)	07297920	313	1967-74
North Tule Draw at Reservoir near Tulia (d)	07298000	189	1939-40, 1941-73
Rock Creek Tributary near Silverton (d)	07298150	13.7	1966-74
Tule Creek near Silverton (d)	07298200	1,150	1964-86
Prairie Dog Town Fork Red River near Brice (d)	07298500	6,082	1939-44, 1949-51, 1960-63
Mulberry Creek near Brice (d)	07299000	534	1949-51
Prairie Dog Town Fork Red River near Lakeview (d)	07299200	6,792	1963-80
Little Red River near Turkey (d)	07299300	139	1968-81
Prairie Dog Town Fork Red River near Estelline (d)	07299500	7,293	1924-25, 1938-47
Prairie Dog Town Fork Red River below Mountain Creek near Estelline (e)	07299505	7,341	1974-77
Prairie Dog Town Fork Red River above Jonah Creek near Estelline (e)	07299510	7,533	1974-77
Jonah Creek at Weir near Estelline (d)	07299512	65.50	1974-82
Jonah Creek below Weir near Estelline (d)	07299514	66.60	1974-76
Jonah Creek at mouth near Estelline (d)	07299516	76	1974-76
Salt Creek near Estelline (d)	07299530	142	1974-79
Buck Creek near Wellington (e)	07299550	210	1951-64
Red River near Quanah (d)	07299570	8,321	1960-82
North Groesbeck Creek Tributary near Kirkland (d)	07299575	0.16	1966-74
Wanders Creek at Odell (e)	07299750	199	1949-50, 1952-89
Salt Fork Red River near Clarendon (d)	07299850	457	1960-64
Lelia Lake Creek near Hedley (e)	07299900	86	1951-70
Salt Fork Red River near Hedley (e)	07299930	744	1951, 1956-62
Oklahoma Draw Tributary near Hedley (e)	07299940	1.1	1965-74
Sweetwater Creek near Wheeler (e)	07301400	164	1951-64
Doodlebug Creek near Wheeler (e)	07301405	0.19	1967-73
Elm Creek near Shamrock (e)	07303300	N/A	1947-89
Quitaque Creek near Quitaque (d)	07307500	293	1945-59
North Pease River near Childress (d)	07307600	1,434	1973-79
North Pease River near Kirkland (e)	07307660	N/A	1973-79
Roaring Springs near Roaring Springs (e)	07307700	N/A	1937, 1943-95
Cottonwood Creek Tributary near Afton (e)	07307720	0.68	1967-74

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Middle Pease River near Paducah (d)	07307750	1,086	1973-79
Middle Pease River near Paducah (d)	07307760	1,123	1980-82
Middle Pease River near Kirkland (e)	07307780	1,250	1973-79
Canal Creek near Crowell (e)	07307950	49.0	1968-70, 1978-79
Pease River near Crowell (d)	07308000	3,037	1924-47
Plum Creek near Vernon (e)	07308220	4.99	1967-74
China Creek near Electra (e)	07308400	37	1967-76
North Fork Wichita River near Crowell (d)	07311622	591	1971-76
Middle Fork Wichita River near Truscott (d)	07311648	161	1971-76
South Fork Wichita River near Guthrie (d)	07311780	239	1952-54, 1956-57, 1971-76
South Fork Wichita River at Ross Ranch near Benjamin (d)	07311790	499	1971-79
Beaver Creek Tributary near Crowell (e)	07312140	3.43	1966-74
Wolf Creek near Iowa Park (e)	07312300	8.5	1966-74
North Fork Little Wichita River Tributary near Archer City (e)	07314200	0.10	1966-74
Little Wichita River near Henrietta (d)	07315000	1,037	1953-79
Little Wichita River near Ringgold (d)	07315400	1,350	1959-65
Farmers Creek near Saint Jo (e)	07315550	0.82	1966-74
Mineral Creek near Sadler (d)	07316200	26	1968-77
Sandy Creek near Sadler (e)	07316230	24	1968-74
Lake Texoma near Denison (e)	07331500	39,719	1942-93, 2000
Bois D'Arc Creek near Randolph (d)	07332600	72	1963-85
Cooper Creek near Bonham (e)	07332602	6.21	1966-74
Sanders Creek near Chicota (d)	07335400	175	1968-86
Little Pine Creek near Kanawha (d)	07336750	75.40	1969-80
Pecan Bayou near Clarksville (d)	07336800	100	1962-77
Red River near DeKalb (d)	07336820	47,348	1967-98
McKinney Bayou near Leary (e)	07336940	3.33	1966-73
Barkman Creek near Leary (e)	07336950	31.5	1958-64
Nelson Branch near Leonard (e)	07342450	0.22	1966-74
South Sulphur River near Commerce (d)	07342470	189	1980-91
Cuthand Creek near Bogata (d)	07343300	69	1964-74
Dial Branch near Bagwell (e)	07343350	1.00	1966-74
White Oak Creek near Mt. Vernon (e)	07343480	434	1966, 1969-75
White Oak Creek below Talco (d)	07343800	579	1938-50
Buck Creek near Cookville (e)	07343900	0.78	1966-74
Sulphur River near Darden (d)	07344000	2,774	1924-56
Sulphur River near Texarkana (d)	07344210	3,443	1980-85
Big Cypress Creek near Winnsboro (d)	07344482	27.2	1974-92
Dragoo Creek near Mt. Pleasant (e)	07344490	4.27	1967-74
Williamson Creek near Pittsburg (e)	07344600	7.11	1967-74
Boggy Creek near Daingerfield (d)	07345000	72	1943-77
Ellison Creek Reservoir near Lone Star (e)	07345500	37	1943-62, 1974-89
Cypress Creek Tributary near Jefferson (e)	07346010	0.51	1966-74
Taylor Branch near Smithland (e)	07346072	0.73	1966-74
Big Cypress Creek near Karnack (e)	07346085	2,174	1980-85
Frazier Creek near Linden (d)	07346140	48.0	1965-91
Sabine River near Emory (d)	08017500	888	1952-73
Burnett Branch near Canton (e)	08017700	0.33	1966-74
Grand Saline Creek near Grand Saline (d)	08018200	91.4	1968-73
Burke Creek near Yantis (d)	08018730	33.10	1979-89
Dry Creek near Quitman (e)	08018950	63.6	1968-75
Lake Winnsboro near Winnsboro (d)	08019300	27.1	1962-86
Big Sandy Creek near Hawkins (e)	08019430	196	1980-82
Prairie Creek near Gladewater (d)	08020200	48.90	1968-77

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Sabine River near Longview (d)	08020500	2,947	1904-07, 1924-33
Rabbit Creek at Kilgore (d)	08020700	75.80	1964-77
Grace Creek Tributary at Longview (e)	08020800	5.05	1967-74
Mill Creek near Henderson (d)	08020960	20.30	1979-81
Mill Creek near Longview (d)	08020980	47.90	1979-81
Tiawichi Creek near Longview (d)	08020990	62.70	1978-81
Cherokee Bayou near Elderville (d)	08021000	120	1940-49
Lake Cherokee near Longview (e)	08021500	158	1951-83
Sabine River near Tatum (d)	08022000	3,493	1939-78, 1979-82
“ “ “ “ (e)			
Redmon Branch near Hallesville (e)	08022010	0.46	1966-74
Eight Mile Creek near Tatum (e)	08022050	106	1962-71
Martin Creek near Tatum (d)	08022070	148	1974-96
Martin Creek near Beckville (e)	08022080	192	1962-71
Murvaul Bayou near Gary (d)	08022300	134	1958-83
Socagee Creek near Carthage (d)	08022400	82.60	1962-73
Tenaha Creek near Shelbyville (d)	08023200	97.80	1952-81
Dorsey Branch near Milam (e)	08024290	0.70	1967-74
Patroon Bayou near Milam (e)	08024300	130	1952-54, 1959-63
Sabine River near Milam (d)	08024400	6,508	1924-25, 1939-68
Palo Gaucho Bayou near Hemphill (d)	08024500	123	1952-65
Housen Bayou near Yellowpine (e)	08025250	92.1	1952-54, 1957, 1959-63
Sandy Creek near Yellowpine (e)	08025300	135	1952-54, 1957, 1959-63
Mill Creek near Burkeville (d)	08025307	17.6	1974-79
Little Cow Creek below McGraw Creek near Burkeville (e)	08026500	112	1952-58
Moore Branch near Newton (e)	08028505	3.77	1967-74
Nichols Creek near Buna (e)	08029750	54.4	1959-64
Cypress Creek near Buna (d)	08030000	69.20	1952-83
Adams Bayou Tributary near Deweyville (e)	08030700	12.4	1966-74
Cow Bayou near Mauriceville (d)	08031000	83.30	1952-86
Bethlehem Branch near Van (e)	08031100	1.09	1966-74
Kickapoo Creek near Brownsboro (d)	08031200	232	1962-89
Neches River near Reese (d)	08031500	851	1924-27
Hurricane Creek Tributary near Palestine (e)	08032100	0.39	1966-74
One Arm Creek near Maydelle (e)	08032250	6.01	1967-74
Squirrel Creek near Elkhart (e)	08032300	1.57	1967-74
Neches River near Alto (d)	08032500	1,945	1944-79
Piney Creek Tributary near Pennington (e)	08033250	1.17	1967-74
Piney Creek near Groveton (d)	08033300	79	1962-89
Shawnee Creek Tributary near Huntington (e)	08033450	0.52	1966-74
Greenwood Creek Tributary near Colmesneil (e)	08033480	0.15	1966-74
Bowles Creek near Selman City (e)	08033600	14.5	1968-85
Striker Creek near Summerfield (d)	08033700	146	1941-49
Striker Creek Reservoir near New Salem (e)	08033800	148	1941-49
East Fork Angelina River near Cushing (d)	08033900	158	1964-89
Mud Creek at Ponta (d)	08035000	475	1924-27
Angelina River near Lufkin (d)	08037000	1,600	1924-34, 1939-79
Bayou Lanana at Nacogdoches (d)	08037050	31.3	1965-86, 1988-93
Gingham Branch near Mt. Enterprise (e)	08037300	0.90	1967-74
Arenoso Creek near San Augustine (d)	08037500	75.30	1938-40
Angelina River near Zavalla (d)	08038500	2,892	1952-65
Ayish Bayou at San Augustine (d)	08039000	15.80	1924-25

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Angelina River at Horger (d)	08039500	3,486	1928-51, 1967-73
Little Sandy Creek Tributary near Jasper (e)	08039900	0.46	1967-74
Drakes Branch near Spurger (e)	08041400	5.03	1967-74
West Fork Double Bayou near Anahuac (e)	08042550	4.43	1967-74
North Creek SWS No. 28-A near Jermyn (e)	08042650	6.82	1972-80
North Creek near Jacksboro (d)	08042700	21.60	1956-80
Beans Creek at Wizard Wells (e)	08042900	29.60	1993-95
West Fork Trinity River at Bridgeport (d)	08043100	1,113	1984-89
West Fork Trinity River at Bridgeport (d)	08043500	1,147	1908-30
Big Sandy Creek near Bridgeport (d)	08044000	333	1937-95
Garrett Creek near Paradise (e)	08044135	52.5	1992-95
Salt Creek near Paradise (e)	08044140	52.7	1992-95
Walker Creek near Boyd (e)	08044200	2.95	1965-74
West Fork Trinity River at Lake Worth, Fort Worth (d)	08045500	2,069	1924-34
Clear Fork Trinity River near Aledo (d)	08046000	251	1947-75
Marine Creek at Fort Worth (d)	08048500	16.80	1950-58
Sycamore Creek at I.H. 35W, Fort Worth (d)	08048520	17.70	1970-76
Sycamore Creek Trib. above Seminary South, Fort Worth (d)	08048530	0.97	1970-76
Sycamore Creek Trib. at I.H. 35W, Fort Worth (d)	08048540	1.35	1970-76
Dry Branch at Fain Street at Fort Worth (d)	08048600	2.15	1969-76
Big Fossil Creek at Haltom City (d)	08048800*	52.8	1959-73
Little Fossil Creek at I.H. 820, Fort Worth (e)	08048820	5.64	1969-73
Little Fossil Creek at Mesquite Street, Fort Worth (d)	08048850	12.30	1969-76
Deer Creek Tributary near Crowley (e)	08048900	5.86	1967-74
Village Creek at Kennedale (d)	08048980	100	1986-89
Village Creek near Handley (d)	08049000	126	1925-30
Big Bear Creek near Grapevine (d)	08049550	29.6	1967-79
Trigg Branch at DFW Airport near Euless (d)	08049565	1.73	1983-87
Mountain Creek near Cedar Hill (d)	08049600	119	1961-84
Mountain Creek above Duncanville (e)	08049850	224	1986-87
Mountain Creek near Duncanville (e)	08049900	225	1971-90
Mountain Creek near Grand Prairie (d)	08050000	273	1925-33
Elm Fork Trinity River SWS 6-O near Muenster (e)	08050200	0.77	1957-73
Elm Fork Trinity River near Muenster (d)	08050300	46	1957-73
Elm Fork Trinity River near Sanger (d)	08050500	381	1949-85
Isle Du Bois Creek near Pilot Point (d)	08051000	266	1949-85
Elm Fork Trinity River near Pilot Point (d)	08051130	692	1985-92
Elm Fork Trinity River above Aubrey (e)	08051190	684	1981-89
Elm Fork Trinity River near Denton (d)	08052000	1,084	1924-27
Lake Dallas near Lake Dallas (e)	08052500	1,165	1929-57
Little Elm Creek SWS #10 near Gunter (e)	08052630	2.10	1966-72
Little Elm Creek near Celina (d)	08052650	46.70	1966-76
Hickory Creek at Denton (d)	08052780	129	1985-87
Indian Creek at Hebron Parkway at Carrollton (d)	08053010	15.0	1987-90
Furneaux Creek at Josey Lane at Carrollton (d)	08053030	4.10	1987-90
Hutton Branch at Broadway at Carrollton (e)	08053090	9.10	1987-90
Jones Valley Creek Tributary near Forestburg (e)	08053100	1.70	1966-74
Denton Creek near Roanoke (d)	08054000	621	1924-28, 1939-55
Gamble Branch near Argyle (e)	08054200	0.50	1965-74
Denton Creek near Grapevine (d)	08055000	705	1948-91
Joe's Creek at Royal Lane, Dallas (e)	08055580	1.94	1973-78
Joes Creek near Dallas (e)	08055600	7.4	1964-79
Bachman Branch at Dallas (d)	08055700	10	1964-79
Turtle Creek at Dallas (d)	08056500	7.98	1952-80, 1984-91
Coombs Creek at Sylvan Avenue, Dallas (e)	08057020	4.75	1965-78
Cedar Creek at Bonnie View Road, Dallas (e)	08057050	9.42	1965-78
White Rock Creek at Keller Springs Road, Dallas (d)	08057100	29.40	1961-79

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Spanky Branch at McCallum Lane at Dallas (e)	08057120	6.77	1962-78
Rush Branch at Arapaho Road, Dallas (e)	08057130	1.22	1973-78
Newton Creek at Interstate Highway 635, Dallas (e)	08057135	5.91	1974-78
Cottonwood Creek at Forest Lane, Dallas (e)	08057140	8.50	1962-78
Floyd Branch at Forrest Lane, Dallas (e)	08057160	4.17	1962-78
White Rock Creek at White Rock Lake, Dallas (d)	08057300	100	1963-79
Ash Creek at Highland Road, Dallas (e)	08057320	6.92	1963-78
Forney Creek at Lawnview Avenue, Dallas (e)	08057340	1.84	1963-72
White Rock Creek at Scyene Road, Dallas (d)	08057400	122	1963-79
Trinity River below Dallas (d)	08057410	6,278	1956-98
Elm Creek at Seco Boulevard, Dallas (e)	08057415	1.25	1973-78
Fivemile Creek at Kiest Boulevard, Dallas (e)	08057418	7.65	1974-78
Fivemile Creek at US Highway 77 West, Dallas (e)	08057420	14.30	1965-78
Woody Branch at US Highway 77 West, Dallas (e)	08057425	10.30	1965-78
Fivemile Creek at Lancaster Road, Dallas (e)	08057430	37.90	1965-78
White Branch at Interstate Highway 635, Dallas (e)	08057440	2.53	1974-78
Tenmile Creek at State Highway 342 at Lancaster (d)	08057450	52.80	1970-79
Honey Creek SWS #11 near McKinney (e)	08057500	2.14	1952-73
Honey Creek SWS #12 near McKinney (e)	08058000	1.26	1952-77
Honey Creek near McKinney (d)	08058500	39	1951-73
East Fork Trinity River near McKinney (d)	08059000	190	1949-75
Arls Branch near Westminster (e)	08059200	0.52	1965-74
Sister Grove Creek near Princeton (d)	08059500	113	1949-75
East Fork Trinity River above Pilot Grove near Lavon (d)	08060000	324	1949-53
East Fork Trinity River near Lavon (d)	08061000	773	1954-89
East Fork Trinity River near Rockwall (d)	08061500	840	1924-54
Duck Creek at Buckingham Road, Garland (e)	08061620	8.05	1969-76
Duck Creek near Garland (d)	08061700	31.6	1958-93
South Mesquite Creek at State Highway 352, Mesquite (e)	08061920	13.40	1969-76
South Mesquite Creek at Mercury Road near Mesquite (d)	08061950	23	1969-79
Cedar Creek Reservoir Spillway Outflow near Trinidad (d)	08062650	1,007	1966-82
Cedar Creek near Kemp (d)	08062800	189	1963-87
Bachelor Creek near Terrell (e)	08062850	13.0	1967-74
Kings Creek near Kaufman (d)	08062900	233	1963-87
Lacey Fork near Mabank (d)	08062980	118	1983-84
Cedar Creek near Mabank (d)	08063000	733	1939-66
South Twin Creek near Eustace (d)	08063003	27.40	1983-84
Red Oak Branch near Eustace (e)	08063005	0.90	1966-74
Cedar Creek at Trinidad (d)	08063020	1,011	1965-71
Briar Creek Tributary near Corsicana (e)	08063180	0.72	1966-74
Pin Oak Creek near Hubbard (d)	08063200	17.60	1956-72
Richland Creek near Richland (d)	08063500	734	1939-88
Alvarado Branch near Alvarado (e)	08063550	0.84	1966-74
Kings Branch near Reagor Springs (e)	08063620	0.62	1966-74
Chambers Creek near Corsicana (d)	08064500	963	1939-84
Richland Creek near Fairfield (d)	08064600	1,957	1972-83
Saline Branch Tributary near Bethel (e)	08064630	0.22	1967-74
Catfish Creek near Tennessee Colony (d)	08064800	207	1962-89
Mayes Branch near Latexo (e)	08065320	4.26	1967-74
Trinity River near Midway (d)	08065500	14,450	1939-71
Caney Creek near Madisonville (d)	08065700	112	1963-77
Nelson Creek near Riverside (e)	08065950	86.4	1949, 1965, 1970-74
Harmon Creek near Huntsville (e)	08065975	89.2	1973-81
West Carolina Creek near Oakhurst (e)	08066050	15.2	1949, 1966-73
White Rock Creek near Trinity (e)	08066100	222	1974-85
White Rock Creek near Trinity (e)	08066130	228	1966-74
Tantaboque Creek near Trinity (e)	08066140	61.3	1966-73
Caney Creek near Groveton (e)	08066145	41.4	1966-73

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Brushy Creek near Onalaska (d)	08066150	29.1	1966-70
Rocky Creek near Onalaska (e)	08066180	40.6	1966-73
Livingston Reservoir outflow weir near Goodrich (d)	08066191	16,583	1969-94
Long King Creek near Goodrich (d)	08066210	220	1972-81
Bluff Creek Tributary near Livingston (e)	08066280	0.62	1965-74
Big Creek near Shepherd(e)	08066400	38.80	1966-89
Gaylor Creek near Moss Hill (e)	08066800	32.3	1966-73
Devers Canal near Liberty (d)	08067080	N/A	1972-82
Goose Creek near McNair (e)	08067520	6.7	1963-65,
Welch Branch near Huntsville (e)	08067550	2.35	1965-74
Lake Conroe near Montgomery (e)	08067580	445	1973-76
Lake Conroe at Outflow Weir near Conroe (d)	08067610	445	1974,
			1977-89
Caney Creek near Dobbin (d)	08067700	40.40	1963-65
Landrum Creek Tributary near Montgomery (e)	08067750	0.13	1965-74
Lake Creek near Conroe (e)	08067900	291	1969-89
West Fork San Jacinto River near Porter (e)	08068100	970	1970-76
Mill Creek Tributary near Dobbin (e)	08068300	4.07	1967-73
Swale No. 8 at Woodlands (e)	08068438	0.55	1975-76,
			1980-88
Spring Creek at Spring (d)	08068520	419	1975-95
Spring Creek near Humble (e)	08068600	435	1971-76
Cypress Creek at Sharp Road near Hockley (d)	08068700	80.7	1975-85
Cypress Creek near Cypress (e)	08068750*	138	1971-76
Cypress Creek at Stuebner-Airline Road near Westfield (d)	08068900*	248	1982-87
Cypress Creek near Humble (e)	08069200	319	1971-76
West Fork San Jacinto River near Humble (d)	08069500	1,741	1929-54
Bear Creek near Cleveland (e)	08069850	1.46	1967-73
Caney Creek near New Caney (e)	08070600	178	1970-76
Peach Creek near New Caney (e)	08071100	155	1970-76
Tarkington Bayou near Dayton (e)	08071200	142	1964-76
Luce Bayou near Huffman (e)	08071300	226	1971-76
San Jacinto River near Huffman (d)	08071500	2,800	1937-53
Buffalo Bayou at Clodine (e)	08072400	84.2	1974-85
Bettina Street Ditch at Houston (e)	08073630	1.37	1979-85
Stony Brook Street Ditch at Houston (e)	08073750	0.50	1967-72
Bering Ditch at Woodway Drive, Houston (e)	08073800	2.77	1965-73
Cole Creek at Guhn Road at Houston (e)	08074100	7.05	1964-72
Bingle Road Storm Sewer at Houston (e)	08074145	0.21	1980-88
Cole Creek at Deihl Road at Houston (d)	08074150*	7.50	1964-86
Brickhouse Gully at Clarblak Street at Houston (e)	08074200	2.56	1965-83
Brickhouse Gully at Costa Rica Street at Houston (d)	08074250*	11.4	1964-81
Lazybrook Street Storm Sewer, Houston (e)	08074400	0.13	1978-88
Little White Oak Bayou at Houston (e)	08074550	20.9	1971-79
Buffalo Bayou at Main St., Houston (d)	08074600*	469	1962-94
Buffalo Bayou at McKee Street, Houston (d)	08074610	469	1992-2000
Buffalo Bayou at 69th Street, Houston (e)	08074700	476	1961-86
Brays Bayou at Addicks-Clodine Rd., Houston (e)	08074750	0.87	1974-77
Brays Bayou at Alief Road, Alief (e)	08074760*	12.9	1977-85
Keegans Bayou at Keegans Road near Houston (e)	08074780*	7.47	1964-71
Keegans Bayou at Roark Road near Houston (d)	08074800*	13.0	1964-85
Bintliff Ditch at Bissonnet Street, Houston (e)	08074850	4.38	1968-82
Willow Waterhole Bayou at Landsdowne Street, Houston (e)	08074900	3.81	1965-72
Hummingbird Street Ditch at Mullins Street, Houston (e)	08074910	0.32	1979-84
Brays Bayou at Scott Street, Houston (e)	08075100	106	1971-81
Sims Bayou at Carlsbad Street, Houston (e)	08075300	3.81	1964-72
Sims Bayou at MLK Blvd., Houston (e)	08075470	48.4	1978-89
Berry Bayou at Gilpin Street, Houston (e)	08075550	2.87	1965-84
Berry Bayou Tributary at Globe Street, Houston (e)	08075600	1.58	1965-72
Berry Bayou at Forest Oaks Street, Houston (e)	08075650*	10.7	1968-82

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Berry Bayou at Galveston Road, Houston (e)	08075700	4.86	1965-72
Huntington Bayou Tributary at Cavalcade Street, Houston (e)	08075750	1.20	1965-72
Huntington Bayou at Falls Street, Houston (e)	08075760	2.75	1964-84
Halls Bayou at Deertrail Street at Houston (e)	08076200	8.69	1965-84
Carpenters Bayou at Cloverleaf (e)	08076900	25.8	1964, 1971-93
Clear Creek near Pearland (d)	08077000	38.8	1944-45, 1946-60, 1963-94
Clear Creek Tributary at Hall Road, Houston (e)	08077100	1.31	1965-86
Clear Creek at Friendswood (d)	08077540	99.6	1994-97
Cowart Creek near Friendswood (e)	08077550	18	1965-74
Clear Creek near Friendswood (e)	08077600	126	1966-94
Armand Bayou near Genoa (e)	08077620	18.2	1968, 1971-73
Highland Bayou at Hitchcock (e)	08077700	15.6	1963-82
Highland Bayou Tributary near Texas City (e)	08077750	1.97	1966-73
Highland Bayou near Texas City (e)	08077780	20.8	1965-88
Flores Bayou near Danbury (e)	08078700	23.3	1967-72
Oyster Creek near Angleton (d)	08079000	171	1945-80
North Fork Double Mountain Fork Brazos River at Lubbock (d)	08079500	5,300	1940-49,
North Fork Double Mountain Fork Brazos River above	08079530	29.3	1952-54, 1957, 1962, 1967-76
Buffalo Springs nr Lubbock (e)			
Buffalo Springs Lake near Lubbock (e)	08079550	236	1967-77
Barnum Springs Draw near Post (e)	08079570	4.99	1965-73
North Fork Double Mountain Fork Brazos River near Post (d)	08079575	438	1984-93
Rattlesnake Creek near Post (e)	08079580	2.75	1966-74
Double Mountain Fork Brazos River near Rotan (d)	08080000	8,536	1950-51
Guest-Flowers Draw near Aspermont (e)	08080510	3.02	1965-74
McDonald Creek near Post (d)	08080540	103	1966-78
Running Water Draw at Plainview (d)	08080700	1,291	1939-53, 1957-78
Callahan Draw near Lockney (e)	08080750	37.5	1966-77
White River near Crosbytown (e)	08080800	529	1951-64
White River below falls near Crosbytown (e)	08080900	529	1951-64
Salt Fork Brazos River at Farm Road 1081 near Clairemont (e)	08080916	1,135	1968-77
Red Mud Creek near Spur (e)	08080918	65.1	1967-74
Salt Fork Brazos River at State Highway 208 near Clairemont (e)	08080940	1,357	1968-77
Duck Creek near Girard (d)	08080950	431	1965-89
Salt Fork Brazos River at U.S. Highway 380 near Jayton (e)	08080959	1,797	1968-77
Salt Fork Brazos River near Peacock (d)	08081000	4,619	1950-51, 1965-86
Short Croton Creek at mouth near Jayton (e)	08081050	18.1	1959-82
Croton Creek below Short Croton Creek near Jayton (e)	08081100	250	1959-82
Croton Creek near Jayton (d)	08081200	290	1959-86
Salt Croton Creek at Weir D near Aspermont (e)	08081400	55.5	1957-76
Haystack Creek at Weir E near Aspermont (e)	08081450	15.1	1957-77
Salt Croton Creek near Aspermont (d)	08081500	64.30	1957-77
Stinking Creek near Aspermont (d)	08082100	88.80	1966-83
North Croton Creek near Knox City (d)	08082180	251	1965-86
North Elm Creek near Throckmorton (e)	08082900	3.58	1965-77
Elm Creek near Profitt (e)	08082950	275	1969-85
Brazos River near Graham (d)	08083000	16,830	1916-20
Clear Fork Brazos River at Hawley (d)	08083240	1,416	1968-89
Mulberry Creek near Hawley (d)	08083245	205	1968-89
Elm Creek near Abilene (d)	08083300	133	1964-79
Little Elm Creek near Abilene (d)	08083400	39.10	1964-79
Elm Creek at Abilene (d)	08083430	422	1980-83
Cedar Creek at Abilene (d)	08083470	119	1971-84

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Paint Creek near Haskell (d)	08085000	914	1950-51
Humphries Draw near Haskell (e)	08085300	3.51	1965-77
Clear Fork Brazos River at Crystall Falls (d)	08086000	4,323	1922-29
Hubbard Creek near Sedwick (d)	08086015	128	1964-66
Hubbard Creek at Highway 380 near Moran (e)	08086020	152	1963-76
Deep Creek near Putnam (e)	08086030	33.8	1963-66
Brushy Creek near Putnam (e)	08086040	27.6	1963-66
Mexia Creek near Putnam (e)	08086045	67.0	1963-66
Deep Creek at Moran (d)	08086050	228	1963-75
Hubbard Creek near Albany (d)	08086100	454	1962-75
Salt Prong Hubbard Creek below Lake McCarty near Albany (e)	08086110	45.5	1963-66
Salt Prong Hubbard Creek at U.S. 380 near Albany (d)	08086120	61	1964-68
Cook Creek near Albany (e)	08086130	11.3	1963-76
North Fork Hubbard Creek near Albany (d)	08086150	39.3	1963-90
Salt Prong Hubbard Creek near Albany (d)	08086200	115	1962-63
Snailum Creek near Albany (d)	08086210	22.90	1964-66
Big Sandy Creek near Eolian (e)	08086220	91.4	1963-76
Battle Creek near Putnam (e)	08086230	32.0	1963-66
Battle Creek near Moran (d)	08086235	108	1967-68
Battle Creek near Eolian (e)	08086240	137	1963-66
Pecan Creek at FM 1853 near Eolian (e)	08086250	6.95	1963-66
Pecan Creek near Eolian (d)	08086260	26.40	1967-75
Big Sandy Creek near Breckenridge (e)	08086300	288	1962-75
Hubbard Creek near Breckenridge (d)	08086500	1,089	1955-86
Clear Fork Brazos River near Crystal Falls (e)	08087000	5,658	1916-20, 1928-51
Clear Fork Brazos River near Eliasville (d)	08087300	5,697	1916-20, 1924-25, 1928-51, 1962-82
Salt Creek at Olney (d)	08088100	11.80	1958-77
Salt Creek near Newcastle (d)	08088200	120	1958-60
Briar Creek near Graham (d)	08088300	24.20	1958-89
Brazos River at Farm Road 1287 near Graham (e)	08088420	13,432	1970-77
Big Cedar Creek near Ivan (d)	08088450	97	1965-89
Brazos River at Morris Sheppard Dam near Graford (d)	08088600	14,030	1990-94
Elm Creek Tributary near Graford (e)	08089100	1.10	1965-74
Palo Pinto Creek near Santo (d)	08090500	573	1925, 1951-76
Cidwell Branch near Granbury (e)	08090850	3.37	1966-73
Morris Branch near Bluff Dale (e)	08091200	0.06	1965-73
Panther Branch near Tolar (e)	08091700	7.82	1966-74
Nolan River at Blum (d)	08092000*	282.0	1924-87
Brazos River near Whitney (d)	08093000	17,648	1939-74
Bond Branch near Hillsboro (e)	08093200	0.36	1965-74
Hackberry Creek at Hillsboro (d)	08093250	57.9	1980-92
Hackberry Creek below Hillsboro (e)	08093260	86.8	1980-92
Cobb Creek near Abbott (d)	08093400	12.40	1967-79
Aquilla Creek near Aquilla (d)	08093500#	308	1939-2001
Aquilla Creek at RR bridge near Aquilla (e)	08093530	345	1976-85
Aquilla Creek at Farm Road 2114 near Aquilla (e)	08093540	351	1976-85
Aquilla Creek at Farm Road and 1858 near Ross (e)	08093560	392	1976-85
Aquilla Creek at Farm Road 933 near Ross (e)	08093580	397	1976-85
North Bosque River at Stephenville (d)	08093700	95.90	1958-79
Green Creek SWS #1 near Dublin (d)	08094000	4.19	1955-77
Green Creek near Alexander (d)	08094500	45.40	1958-73
South Bosque River near McGregor (e)	08095220	15.9	1967-73
Willow Branch at McGregor (e)	08095250	2.52	1966-73
Middle Bosque River near McGregor (d)	08095300*	182.0	1959-86
Hog Creek near Crawford (d)	08095400*	78.0	1959-86
South Bosque River near Speegleville (d)	08095500	386	1924-30

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Bosque River near Waco (d)	08095600	1,656	1960-82
Box Branch at Robinson (e)	08096550	0.34	1965-73
Cow Bayou SWS No. 4 (inflow) near Bruceville (e)	08096800	5.04	1958-75
Cow Bayou at Mooreville (d)	08097000	83.50	1958-75
Brazos River near Marlin (d)	08097500	30,211	1939-51
Deer Creek at Chilton (d)	08098000	84.50	1934-36
Little Pond Creek at Burlington (d)	08098300	23	1963-82
Leon River near De Leon (d)	08099100*	479.0	1960-87
Sabana River near De Leon (d)	08099300*	264.0	1960-87
Sabana River Tributary near De Leon (e)	08099350	0.48	1966-74
Leon River near Hasse (d)	08099500	1,261	1939-91
Eidson Creek near Hamilton (e)	08100100	2.91	1965-73
Bermuda Branch near Gatesville (e)	08100400	0.50	1966-73
Hoffman Branch near Hamilton (e)	08100800	5.56	1966-74
Cowhouse Creek near Killeen (d)	08101500	667	1925, 1939-42
Nolan Creek at Belton (d)	08102600	112	1974-82
School Branch near Lampasas (e)	08102900	0.90	1966-73
Fleece Branch near Lampasas (e)	08103450	1.08	1965-74
Lampasas River at Youngsfort (d)	08104000	1,240	1924-80
Lampasas River near Belton (d)	08104100*	1,321	1963-89
Salado Creek above Salado (e)	08104290*	134	1985-88
Salado Creek below Salado Springs (d)	08104310*	136	1985-87
N. Fork San Gabriel River upstream from State Highway 418 at Georgetown (e)	08104795*	271	1985-88
North Fork San Gabriel River at Georgetown (d)	08104800	268	1964-68
South Fork San Gabriel River near Bertram (e)	08104850	8.9	1967-74
San Gabriel River at Georgetown (d)	08105000*	405	1924-25, 1934-73, 1984-87
Berry Creek at State Hwy. 971 near Georgetown (d)	08105200*	117	1985-87
San Gabriel River near Weir (d)	08105300*	563	1977-90
San Gabriel River near Circleville (d)	08105400	599	1924-34, 1967-77
Avery Branch near Taylor (e)	08105900	3.52	1966-73
Brushy Creek at Coupland (d)	08106000	205.0	1924-26
Brushy Creek near Rockdale (d)	08106300	505	1967-80
San Gabriel River near Rockdale (d)	08106310	1,359	1975-92
Big Elm Creek near Temple (d)	08107000	74.70	1934-36
Big Elm Creek near Buckholts (d)	08107500	171	1934-36
North Elm Creek near Ben Arnold (d)	08108000	32.20	1935-36
North Elm Creek near Cameron (d)	08108200	44.80	1963-73
Little Branch near Bryan (e)	08108800	0.14	1966-73
Brazos River near Bryan (d)	08109000	39,515	1899-1903, 1918-92
Brazos River near College Station (d)	08109500	30,033	1899-1902, 1918-25
Yegua Creek near Somerville (d)	08110000	1,009	1924-92
Brazos River at Washington (e)	08110200	41,192	1966-95
Plummers Creek at Mexia (e)	08110350	4.42	1965-73
Navasota River near Groesbeck (d)	08110400	311	1965-79
Navasota River near Bryan (d)	08111000	1,454	1951-94, 1994-97
Navasota River near College Station (d)	08111010	1,809	1977-85
Burton Creek at Villa Maria Road, Bryan (d)	08111025	1.33	1968-70
Hudson Creek near Bryan (d)	08111050	1.94	1968-70
Winkelman Creek near Brenham (e)	08111100	0.75	1965-73
Piney Creek near Bellville (e)	08111600	30.7	1948, 1955, 1958, 1964-89
West Fork Mill Creek near Industry (e)	08111650	15.3	1964-89
Mill Creek near Bellville (d)	08111700	376	1963-93

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Brazos River near San Felipe (d)	08112000	35,100	1939-57
Brazos River near Wallis (e)	08112200	44,700	1974-75
Brazos River Authority Canal A near Fulshear (d)	08112500	N/A	1932-54, 1958-73
Richmond Irrigation Co. Canal near Richmond (d)	08113500	N/A	1932-54, 1956-78
Brazos River near Juliff (d)	08114500	45,084	1949-69
Seabourne Creek near Rosenberg (e)	08114900	5.78	1968-74
Fairchild Creek near Needville (d)	08115500	26.20	1947-55
Big Creek near Guy (d)	08116000	116	1947-50
Dry Creek near Rosenberg (d)	08116400	8.65	1959-79
Dry Creek near Richmond (d)	08116500	12.20	1947-50, 1957-58
San Bernard River near West Columbia (e)	08117700	766	1949, 1971-77
Mound Creek Tributary at Guy (e)	08117800	1.48	1966-73
Big Boggy Creek near Wadsworth (d)	08117900	10.30	1970-77
Bull Creek near Ira (d)	08118500	26.30	1948-54, 1959-62
Colorado River below Bull Creek near Ira (e)	08118600	3,524	1975-78
Bluff Creek near Ira (d)	08119000	42.60	1948-65
Bluff Creek at mouth near Ira (e)	08119100	44.1	1975-78
Colorado River near Ira (d)	08119500	3,483	1948-52, 1959-89
Morgan Creek near Westbrook (d)	08121500	273	1954-63
Graze Creek near Westbrook (d)	08122000	21.70	1954-59
Morgan Creek near Colorado City (d)	08122500	313	1947-49
Champlin Creek near Colorado City (d)	08123500	198	1948-59
Sulphur Springs Draw near Wellman (e)	08123620	41.80	1966-74
Beals Creek above Big Spring (d)	08123650	9,319	1959-79
Beals Creek at Big Spring (d)	08123700	9,341	1957-59
Beals Creek near Coahoma (d)	08123720	9,383	1983-88
Coahoma Draw Tributary near Big Spring (e)	08123750	2.38	1966-74
Bull Creek Tributary near Forsan (e)	08123760	0.4	1966-74
Colorado River near Silver (d)	08123900	14,997	1957-70
Bitter Creek near Silver (e)	08123920	4.3	1967-74
Salt Creek Tributary near Hylton (e)	08125450	0.25	1966-74
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
Middle Concho River near Tankersley (d)	08128500	2,653	1930-61
Spring Creek above Tankersley (d)	08129300*	424.7	1961-95
Dove Creek Springs near Knickerbocker (d)	08129500*	N/A	1944-58
Dove Creek at Knickerbocker (d)	08130500*	226	1961-95
Spring Creek near Tankersley (d)	08131000	699	1930-60
South Concho River above Pecan Creek near San Angelo (e)	08131300	470	1963-84
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	5,610	1970-74, 1998-2000
Puddle Creek near Veribest (e)	08136200	12.0	1966-73
Frog Pond Creek near Eden (e)	08136300	1.96	1967-73

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Mukewater Creek SWS No. 10A near Trickham (e)	08136900	15.3	1965-72
Mukewater Creek SWS No. 9 near Trickham (e)	08137000	4.02	1961-72
Mukewater Creek at Trickham (d)	08137500	70	1951-73
Deep Creek SWS No. 3 near Placid (e)	08139000	3.42	1954-60
Deep Creek near Mercury (d)	08139500	43.90	1954-73
Deep Creek SWS No. 8 near Mercury (e)	08140000	5.14	1952-71
Dry Prong Deep Creek near Mercury (d)	08140500	8.31	1951-71
Lake Clyde near Clyde (e)	08140600	36.9	1970-85
Pecan Bayou near Cross Cut (d)	08140700	532	1968-79
Jim Ned Creek near Coleman (d)	08140800	333	1965-80
McCall Branch near Coleman (e)	08141100	2.17	1966-73
Hords Creek near Valera (d)	08141500	54.20	1947-91
Hords Creek at Coleman (d)	08142000	107	1941-70
Brown County WID No. 1 Canal near Brownwood (d)	08142500	N/A	1950-83
Pecan Bayou at Brownwood (d)	08143500	1,660	1917-18, 1924-83
Brown Creek Tributary near Goldthwaite (e)	08143700	2.48	1966-73
Noyes Canal at Menard (d)	08144000	N/A	1924-83
Brady Creek near Eden (d)	08144800	101	1962-85
Brady Creek Tributary near Brady (e)	08145100	4.05	1967-73
Lake Buchanan near Burnet (e)	08148000	31,910	1937-90
Llano River Tributary near London (e)	08150200	0.58	1966-73
Stone Creek Tributary near Art (e)	08150900	0.40	1966-73
Llano River near Castell (d)	08151000	3,747	1924-39
Johnson Creek near Valley Spring (e)	08151300	5.66	1967-73
Little Flatrock Creek near Marble Falls (e)	08152700	3.20	1966-74
Spring Creek near Fredericksburg (e)	08152800	15.20	1967-73
Pedernales River at Stonewall (d)	08153000	647	1924-34
Cane Branch at Stonewall (e)	08153100	1.37	1965-71
Pedernales River near Spicewood (d)	08154000	1,294	1924-39
Lake Travis near Austin (d)	08154500	38,755	1940-90
Colorado River below Mansfield Dam, Austin (d)	08154510	38,755	1975-90
West Bull Creek at Loop 360 near Austin (e)	08154750	6.77	1976-82
Bull Creek at FM 2222, Austin (e)	08154760	30.4	1975-78
Bee Creek at West Lake Drive near Austin (e)	08154950	3.28	1980-82
Barton Creek near Camp Craft Road near Austin (d)	08155260	109	1982-89
Skunk Hollow Creek below Pond 1 at Austin (e)	08155400	0.12	1982-84
West Bouldin Creek at Riverside Drive, Austin (e)	08155550	3.12	1976-82
Shoal Creek at Steck Avenue, Austin (e)	08156650	2.79	1975-82
Shoal Creek at Northwest Park at Austin (d)	08156700	6.52	1975-84
Shoal Creek at White Rick Drive, Austin (e)	08156750	12.30	1975-82
Waller Creek at 38th Street, Austin (d)	08157000	2.31	1955-80
Waller Creek at 23rd Street, Austin (d)	08157500	4.13	1955-80
East Bouldin Creek at South 1st Street, Austin (d)	08157600	2.4	1997-2001
Blunn Creek near Little Stacey Park, Austin	08157700	1.2	1997-2001
Boggy Creek at US Highway 183, Austin	08158050	13.1	1977-86, 1994-2001
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
Ferguson Branch at Springdale Road, Austin (e)	08158300	1.63	1978-82
Little Walnut Creek at Georgian Drive, Austin (e)	08158380	5.22	1975-88
Little Walnut Creek at IH 35, Austin (e)	08158400	5.57	1975-82
Little Walnut Creek at Manor Road, Austin (e)	08158500	12.1	1975-82
Walnut Creek at Southern Pacific Railroad bridge, Austin (e)	08158640	53.5	1975-86
Onion Creek at Buda (e)	08158800	166	1961-78, 1979-83, 1992-95
“ “ “ (d)			
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

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Fox Branch near Oak Hill (e)	08158900	0.12	1965-73
Williamson Creek at Oak Hill (d)	08158920	6.30	1978-93
Williamson Creek at Jimmy Clay Road, Austin (d)	08158970	27.60	1975-85
Onion Creek below Del Valle (e)	08159100	339	1962-75
Wilbarger Creek near Pflugerville (d)	08159150	4.6	1963-80
Big Sandy Creek near McDade (d)	08159165	38.70	1979-85
Big Sandy Creek near Elgin (d)	08159170	63.80	1979-85
Dogwood Creek near McDade (e)	08159180	0.53	1980-85
Dogwood Creek at Highway 95 near McDade (e)	08159185	5.03	1980-85
Reeds Creek near Bastrop (e)	08159450	5.22	1967-73
Dry Creek at Buescher Lake near Smithville (d)	08160000	1.48	1940-66
Colorado River at La Grange (d)	08160500	40,430	1939-55
Colorado River above Columbus (d)	08160700	41,403	1983-85
Dry Branch Tributary near Altair (e)	08161580	0.68	1966-73
Little Robin Slough near Matagorda (e)	08162530	3.4	1969
Cashs Creek near Blessing (e)	08162650	14.8	1969-77
East Carancahua Creek near Blessing (e)	08162700	81.2	1968, 1970-83
West Carancahua Creek near Laward (e)	08162800	57.1	1970-76
Navidad River near Speaks (d)	08164350	437	1982-89, 1995-2000
Navidad River at Morales (d)	08164370	549	1995-2000
Navidad River near Ganado (d)	08164500	826	1939-80
Guadalupe River above Kerrville (e)	08166150	488	1976-79
Turtle Creek Tributary near Kerrville (e)	08166300	0.46	1966-74
Guadalupe River near Comfort (d)	08166500	762	1918-32
Rebecca Creek near Spring Branch (d)	08167600	10.90	1960-79
Blieders Creek at New Braunfels (e)	08168600	16.0	1962-89
Panther Canyon at New Braunfels (e)	08168700	0.73	1962-89
Trough Creek near New Braunfels (e)	08168720	0.48	1966-74
W.P. Dry Comal Creek Tributary near New Braunfels (e)	08168750	0.32	1966-74
Dry Comal Creek at New Braunfels (e)	08168800	N/A	1962-74
Walnut Branch near Seguin (e)	08169750	5.46	1967-74
East Pecan Branch near Gonzales (e)	08169850	0.24	1965-74
San Marcos River at San Marcos (d)	08169950	83.7	1915-21
West Elm Creek near Niederwald (e)	08172100	0.44	1965-74
San Marcos River at Ottine (d)	08173500	1,249	1915-43
Guadalupe River below Cuero (d)	08176000	4,923	1903-07, 1916-19, 1921-36
Irish Creek near Cuero (e)	08176200	15.5	1967-74
Three Mile Creek near Cuero (e)	08176600	0.48	1966-74
Coleto Creek Reservoir inflow (Guadalupe diversion) near Schroeder (d)	08176990	357	1980-94
Coleto Creek near Schroeder (d)	08177000	369	1930-34, 1953-79
Olmos Creek Tributary at FM 1535 at Savano Park (e)	08177600	0.33	1969-81
Olmos Reservoir at San Antonio (e)	08177800	32.4	1968-71, 1976-89, 1992-95
San Antonio River at Woodlawn Avenue, San Antonio (e)	08177860	36.4	1989-95
San Antonio River at Dolorosa, San Antonio (d)	08177920	N/A	1980-86
Alazan Creek at St. Cloud Street, San Antonio (e)	08178300	3.26	1969-79
San Pedro Creek at Furnish St., San Antonio (d)	08178500*	2.60	1916-29
Harlandale Creek at W. Harding Street, San Antonio (e)	08178555	2.43	1977-81
Panther Springs Creek at FM 2696 near San Antonio (e)	08178600	9.54	1969-77
Lorence Creek at Thousand Oaks Blvd., San Antonio (e)	08178620	4.05	1980-84
West Elm Creek at San Antonio (e)	08178640	2.45	1976-88
East Elm Creek at San Antonio (e)	08178645	2.33	1976-81
Salado Creek Tributary at Bitters Road, San Antonio (e)	08178690	0.26	1969-81
Salado Creek at Rittman Road, San Antonio (e)	08178720	137.1	1968-81

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Salado Creek Tributary at Bee Street, San Antonio (e)	08178736	0.45	1970-77
Salado Creek at E. Houston Street, San Antonio (e)	08178740	181	1968-81
Salado Creek at U.S. Highway 87, San Antonio (e)	08178760	186	1968-81
Salado Creek at Southcross Blvd., San Antonio (e)	08178780	188	1968-81
Bandera Creek Tributary near Bandera (e)	08178900	0.27	1966-74
Medina River near Pipe Creek (d)	08179000	474	1923-35, 1953-82
Red Bluff Creek near Pipe Creek (d)	08179100	56.30	1956-81
Medina River Tributary near Pipe Creek (e)	08179200	0.30	1966-74
Medina River at La Coste (d)	08180640	805	1987-2000
Medio Creek at Pearsall Road, San Antonio (e)	08180750	47.9	1987-95
Leon Creek Tributary at FM 1604, San Antonio (e)	08181000	5.57	1968-80
French Creek Tributary near Helotes (e)	08181200	1.08	1966-74
Ranch Creek near Helotes (d)	08181410		1978
Leon Creek Tributary at Kelly Air Force Base (d)	08181450	1.19	1969-79
Calaveras Creek SWS No. 6 (inflow) near Elmendorf (e)	08182400	7.01	1957-77
Calaveras Creek near Elmendorf (d)	08182500	77.20	1954-71
San Antonio River at Calaveras (d)	08183000	1,786	1918-25
Cibolo Creek near Boerne (d)	08183900	68.4	1963-95
Cibolo Creek near Bulverde (d)	08184000	198	1946-66
Cibolo Creek above Bracken (d)	08184500	250	1946-51
Cibolo Creek at Sutherland Springs (d)	08185500	665	1924-29
Ecletto Creek near Runge (d)	08186500	239	1962-89
Escondido Creek SWS No. 1 (inflow) near Kenedy (e)	08187000	3.29	1955-73
Escondido Creek at Kenedy (d)	08187500	72.40	1954-73
Escondido Creek SWS No. 11 (inflow) near Kenedy (e)	08187900	8.45	1959-77
Dry Escondido Creek near Kenedy (d)	08188000	9.43	1954-59
Baugh Creek at Goliad (e)	08188400	3.02	1966-74
Guadalupe-Blanco River Authority Calhoun Canal-Flume No. 2 near Long Mott (d)	08188750	N/A	1972-86
Guadalupe River at State Highway 35 near Tivoli (e)	08188810	10,280	1975-82
Olmos Creek Tributary near Skidmore (e)	08189600	0.58	1966-73
Chiltipin Creek at Sinton (d)	08189800	128	1970-91
Nueces River near Uvalde (d)	08191500	1,930	1928-39
Nueces River near Cinonia (d)	08192500	2,150	1915-25
Plant Creek near Tilden (e)	08194550	0.36	1965-74
Nueces River at Simmons (d)	08194600	8,561	1965-77
Frio River at Knippa (d)	08195700	N/A	1953
Dry Frio River at Knippa (d)	08196500	179	1953
East Elm Creek near Sabinal (e)	08198900	10.6	1967-74
Frio River near Frio Town (d)	08199700	1,460	1924-27
Hondo Creek near Hondo (d)	08200500	132	1953-64
Bone Creek near Hondo (e)	08200900	0.19	1965-74
Seco Creek near Utopia (d)	08202000	53.20	1952-61
Seco Creek Reservoir inflow near Utopia (d)	08202450	59.5	1991-98
Seco Creek near D'Hanis (d)	08202500	87.40	1952-64
Parkers Creek Reservoir (d)	08202800	10.0	1991-99
Leona River Tributary near Uvalde (e)	08203500	1.21	1966-74
Leona River Spring Flow near Uvalde (d)	08204000*	1.21	1939-77
Leona River near Divot (d)	08204500	565	1924-29
Frio River at Calliham (d)	08207000	5,491	1925-26, 1932-81
Rutledge Hollow Creek near Poteet (e)	08207200	9.33	1966-74
Rutledge Hollow at 7th Street, Poteet (d)	08207220	N/A	1979-2000
Atascoas River at U.S. Highway 281, Pleasanton (d)	08207300	N/A	1973-2000
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
Rincon Bayou Channel near Calallen (d)	08211503	N/A	1996-2000
Pintas Creek Tributary near Banquete (e)	08211550	3.28	1966-74

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Hamon Creek near Freer (e)	08211600	0.73	1965-73
San Diego Creek at Alice (d)	08211800	319	1964-89
Lake Alice at Alice (e)	08211850	150	1965-86
San Fernando Creek near Alice (d)	08212000	518	1962-63
North Las Animas Creek Tributary near Freer (e)	08212320	0.07	1969-74
Rio Grande at Vinton Bridge near Anthony (d)	08363840	28,680	1969-74
Northgate Reservoir at El Paso (e)	08365540	6.89	1973-75
Range Reservoir at El Paso (e)	08365545	11.89	1973-75
Franklin Canal at El Paso (d)	08365550	N/A	1969-72
McKelligon Canyon at El Paso (d)	08365600	2.30	1958-77
Government Ditch at El Paso (d)	08365800	6.40	1958-77
Rio Grande at Jaurez, MX (d)	08366000	29,350	1938-56
Riverside Canal near Socorro (d)	08366400	37,830	1969-72
Rio Grande at Island Station near El Paso (d)	08366500	29,743	1938-60
Rio Grande at Tornillo Branch near Fabens (d)	08367000	N/A	1924-38
Tornillo Drain at mouth near Tornillo (d)	08368000	N/A	1969-72
Tornillo Canal near Tornillo (d)	08368300	N/A	1969-72
Hudspeth Feeder Canal near Tornillo (d)	08368900	N/A	1969-72
Rio Grande at County Line Station near El Paso (d)	08369500	30,610	1938-60
Camo Rice Arroyo Tributary near Fort Hancock (e)	08370200	2.35	1966-74
Wild Horse Creek Tributary near Van Horn (e)	08370800	0.74	1966-73
Cibolo Creek near Presidio (d)	08373200	276	1971-77
Rio Grande above Presidio (lower Station) (d)	08373500	N/A	1901-13, 1924-54
Rio Grande at Langtry (d)	08377500	84,795	1900-14, 1920, 1924-60
Rio Grande Tributary near Langtry (e)	08377600	0.32	1966-74
Delaware River Tributary near Orla (e)	08407800	1.6	1966-74
Pecos River near Angeles (d)	08409500	20,540	1914-37
Salt Screwbean Draw near Orla (d)	08411500	464	1939-41, 1944-57
Pecos River near Mentone (d)	08414000	21,650	1922-26, 1969-73
Reeves County WID No. 2 Canal near Mentone (d)	08414500	N/A	1922-25, 1939-57, 1964-90
Ward County WID No. 3 Canal near Barstow (d)	08415000	N/A	1939-57, 1964-90
Pecos River above Barstow (d)	08416500	21,800	1916-21
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
San Solomon Springs at Toyahvale (d)	08427500*	N/A	1932-34, 1941-65
West Sandia Spring at Balmorhea (d)	08429000	N/A	1932-33
East Sandia Spring at Balmorhea (d)	08430000	N/A	1932-33
Toyah Creek near Pecos (d)	08431000	1,024	1940-41, 1944-45
Salt Draw near Pecos (d)	08431500	1,882	1939-41, 1944-45
Limpia Creek below Fort Davis (d)	08431800	227	1962-77
Limpia Creek near Fort Davis (d)	08432000	303	1925-32
Toyah Creek below Toyah Lake near Pecos (d)	08434000	3,709	1939-51

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
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
Howards Creek Tributary near Ozona (e)	08447200	7.53	1967-73
Pecos River near Shumla (d)	08447400	35,162	1955-60
Pecos River near Comstock (d)	08447500	35,298	1900-54
Goodenough Springs near Comstock (e)	08448500	N/A	1929-60
Sonora Field Creek at Sonora (e)	08448800	2.60	1965-71
Devils River near Juno (d)	08449000	2,730	1925-49, 1964-73
Devils River near Comstock (d)	08449300	3,903	1955-58
Rough Canyon Tributary near Del Rio (e)	08449470	7.90	1967-73
Devils River near Del Rio (d)	08449500	4,185	1900-14, 1924-57
Evans Creek Tributary near Del Rio (e)	08449600	0.39	1966-73
Devils River near mouth, Del Rio (d)	08450500	4,305	1954-60
Rio Grande near Del Rio (d)	08452500	123,303	1900-15, 1920, 1924-54
San Felipe Creek near Del Rio (e)	08453000	46.0	1931-60
Zorro Creek near Del Rio (e)	08453100	10.0	1966-74
East Perdido Creek near Brackettville (e)	08454900	3.39	1965-74
Pinto Creek near Del Rio (d)	08455000	249	1929-69, 1971-72
Rio Grande at San Antonio Crossing (d)	08458700	129,226	1952-60
Arroyo San Bartolo at Zapata (e)	08459600	0.61	1966-74
Rio Grande near Zapata (d)	08460500	163,344	1932-53
International Falcon Reservoir near Falcon Heights (d)	08461200	N/A	1953-60
Rio Grande at Roma (d)	08462500	166,464	1900-13, 1923-54
Rio Grande near Rio Grande City (d)	08465500	180,941	1932-54
Rio Grande Tributary near Rio Grande City (e)	08466100	1.20	1966-74
Rio Grande Tributary near Sullivan City (e)	08466200	0.40	1966-74
North Floodway South of McAllen (d)	08468000	N/A	1928-60
South Floodway South of McAllen (d)	08470000	N/A	1929-60

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Rio Grande at Hildalgo (d)		08471500	176,100	1928-32, 1935, 1939, 1941-51
Rio Grande near Progreso Bridge (d)		08473300	176,228	1953-60
Rio Grande near San Beniot (d)		08473700	176,304	1953-60
Rio Grande at Matamoras, MX (d)		08474500	182,211	1900-13, 1923-54
Rio Grande near Brownsville (d)		08475000	176,333	1935-50

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

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

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

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Canadian River at Tascosa	07227470	19,200	SC, T, Cl	1948-53,
		18,536	SC, T, pH, Cl	1969-77
Canadian River near Canadian	07228000	22,866	SC, T	1974-81
Prairie Dog Town Fork Red River near Wayside	07297910	4,221	SC, T	1969-81
Tule Creek near Silverton	07298200	1,150	SC, T, pH, Cl	1968-69
Prairie Dog Town Fork Red River near Brice	07298500	6,082	SC, pH, Cl, S	1949-51,
			T	1950-51
Mulberry Creek near Brice	07299000	534	SC, pH, Cl, S	1949-51
Prairie Dog Town Fork Red River near Lakeview	07299200	6,792	SC, T	1968-80,
			S	1979-80
Little Red River near Turkey	07299300	139	SC, T	1968-81,
			S	1979-81
Jonah Creek at Weir near Estelline	07299512	65.50	SC	1974-82
Jonah Creek below Weir near Estelline	07299514	66.60	SC	1974-76
Salt Creek near Estelline	07299530	142	SC	1974-79
Prairie Dog Town Fork Red River near Childress	07299540	7,725	SC, T	1968-82,
				1994-97
Salt Fork Red River near Hedley	07299930	868	SC, T, pH, Cl	1956-61
Salt Fork Red River near Wellington	07300000	1,222	SC, T, pH, Cl	1952-54,
			SC, T	1968-91
North Pease River near Childress	07307600	1,434	SC, T	1973-79
Middle Pease River near Paducah	07307750	1,086	SC	1973-79,
			T	1973-79,
			S	1994-97
Middle Pease River near Paducah	07307760	1,128	SC	1980-82,
			T	1980
Pease River near Childress	07307800	2,754	SC, T	1968-82,
				1994-97
Pease River near Crowell	07308000	3,037	SC	1942-43
Pease River near Vernon	07308200	3,488	SC,T	1999
Red River near Burkburnett	07308500	20,570	SC, T	1968-81
North Fork Wichita River near Paducah	07311600	540	SC, T	1968-76
North Fork Wichita River near Crowell	07311622	591	SC	1971-76
Middle Fork Wichita River near Truscott	07311648	161	SC	1970-76
Truscott Brine Lake near Truscott	07311669	26.2	SC, T	1985-90
North Fork Wichita River near Truscott	07311700	937	SC, T	1969-92
South Fork Wichita River near Guthrie	07311780	239	SC	1970-76
South Wichita River below Low-Flow Dam near Guthrie	07311783	223	SC, T	1987-89
South Fork Wichita River at Ross Ranch near Guthrie	07311790	499	SC	1971-79,
			Cl	1988-97,
			S	1978-79
Wichita River near Seymour	07311900	1,874	SC, T	1968-79
Beaver Creek near Electra	07312200	652	SC,T	1969-70
				1996-99
Little Wichita River near Archer City	07314500	481	SC	1953-55,
			T	1953-54
Little Wichita River near Henrietta	07314900	1,037	SC, DO	1999
Little Wichita River near Henrietta	07315000	1,037	SC, T, pH, Cl	1953-56,
			S, T	1959-66,
			T	1954
East Fork Little Wichita River near Henrietta	07315200	178		
Little Wichita River near Ringgold	07315400	1,350	SC, pH, Cl	1959-62
Red River near Gainesville	07316000	30,872	SC, Cl	1944-46,
			SC, T, pH, Cl	1953-63,

DISCONTINUED SURFACE-WATER-QUALITY STATIONS--Continued

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Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Red River at Denison Dam near Denison	07331600	39,720	SC, T SC T	1967-89, 1944-89, 1945-89
Little Pine Creek near Kanawha	07336750	75.40	T	1980
Red River near De Kalb	07336820	47,348	SC, T	1968-91
South Sulphur River near Cooper	07342500	527	SC, T, pH, Cl	1959-66, 1968-72, 1973-89
Sulphur River near Talco	07343200	1,365	SC, T SC, T, pH, Cl SC, T	1966-72, 1973-91
White Oak Creek near Talco	07343500	494	SC, T, pH, Cl SC, T	1966-72, 1973-91
Sulphur River near Darden	07344000	2,774	SC, T, pH, Cl	1947-50
Big Cypress Creek near Pittsburg	07344500	366	SC, T, pH, Cl SC, T	1968-72, 1973-89
Little Cypress Creek near Jefferson	07346070	675	SC, T, pH, Cl SC, T	1968-72, 1973-91
Sabine River near Emory	08017500	888	SC, T, pH, Cl	1952-54
Grand Saline Creek near Grand Saline	08018200	91.40	SC, T, pH, Cl	1968-73
Sabine River near Mineola	08018500	1,357	SC, T, pH, Cl SC, T	1968-72, 1973-92
Lake Fork Creek near Quitman	08019000	585	SC, T, pH, Cl SC, T	1968-72, 1973-89
Big Sandy Creek near Big Sandy	08019500	231	SC, T, S	1985-86
Sabine River near Beckville	08022040	3,589	SC, T	1952-98
Sabine River below Toledo Bend near Burkeville	08026000	7,482	SC, T C	1969-86, 1969-75
Sabine River near Bon Wier	08028500	8,229	SC, T, C	1969-84
Sabine River near Ruliff	08030500	9,329	SC T pH, DO C Cl	1945, 1947-98 1947-98 1968-75, 1970-76, 1968
Cow Bayou near Mauriceville	08031000	83.30	SC, T, pH, Cl SC, T	1952-54, 1954-56
Neches River near Neches	08032000	1,145	SC, T	1974-91
Neches River near Alto	08032500	1,945	SC, T	1950-69
Neches River near Diboll	08033000	2,724	SC, T	1970-81
Neches River near Rockland	08033500	3,636	SC	1941-42, 1946-47
Angelina River near Lufkin	08037000	1,600	SC, T, pH, Cl SC, T	1955-78, 1955-
Attoyac Bayou near Chireno	08038000	503	SC, T	1984-99
Sam Rayburn Reservoir near Jasper	08039300	3,449	SC, T	1964-84, 1993-99
Angelina River below Sam Rayburn Dam near Jasper	08039400	3,449	SC, T	1964-79
Angelina River at SH 63 near Ebenezer	08039500	3,435	SC, T	1994-99
Village Creek near Kountze	08041500	860	SC, T	1968-70
Pine Island Bayou near Sour Lake	08041700	336	SC, T, pH, Cl SC, T	1968-72, 1973-89
Big Sandy Creek near Bridgeport	08044000	333	SC, T, S	1968-77,
Lake Worth above Fort Worth	08045400	2,064	pH, Cl	
Clear Fork Trinity River at Fort Worth	08047500	518	SC, pH, Cl T	1949-52, 1948-62
Village Creek at Everman	08048970	84.5	SC, pH, T, DO	1990
Elm Fork Trinity River SWS # 6-0 near Muenster	08050200	0.77	S	1957-66

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Elm Fork Trinity River near Muenster	08050300	46	SC T	1967-68, 1957-58, 1966-68, 1957-68
Clear Creek near Sanger	08051500	295	SC, T, S	1968-77
Little Elm Creek near Celina	08052650	46.70	SC T, S	1967-75, 1966-75
Little Elm Creek near Aubrey	08052700	75.50	SC T, S	1967-75, 1967-75
Elm Fork Trinity River near Lewisville	08053000	1,673	SC T	1982-86, 1976-86
White Rock Creek at Greenville Avenue, Dallas	08057200	66.4	SC, pH, T, DO	1997-2000
Trinity River below Dallas	08057410	6,278	SC, T S CI	1968-2000, 1972-75, 1998-2000 1970-81, 1998-99
Lavon Lake near Lavon	08060500	770	SC,T,CL	1969-74, 1975-82, 1995-99
Duck Creek near Garland	08061700	31.6	SC, pH, T, DO	1988-89
East Fork Trinity River above Seagoville	08061970	1,183	SC, T, pH, DO	1987-93
East Fork Trinity River at Seagoville	08061980	1,224	SC, pH, T, DO	1987-96
East Fork Trinity River near Crandall	08062000	1,256	SC, T pH, DO CI	1968-1981, 1987-2000 1977, 1986-2000 1964-81, 1986-2000
Trinity River at Trinidad	08062700	8,538	SC, T pH, DO CI S	1967-81 1986-2000 1966-94 1978-94
Cedar Creek near Mabank	08063000	733	SC, T, pH, CI	1956-57
Pin Oak Creek near Hubbard	08063200	17.60	SC T S	1967-72, 1957-60, 1965-72, 1957-60, 1962-72
Richland Creek near Richland	08063500	734	SC, T, pH, CI SC, T	1968-69, 1983-89
Chambers Creek near Corsicana	08064500	963	SC, T, pH, CI	1961-70
Richland Creek near Fairfield	08064600	1,957	SC, T, pH, CI	1956-66, 1972, 1973-83
Trinity River near Oakwood	08065000	12,833	SC, T SC, T, pH, CI SC, T, S	1948-54, 1977-81
Bedias Creek near Madisonville	08065800	321	SC, T S	1985-87, 1986
Long King Creek at Livingston	08066200	141	SC, T, pH, CI	1963-72
Trinity River near Goodrich	08066250	16,844	SC, T	1970-73
Trinity River near Moss Bluff	08067100	17,738	SC, pH, CI	1950-65
Old River near Cove	08067200	19.0	SC, pH, CI T	1950-65, 1965
Trinity River at Anahuac	08067300	17,912	SC, pH, CI	1950-65
Cedar Bayou near Crosby	08067500	69.4	SC,pH,CI	1971-79

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
West Fork San Jacinto River near Conroe	08068000	828	SC, T	1962-90,
			DO	1979-81
Panther Branch near Spring	08068450	34.50	S	1975-76
West Fork San Jacinto River near Humble	08069500	1,741	SC, Cl	1945-46
East Fork San Jacinto River near New Caney	08070200	388	SC, T	1984-99
San Jacinto River near Huffman	08071500	2,800	SC	1945-54,
			T	1949-54
Buffalo Bayou at West Belt Drive at Houston	08073600	307	SC, T	1979-81
Buffalo Bayou at Houston	08074000	358	SC, pH, T, DO	1986-2000
			Cl	1969-81
Whiteoak Bayou at Main Street, Houston	08074598	127	SC, T, DO	1992-97
Buffalo Bayou at Main Street, Houston	08074600	469	SC, T, DO	1986-92
Buffalo Bayou at McKee Street, Houston	08074610	469	SC, T, DO	1992-2000
			pH	1998-2000
Sims Bayou at Houston	08075500	63.0	SC, T, DO	1994-97
Chocolate Bayou near Alvin	08078000	87.70	SC, T	1978-81
North Fork Double Mountain Fork Brazos River near Post	08079575	438	SC, T	1984-93
Double Mountain Fork Brazos River near Rotan	08080000	8,536	SC, T	1950-51
Double Mountain Fork Brazos River near Aspermont	08080500	8,796	SC, T, S	1949-51
			SC, T	1957-95
McDonald Creek near Post	08080540	103	SC, T	1964-78
Salt Fork Brazos River near Peacock	08081000	4,619	SC, T	1950-51,
				1965-86
Croton Creek near Jayton	08081200	290	SC, T	1961-80
Salt Croton Creek near Aspermont	08081500	64.30	SC	1969-77,
			T	1972-73
Salt Fork Brazos River near Aspermont	08082000	5,130	SC, T, pH, Cl	1949-51,
			SC, T	1957-82
Stinking Creek near Aspermont	08082100	88.80	T	1950,
			SC, T	1966-69
North Croton Creek near Knox City	08082180	251	SC, T	1966-86
Brazos River at Seymour	08082500	15,538	SC, T	1960-95
Medina River near Somerset	08082800	967	SC, T, Cl	1998-2000
Clear Fork Brazos River at Hawley	08083240	1,416	SC, T	1968-79,
				1982-84
Clear Fork Brazos River at Nugent	08084000	2,199	SC, T, pH, Cl	1948-53
California Creek near Stamford	08084800	478	SC, T	1963-79
Paint Creek near Haskell	08085000	914	SC, T	1950-5
Clear Fork Brazos River at Fort Griffin	08085500	3,988	SC, T, S	1950-51,
			SC, T	1968-79,
				1982-84
Hubbard Creek near Sedwick	08086015	128	SC, T	1964-66
Deep Creek at Moran	08086050	228	SC, T	1963-75
Hubbard Creek near Albany	08086100	454	SC, T	1962-75
Salt Prong Hubbard Creek at U.S. Highway 380 near Albany	08086120	61	SC, T	1964-68
North Fork Hubbard Creek near Albany	08086150	39.30	SC, T	1964-90
Salt Prong Hubbard Creek near Albany	08086200	115	SC, T	1962-63
Snailum Creek near Albany	08086210	22.90	SC, T	1964-66
Battle Creek near Moran	08086235	108	SC, T	1967-68
Pecan Creek near Eolian	08086260	26.40	SC, T	1967-75
Big Sandy Creek near Breckenridge	08086300	288	SC, T	1962-77
Hubbard Creek near Breckenridge	08086500	1,089	SC, T	1955-75
Clear Fork Brazos River at Eliasville	08087300	5,697	SC, T	1962-82
Brazos River near South Bend	08088000	22,673	SC, Cl	1942-48,
			SC, T	1978-81
Salt Creek at Olney	08088100	11.80	SC, T	1958-60
Salt Creek near Newcastle	08088200	120	SC, T	1958-60

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Brazos River at Morris Sheppard Dam near Graford	08088600	23,596	SC T	1942-91, 1950-55, 1966-91
Brazos River near Dennis	08090800	25,237	SC, T	1971-95
Brazos River at Whitney Dam near Whitney	08092600	27,189	SC, T	1947-97
Aquilla Creek above Aquilla	08093360	255	SC, T	1980-83
Aquilla Creek near Aquilla	08093500	308	SC, T	1960-66, 1968-82
Brazos River near Highbank	08098290	30,436	T	1968-84
Leon River near Eastland	08098500	235	SC, T	1950-53
Leon River near Hasse	08099500	1,261	SC, T	1980-82, 1990-97
Leon River near Belton	08102500	3,542	T	1957-72
South Fork Rocky Creek near Briggs	08103900	33.30	S	1963-65
Lampasas River at Youngsport	08104000	1,240	SC, T	1961-64
Little River near Little River	08104500	5,228	SC, T	1965-73, 1980-82
Little River near Cameron	08106500	7,065	SC, T	1959-97
San Gabriel River near Weir	08105300	563	T	1977-82
San Gabriel River at Laneport	08105700	738	T	1977-82
Brazos River at State Highway 21 near Bryan	08108700	39,049	SC, T	1961-65
Brazos River near Bryan	08109000	39,515	SC, T	1966
Brazos River near College Station	08109500	39,599	SC, T	1961-84
Yegua Creek near Somerville	08110000	1,009	SC, T	1961-67
Navasota River above Groesbeck	08110325	239	SC, T	1968-89
Navasota River near Groesbeck	08110400	311	SC, T	1968-78
Navasota River near Easterly	08110500	968	SC	1942-43, 1947
Navasota River near Bryan	08111000	1,454	SC, T S	1959-81, 1976-81
Brazos River near Richmond	08114000	45,007	S SC T	1966-86, 1942-95, 1951-95
Brazos River near Rosharon	08116650	45,399	SC, T	1969-80
Brazos River at Harris Reservoir near Angleton	08116700	44,000	SC T	1962-77, 1967-77
Brazos River at Brazoria Reservoir near Brazoria	08117200	44,000	SC T	1962-77, 1967-77
San Bernard River near Boling	08117500	727	SC, T	1978-81
Colorado River above Bull Creek near Knapp	08118200	N/A	SC, T, Cl	1950-52
Bull Creek near Ira	08118500	26.30	SC, T, pH, Cl	1950-51
Bluff Creek near Ira	08119000	42.60	SC, T, pH, Cl	1950
Colorado River near Ira	08119500	3,483	SC, T	1950-52, 1959-70, 1975-82, 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 S	1948-51, 1949-51

DISCONTINUED SURFACE-WATER-QUALITY STATIONS--Continued

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Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Oak Creek near Blackwell	08126000	209	SC, T	1950
Colorado River at Ballinger	08126500	16,413	SC, T	1961-79,
			S	1978-79
Pecan Bayou at Brownwood	08143500	1,660	SC, T	1948-49
Pecan Bayou near Mullin	08143600	2,073	SC, T	1968-91
San Saba River near San Saba	08145500	N/A	SC, T	1962-65
San Saba River at San Saba	08146000	3,046	SC	1962-69,
			T	1963-70
Colorado River near San Saba	08147000	37,217	SC, T	1947-92,
			S	1951-62
Llano River at Llano	08151500	4,197	SC, T	1979-81
Lake Austin at Austin	08154900	38,240	SC, T	1965-80
Barton Creek below Barton Springs at Austin	08155505	125	SC, T,	1965,
				1975-83,
				1989-91,
				1994-97
Waller Creek at 23rd Street at Austin	08157500	4.13	T	1955-60
East Bouldin Creek at South 1st Street, Austin	08157600	2.4	CI	1997-2000
Blunn Creek near Little Stacey Park, Austin	08157700	1.2		1997-2001
Boggy Creek at US Highway 183, Austin	08158050	13.1	C	1977-86
			C, T	1994-2001
Colorado River at Austin	08158000	39,009	SC, T	1948-91
Colorado River above Columbus	08160700	41,403	SC, T	1983-86
Colorado River at Columbus	08161000	41,640	SC	1967-73,
			T	1957-59,
				1961-68
			S	1957-73
Colorado River at Wharton	08162000	42,003	SC	1945-92,
			T	1946-48,
Lavaca River near Edna	08164000	817	SC, T	1978-81
Navidad River near Speaks	08164350	437	SC, T, pH, CI	1996-97
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
Sandies Creek near Westhoff	08175000	549	S	1966
			CI	1962-99
Guadalupe River at Victoria	08176500	5,198	SC	1946-81,
			T	1951-81
Coletto Creek Reservoir (Condenser No. 1) near Fannin	08177360	414	T	1980-94
Coletto Creek Reservoir (outflow) near Victoria	08177410	494	T	1980-94
Olmos Creek at Dresden Drive, San Antonio	08177700	21.2	SC, pH, T, DO	1969-99
			S	1973
San Antonio River at San Antonio	08178000	41.8	SC, T	1991-92,
				1996-97
San Antonio River at Mitchell Street, San Antonio	08178050	42.4	SC, pH, T, DO	1992-99
San Antonio River at Loop 410 at San Antonio	08178565	125	SC, pH, T, DO	1987-2000
Medina River near Macdona	08180700	885	SC, pH, T, DO	1998-2000
Medina River at La Coste	08180640	805	SC, pH, T, DO	1987-95
Medio Creek at Pearsall Rd. at San Antonio	08180750	47.9	SC, pH, T, DO	1987-95
Ingram Road Outfall at Leon Creek Tributary at San Antonio	08181410	0.02	SC, pH, T, DO	1994-2000
Leon Creek at Interstate Highway 35 at San Antonio	08181480	219	SC, pH, T, DO	1985-2000
Medina River at San Antonio	08181500	1,317	SC, pH, T, DO	1987-2000
			CI	1965-2000
San Antonio River near Falls City	08183500	2,113	SC, pH, T, DO	1987-96
Cibolo Creek near Falls City	08186000	827	SC, T	1969-91

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Escondido Creek SWS #1 near Kenedy	08187000	3.29	S	1955-65
Guadalupe River at Tivoli	08188800	10,128	SC, T	1966-82
Mission River at Refugio	08189500	690	SC, T	1961-81
Nueces River at Cotulla	08194000	5,171	SC	1942
Frio River at Calliham	08207000	5,491	SC, T	1968-81
Nueces River at Bluntzer	08211000	16,772	SC, T	1948-91
Los Olmos Creek near Falfurrias	08212400	480	SC, T	1975-81
Rio Grande at El Paso	08364000	29,267	SC, pH, T, DO	1930-2000
Rio Grande at Fort Quitman	08370500	31,944	SC, T	1975-78.
Rio Grande at Foster Ranch near Langtry	08377200	80,742	SC, T	1975-81
Pecos River below Red Bluff Dam near Orla	08410100	20,720	SC	1937-69,
			T	1953-69
Salt Draw near Orla	08411500	464	SC, T	1943-48
Pecos River near Mentone	08414000	21,650	SC	1939
Pecos River at Pecos	08420500	22,100	SC	1939-41
Toyah Creek near Pecos	08431000	1,024	SC	1940,
				1944
Salt Draw near Pecos	08431500	1,882	SC	1940,
				1944
Toyah Creek below Toyah Lake near Pecos	08434000	3,709	SC	1940-50,
			CI	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 Fort Ringgold, Rio Grande City	08464700	174,362	SC, pH, T	1959-2000
Rio Grande near Los Ebanos	08466300	N/A	SC, pH, T	1977-2000
Rio Grande at Mission Pumping Plant	08468000	171,800	SC	1945-50
Rio Grande below Anzalduas Dam	08469200	176,112	SC, pH, T	1967-72,
				1959-2000
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, 2002

VOLUME 5

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 six volumes of this report series entitled "Water Resources Data - Texas."

This report series includes records of stage, discharge, and water quality of streams and canals; stage, contents, and water quality of lakes and reservoirs and water levels and water quality of ground water wells. Volume 5 contains records for water discharge at 82 gaging stations; stage only at 6 gaging stations; stage and contents at 8 lakes and reservoirs; and water quality at 25 gaging stations. Also included are data for 30 partial-record stations comprised of 2 flood-hydrograph, 6 low-flow, 4 crest-stage, and 18 miscellaneous measurement stations. The data in this report represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating Federal, State, and City agencies in Texas.

This series of annual reports for Texas began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report was changed to its present format, with data on quantities and quality of surface water contained in each of three volumes, and expanding to five volumes beginning with the 1999 water year. Ground-water levels and water quality have been published in a separate volume beginning with the 1991 water year.

Prior to introduction of this series and for several water years concurrent with it, water resources data for Texas were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 7 and 8." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Books and Open-File Reports, Federal Center, Bldg. 41, Box 25425 Denver, CO 80225.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. These official U.S. Geological Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water Data Report TX-02-5." For archiving and general distribution, the reports for the 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or may be purchased on microfiche from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161 (703) 605-6000.

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

COOPERATION

Federal agencies that assisted the U.S. Geological Survey in the collection of data in this report in the form of funds or services in water year 2002 are:

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

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

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

Authority; Upper Guadalupe River Authority; Upper Neches River Municipal Water Authority; West Central Texas Municipal Water District; and Wichita County Water Improvement District No. 2.

HYDROLOGIC CONDITIONS

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

Streamflow across the State averaged normal during water year 2002.

Conservation storage in 77 selected reservoirs throughout the State, with a combined conservation capacity of 34,481,000 acre-feet, increased from 76 percent at the end of September 2001 to 77 percent at the end of September 2002. Records from these reservoirs indicate that storage increased in 34, decreased in 39, and remained the same in 4.

The area for which water resources data are presented in volume 5 includes the Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins. The area described in volume 5 and the location of selected streamflow-gaging stations in the area are shown in figure 1.

Streamflow

In the area covered in volume 5, streamflow averaged above normal during water year 2002. Streamflow for water year 2002 and streamflow for the period of record at the four selected stations (fig. 1) for which data are included in volume 5 is presented in table 1.

At the four long-term hydrologic index stations in the State, monthly mean streamflow during water year 2002 averaged normal. Monthly mean discharges for water year 2002 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 Guadalupe River near Spring Branch was normal during October, February through June and September, above normal for November through January, July and August of water year 2002. The station North Bosque River near Clifton had normal streamflow April through June and August, above normal streamflow during November through March and July, and below normal streamflow in September. The station North Concho River near Carlsbad had normal streamflow for October, December through April, June, August, and through Sep-

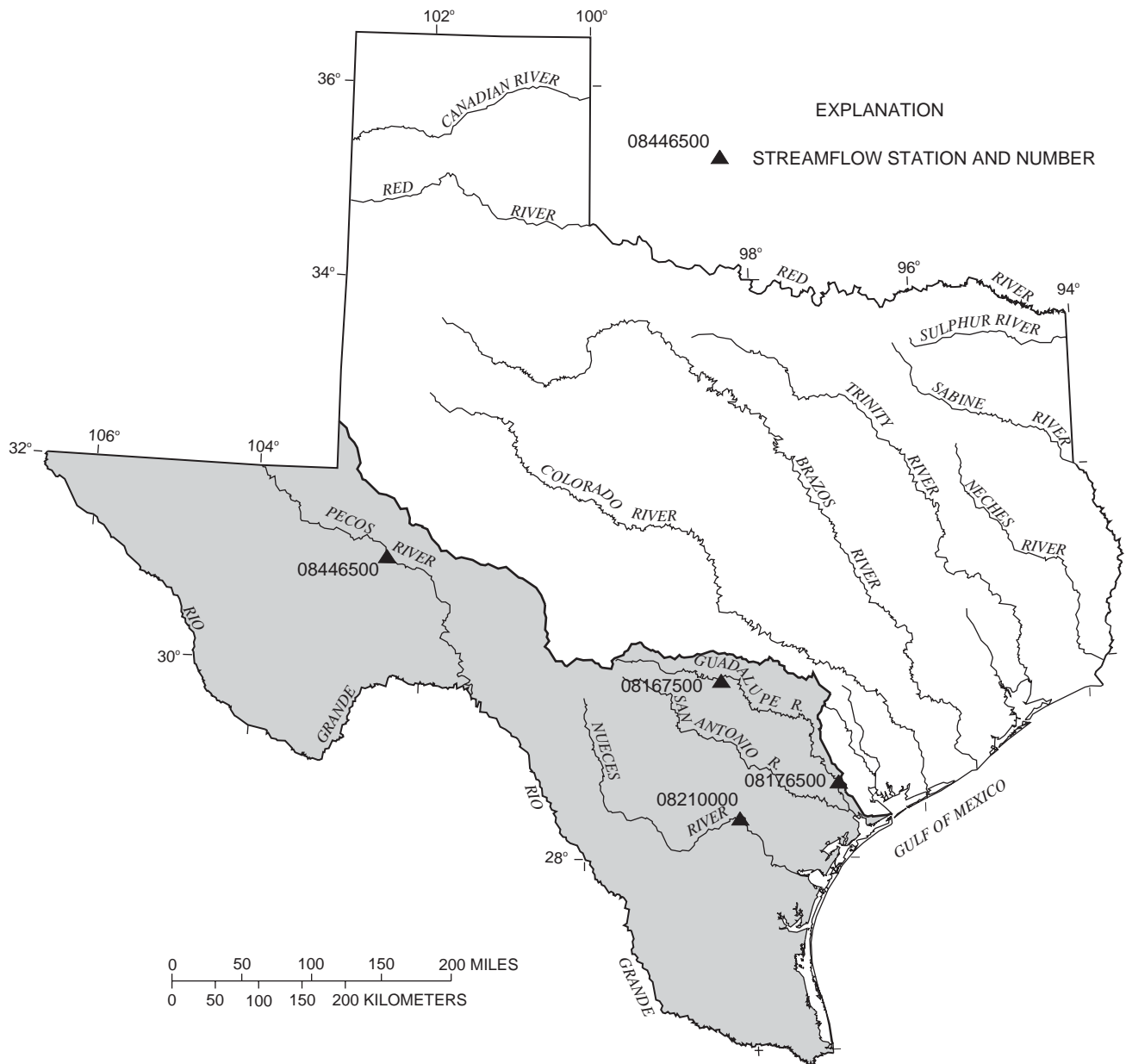


Figure 1. Area of Texas covered by volume 5 (shaded) and location of selected streamflow stations in volume 5.

WATER RESOURCES DATA—TEXAS, 2002

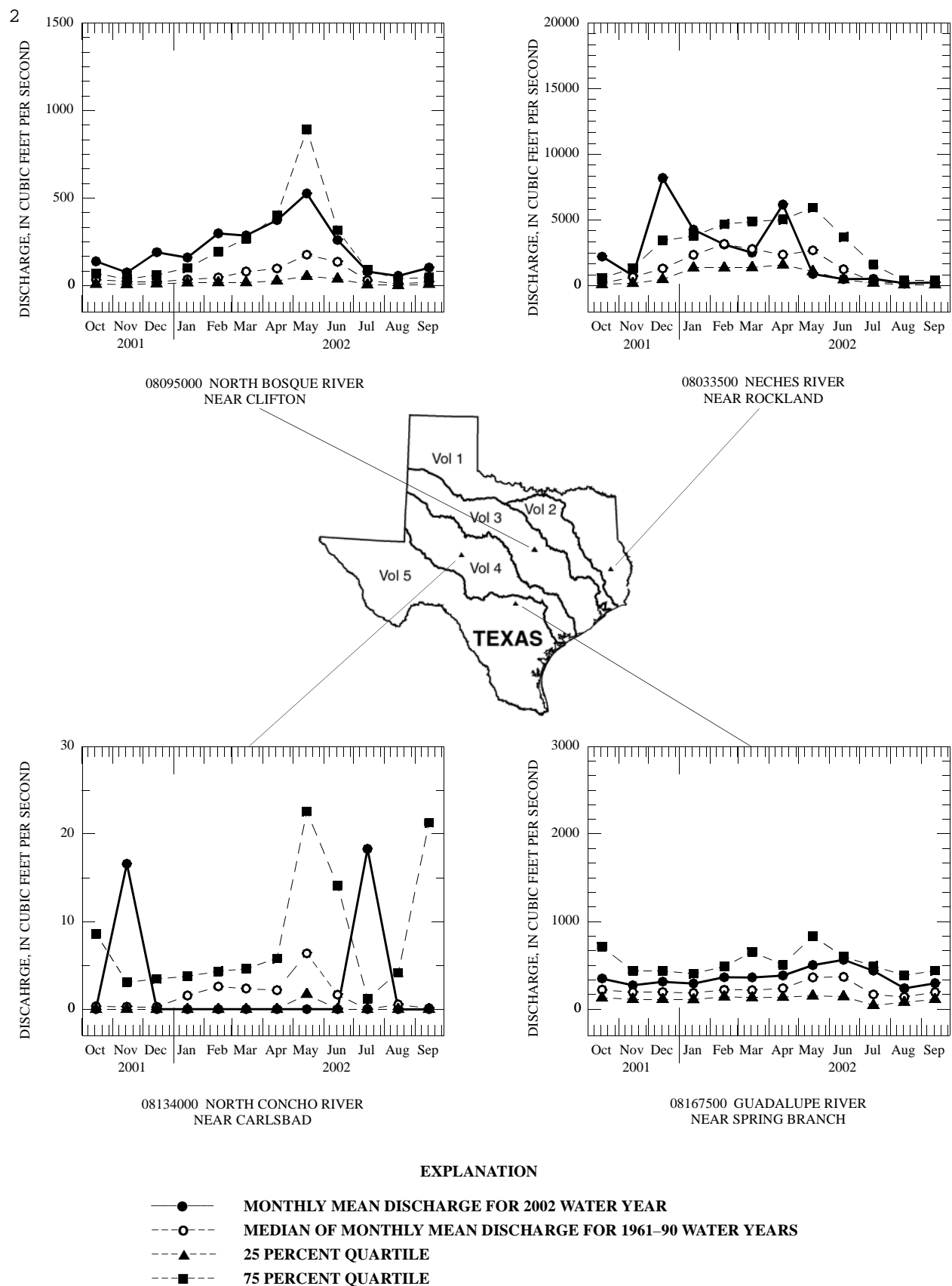


Figure 2. Monthly mean discharges at four long-term hydrologic index stations during 2002 water year and median of the monthly mean discharges for 1961–90 water years.

Conservation storage in 8 selected reservoirs in this area of the State, with a total combined conservation capacity of 5,244,000 acre-feet, increased from 40 percent of capacity at the end of September 2001 to 47 percent of capacity at the end of September 2002. Records from these reservoirs indicate

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.

Station no. and name		Discharge during 2002 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
<u>Guadalupe River Basin</u>							
08167500	Guadalupe River near Spring Branch, TX <u>1</u>	94,400	66	1,368	1160,000	0	366 (1922-2002)
08176500	Guadalupe River at Victoria, TX	71,700	578	3,885	1466,000	14	1,932 (1935-2002)
<u>Nueces River Basin</u>							
08210000	Nueces River near Three Rivers, TX	48,500	28	2,764	141,000	0	713 (1949-2002)
<u>Rio Grande Basin</u>							
08446500	Pecos River near Girvin, TX	155	2.6	15.1	120,000	1.9	69.8 (1939-2002)

1/ Hydrologic index station.

i From indirect measurement of peak flow.

k From supplementary gage.

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 streamflow representative of 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. At 10 of these sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program can be found at <http://water.usgs.gov/hbn/>.

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations was operated in the Mississippi, Columbia, Colorado, and Rio Grande basins. For the period 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia so that a network of 5 stations could be implemented on the Yukon River. 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 these constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and remobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals. Additional information about the NASQAN Program can be found at <http://water.usgs.gov/nasqan/>.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 225 precipitation chemistry monitoring sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and

future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as all data from the individual sites, can be found at <http://bqs.usgs.gov/acidrain/>.

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 59 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key federal, State, and local water resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. Additional information about the NAWQA Program can be found at <http://water.usgs.gov/nawqa/>.

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 2002 water year that began October 1, 2001, and ended September 30, 2002. A calendar of the water year is provided on the inside of the front cover. The records contain stage and streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

Downstream Order Numbering

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 08057000, which appears just to the left of the station name, includes the 2-digit Part number “08” plus

the 6-digit downstream-order number “057000.” The Part number designates the major river basin; for example, Part “08” is the Western Gulf of Mexico basin.

Records of Stage and Water Discharge

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

By contrast, partial records are obtained through discrete measurements and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as “Flood-hydrograph partial records,” “Crest-stage partial records,” or “Low-flow partial records.” Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow channel gain and loss studies, may be considered as partial records, but they are presented separately in this report. Instantaneous peak discharges are presented for all but the low-flow partial-record stations.

Data Collection and Computation

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

Records of stage are obtained with recorders at selected time intervals. Measurements of discharge are made with current meters and indirect procedures using methods adopted by the U.S. Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, TWRI, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves then are constructed. From these curves, rating tables indicating the discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves can be extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques. Stage-discharge ratings at gaging stations are described in TWRI, Book 3, Chapter A10.

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

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

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relation of stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes are determined. If the stage-content relation changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relation. Even when this is done, the contents computed may increase in error as the lapsed time

since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relations much as other stream discharges are computed.

For some streamflow gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the stage sensor or recorder fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily mean discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily-mean 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 errors in published water-quality records are discovered after publication, appropriate updates are made in the U.S. Geological Survey's distributed data system, NWIS, and subsequently to its web-based National data system, NWISWeb [<http://water.usgs.gov/nwis/nwis>]. 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 NWIS or NWISWeb to ensure the most recent updates. Updates to NWISWeb are currently made on an annual basis.

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 SEVEN-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.)

MAXIMUM PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript.

MAXIMUM PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the

manuscript or in a footnote. If the dates of occurrence for the maximum peak stage and maximum peak flow are different, 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 ft³/s; to the nearest tenth between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures for more than 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

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

Other Records Available

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

Records of Surface-Water Quality

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

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications.

A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station where random samples are collected to give better areal coverage to define water-quality conditions in the river basin. A careful distinction needs to be made between “continuing records,” as used in this report, and “continuous recordings,” which refers to a continuous graph or a series of discrete values obtained by data logger. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently.

Arrangement of Records

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

On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in

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

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

Procedures for on-site measurements and for collecting, treating, and shipping samples are given in publications on “Techniques of Water-Resources Investigations,” Book 1, Chap. D2; Book 3, Chap. A1, A3, and A4; Book 9, Chap. A1-A9. All of these references are listed under “PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS” which appears at the end of the introductory text. Detailed information on collecting, treating, and shipping samples may be obtained from the Texas Office of the Central Region Office.

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

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

Detailed information on sampling methods may be found in the following publications: OFR-90-127 “Guidelines for Col-

lection and Analysis of Water-Quality Samples from Streams in Texas”, OFR-94-455 “Field Guide for Collecting and Processing Stream-Water Samples for the National Water-Quality Assessment Program”, and OFR-94-539 “U.S. Geological Survey protocol for the collection and processing of surface-water samples for the subsequent determination of inorganic constituents in filtered water”. Specific questions pertaining to water-quality sample collection may be directed to the District Water-Quality Specialist in Austin, Texas, or the Regional Water-Quality Specialist in Denver, Colorado.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis.

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

Water Temperature

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

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

Sediment

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

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow

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

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

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

Laboratory Measurements

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

Historical and current (2001) 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 in the U.S. Geological Survey's distributed data system, NWIS, and subsequently to its web-based National data system, NWISWeb [<http://water.usgs.gov/nwis/nwis>]. 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 NWIS or NWISWeb to ensure the most recent updates. Updates to NWISWeb are currently made on an annual basis.

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 Code
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
V	Analyte was detected in both the environmental sample and the associated blanks
M	Presence of material verified but not quantified

Printed Output	Value-Qualifier Code
d	Diluted sample: method hi range exceeded
v	Analyte detected in laboratory blank
q	Insufficient sample received
i	Result may be affected by interference
b	Value was extrapolated below
n	Below the NVD
r	Value verified by rerun, same method
p	Value reported is preferred
c	See laboratory comment
e	See field comment
k	Counts outside the acceptable range

Printed Output	Null Value-Qualifier Code
e	Required equipment not functional or available
i	Required sample type not received
r	Sample ruined in preparation
u	Unable to determine - matrix interference

Dissolved Trace-Element Concentrations

***NOTE:**--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter ($\mu\text{g/L}$) 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 $\mu\text{g/L}$ level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contami-

nation 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 Program Office, Illinois State Water Survey, 2204 Griffith Drive, Champaign, IL 61820-7495 (217-333-7873).

Water-Quality Control Data

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

Blank Samples

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

Source solution blank – a blank solution that is transferred to a sample bottle in an area of the office laboratory with an atmosphere that is relatively clean and protected with respect to target analytes.

Ambient blank – a blank solution that is put in the same type of bottle used for an environmental sample, kept with the set of sample bottles before sample collection, and opened at the site and exposed to the ambient conditions.

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

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

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

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

Pump blank – a blank solution that is processed through the same pump-and-tubing system used for an environmental sample.

Standpipe blank – a blank solution that is poured from the containment vessel (stand-pipe) before the pump is inserted to obtain the pump blank.

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

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

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

Canister blank – a blank solution that is taken directly from a stainless steel canister just before the VOC sampler is submerged to obtain a field blank sample.

Reference Samples

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

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. There are many types

of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this District are:

Concurrent sample – a type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating collection of samples into two or more compositing containers.

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

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

Spike Samples

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

Concurrent sample – a type of spike sample that is collected at the same time with the same sampling and compositing devices then spiked with the same spike solution containing laboratory-certified concentrations of selected analytes.

Split sample – a type of spike sample in which a sample is split into subsamples contemporaneous in time and space then spiked with the same spike solution containing laboratory-certified concentrations of selected analytes.

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (www). These data may be accessed at <http://tx.usgs.gov>

Some water-quality and ground-water data also are available through the www. In addition, data can be provided in various machine-readable formats on magnetic tape, 3-1/2 inch floppy disk or CD-ROM. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (See address on the back of the title page.)

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Definitions of common terms such as algae, water level, and precipitation are given in standard dictionary.

ies. Not all terms defined in this alphabetical list apply to every State. See also table for converting inch/pound units to International System (SI) units on the inside of the back cover.

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

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also “Annual runoff”)

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

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. (See also “Biomass” and “Dry weight”)

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

Annual runoff is the total quantity of water that is discharged (“runs off”) from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. 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.)

Aroclor is the registered trademark for a group of polychlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered

aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

Artificial substrate is a device that 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 collected. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection. (See also “Substrate”)

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. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2). (See also “Biomass” and “Dry mass”)

Aspect is the direction toward which a slope faces with respect to the compass.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, whereas 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.

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also “Peak flow”)

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bedload is material in transport that is supported primarily by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to an elevation equal to the top of the bedload sampler nozzle (ranging from 0.25 to 0.5 foot) that are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

Bedload discharge (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be neces-

sary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also “Bedload,” “Dry weight,” “Sediment,” and “Suspended-sediment discharge”)

Bed material is the sediment mixture of which a stream-bed, lake, pond, reservoir, or estuary bottom is composed. (See also “Bedload” and “Sediment”)

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

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

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

Biomass pigment ratio is an indicator of the total proportion of periphyton that are autotrophic (plants). This is also called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) 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. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample. (See also “Phytoplankton”)

Bottom material (See “Bed material”)

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved solids content of the pore water and lithology and porosity of the rock.

Cells/volume refers to the number of cells of any organism that 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 volume, and are generally reported as cells or units per milliliter (mL) or liter (L).

Cells volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of

their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

sphere $\frac{4}{3} \pi r^3$ cone $\frac{1}{3} \pi r^2 h$ cylinder $\pi r^2 h$.

pi (π) is the ratio of the circumference to the diameter of a circle; $\pi = 3.14159\dots$

From cell volume, total algal biomass expressed as biovolume ($\mu\text{m}^3/\text{mL}$) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

Cfs-day (See “Cubic foot per second-day”)

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also “Biochemical oxygen demand (BOD)”]

***Clostridium perfringens* (*C. perfringens*)** is a spore-forming bacterium that is common in the feces of human and other warmblooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and presence of microorganisms that are resistant to disinfection and environmental stresses. (See also “Bacteria”)

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

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.

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

Control designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be

a constriction of the channel, a bedrock outcrop, a gravel bar, 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 saltwater.

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term “second-foot” sometimes is used synonymously with “cubic foot per second” but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, $[(\text{ft}^3/\text{s})/\text{d}]$) 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, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables are numerically equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

Cubic foot per second per square mile [CFSM, $(\text{ft}^3/\text{s})/\text{mi}^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also “Annual runoff”)

Daily mean suspended-sediment concentration is the time-weighted concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also “Sediment” and “Suspended-sediment concentration”)

Daily-record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to periodic sample or data collection on a daily or near-daily basis.

Data collection platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data are usually downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or UTM coordinates. (See also “Gage datum,” “Land-surface datum,” “National Geodetic Vertical Datum of 1929,” and “North American Vertical Datum of 1988”)

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. (See also “Phytoplankton”)

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or flow, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, etc., within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of “dissolved” constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved-solids concentration in water is the quantity of dissolved material in a sample of water. It 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, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L CaCO_3) can be converted to carbonate concentration by multiplying by 0.60.

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

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

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth’s surface that contains a drainage system with a common outlet for its surface runoff. (See “Drainage area”)

Dry mass refers to the mass of residue present after drying in an oven at 105 °C, 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. (See also “Ash mass,” “Biomass,” and “Wet mass”)

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65 °C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also “Wet weight”)

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also “Substrate embeddedness class”)

Enterococcus bacteria are commonly found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus fecalis*, *Streptococcus fecium*, *Streptococcus avium*, and their variants. (See also “Bacteria”)

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that are generally considered pollution sensitive; the index usually decreases with pollution.

Escherichia coli (*E. coli*) are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing

for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Estimated (E) concentration value is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an ‘E’ code will be reported with the value. If the analyte is qualitatively identified as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an ‘E’ code even though the measured value is greater than the MDL. A value reported with an ‘E’ code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<).

Euglenoids (*Euglenophyta*) are a group of algae that are usually free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also “Phytoplankton”)

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

Fecal coliform bacteria are present in the intestines or feces of warmblooded animals. They often are 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 plus or minus 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. (See also “Bacteria”)

Fecal streptococcal bacteria are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 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. (See also “Bacteria”)

Fire algae (*Pyrrophyta*) are free-swimming unicells characterized by a red pigment spot. (See also “Phytoplankton”)

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum itself is not an actual physical object, the datum usually is defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term “stage,” although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

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

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

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. (See also “Phytoplankton”)

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat are typically made over a wider geographic scale than are measurements of species distribution.

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with

higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

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

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. See NOAA web site:

<http://www.co-ops.nos.noaa.gov/tideglos.html>

Hilsenhoff's Biotic Index (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = \sum \frac{(n)(a)}{N},$$

where n is the number of individuals of each taxon, a is the tolerance value of each taxon, and N is the total number of organisms in the sample.

Horizontal datum (See "Datum")

Hydrologic index stations referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

Inch (IN., in.), as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were uniformly distributed on it. (See also "Annual runoff")

Instantaneous discharge is the discharge at a particular instant of time. (See also "Discharge")

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year on average, and remains stable except during large flood events.

Laboratory reporting level (LRL) is generally equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent.

The value of the LRL will be reported with a "less than" (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. [Note: In several previous NWQL documents (NWQL Technical Memorandum 98.07, 1998), the LRL was called the nondetection value or NDV—a term that is no longer used.]

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

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L},$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L} \log_e \frac{I}{I_o}.$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-term method detection level (LT-MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. See NOAA web site:

<http://www.co-ops.nos.noaa.gov/tideglos.html>

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also “Daily mean suspended-sediment concentration” and “Suspended-sediment concentration”)

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period. (See also “Discharge”)

Mean high or low tide is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also “Datum”)

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

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

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

Method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

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 (UG/G, $\mu\text{g/g}$) is a unit expressing the concentration of a chemical constituent as the mass (micro-

grams) of the element per unit mass (gram) of material analyzed.

Micrograms per kilogram (UG/KG, $\mu\text{g/kg}$) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, $\mu\text{g/L}$) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

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

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

Minimum reporting level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

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

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

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It was formerly called “Sea Level Datum of 1929” or “mean sea level.” Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea level at any particular place. See NOAA web site: <http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88> (See “North American Vertical Datum of 1988”)

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also “Substrate”)

Nekton are the consumers in the aquatic environment and consist of large free-swimming organisms that are capable of sustained, directed mobility.

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

North American Vertical Datum of 1988 (NAVD 1988) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian, Mexican, and United States first-order terrestrial leveling networks.

Open or screened interval is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

Organic mass or volatile mass of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also “Ash mass,” “Biomass,” and “Dry mass”)

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 (m²), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

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

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter code is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method utilizes the principle of Stokes law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) 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, as used in this report, agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, 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.

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be

the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

Percent composition or percent of total 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, weight, mass, or volume.

Percent shading is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

Periodic-record station is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

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

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

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed "acidic," and solutions with a pH greater than 7.0 are termed "basic." Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

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 commonly are known as algae. (See also "Plankton")

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is

the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

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.

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

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 (carbon method) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [$\text{mg C}/(\text{m}^2/\text{time})$] for periphyton and macrophytes or per volume [$\text{mg C}/(\text{m}^3/\text{time})$] for phytoplankton. The carbon method defines 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 with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [$\text{mg O}/(\text{m}^2/\text{time})$] for periphyton and macrophytes or per volume [$\text{mg O}/(\text{m}^3/\text{time})$] for phytoplankton. The oxygen method defines 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. (See also "Primary productivity")

Radioisotopes are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms

of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

Recoverable from bed (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. (See also "Bed material")

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the $7Q_{10}$ occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance

of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (See "Recurrence interval")

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

Runoff is the quantity of water that is discharged ("runs off") from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also "Annual runoff")

Sea level, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988).

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as "fluvial sediment." Sediment 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 affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of pre-cipitation.

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

Seven-day, 10-year low flow ($7Q_{10}$) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the $7Q_{10}$ is 10 years; the chance that the annual 7-day minimum flow will be less than the $7Q_{10}$ is 10 percent in any given year. (See also "Annual 7-day minimum" and "Recurrence interval")

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

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. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stable isotope ratio (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (See “Gage height”)

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

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.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

Surface area of a lake is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

Surficial bed material is the upper surface (0.1 to 0.2 foot) 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 defined operationally as 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 suspended water-sediment sample that is retained on a 0.45-micrometer 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 directly analyzing the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also “Suspended”)

Suspended sediment is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (See also “Sediment”)

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 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also “Sediment” and “Suspended sediment”)

Suspended-sediment discharge (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge

(ft³/s) x 0.0027. (See also “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also “Sediment”)

Suspended, total is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. 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 directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also “Suspended”)

Suspended solids, total residue at 105 °C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

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

Taxa (Species) richness is the number of species (taxa) present in a defined area or sampling unit.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical 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:	<i>Hexagenia</i>
Species:	<i>Hexagenia limbata</i>

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term “temperature recorder” is used in the table descriptions 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 resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (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, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

Total is the amount of a given constituent in a representative whole-water (unfiltered) 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 at least 95 percent of the constituent in the sample.)

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warm-blooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliters of sample. (See also “Bacteria”)

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other

than water, this term needs to be qualified, such as “total sediment discharge,” “total chloride discharge,” and so on.

Total in bottom material is the amount of a given constituent in a representative sample of bottom material. 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 judge when the results should be reported as “total in bottom material.”

Total length (fish) is the straight-line distance from the anterior point of a fish specimen’s snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total organism count is the number of organisms collected and enumerated in any particular sample. (See also “Organism count/volume”)

Total recoverable is the amount of a given constituent in a whole-water sample after a 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 for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also “Bedload,” “Bedload discharge,” “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

Total sediment load or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also “Sediment,” “Suspended-sediment load,” and “Total load”)

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along

the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

Turbidity is the reduction in the transparency of a solution due to the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to U.S. EPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of pathlength of UV light through a sample.

Unconfined aquifer is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See “Water-table aquifer”)

Vertical datum (See “Datum”)

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

Water table is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which the water table is found.

Water year in USGS 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, 2002, is called the “2002 water year.”

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

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

Wet mass is the mass of living matter plus contained water. (See also “Biomass” and “Dry mass”)

Wet weight refers to the weight of animal tissue or other substance including its contained water. (See also “Dry weight”)

WSP is used as an acronym for “Water-Supply Paper” in reference to previously published reports.

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

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

The USGS publishes a series of manuals titled the “Techniques of Water-Resources Investigations” that describe procedures for planning and conducting specialized work in water-resources investigations. The material in these manuals 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. Each chapter then is limited to a narrow field of the section subject matter. This publication format permits flexibility when revision or printing is required.

Manuals in the Techniques of Water-Resources Investigations series, which are listed below, are available online at <http://water.usgs.gov/pubs/twri/>. Printed copies are available for sale from the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (an authorized agent of the Superinten-

dent of Documents, Government Printing Office). Please telephone “1-888-ASK-USGS” for current prices, and refer to the title, book number, section number, chapter number, and mention the “U.S. Geological Survey Techniques of Water-Resources Investigations.” Other products can be viewed online at <http://www.usgs.gov/sales.html>, or ordered by telephone or by FAX to (303)236-4693. Order forms for FAX requests are available online at <http://mac.usgs.gov/isb/pubs/forms/>. Prepayment by major credit card or by a check or money order payable to the “U.S. Geological Survey” is required.

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

- 1–D1. *Water temperature—Influential factors, field measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS–TWRI book 1, chap. 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, chap. D2. 1976. 24 p.

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

- 2–D1. *Application of surface geophysics to ground-water investigations*, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS–TWRI book 2, chap. D1. 1974. 116 p.
- 2–D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS–TWRI book 2, chap. D2. 1988. 86 p.

Section E. Subsurface Geophysical Methods

- 2–E1. *Application of borehole geophysics to water-resources investigations*, by W.S. Keys and L.M. MacCary: USGS–TWRI book 2, chap. E1. 1971. 126 p.
- 2–E2. *Borehole geophysics applied to ground-water investigations*, by W.S. Keys: USGS–TWRI book 2, chap. E2. 1990. 150 p.

Section F. Drilling and Sampling Methods

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

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

- 3–A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS–TWRI book 3, chap. 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, chap. A2. 1967. 12 p.
- 3–A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS–TWRI book 3, chap. A3. 1968. 60 p.
- 3–A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS–TWRI book 3, chap. A4. 1967. 44 p.
- 3–A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS–TWRI book 3, chap. A5. 1967. 29 p.

- 3–A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS–TWRI book 3, chap. A6. 1968. 13 p.
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- 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, chap. A9. 1989. 27 p.
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Section A. National Field Manual for the Collection of Water-Quality Data

- 9–A1. *National field manual for the collection of water-quality data: Preparations for water sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.
- 9–A2. *National field manual for the collection of water-quality data: Selection of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.
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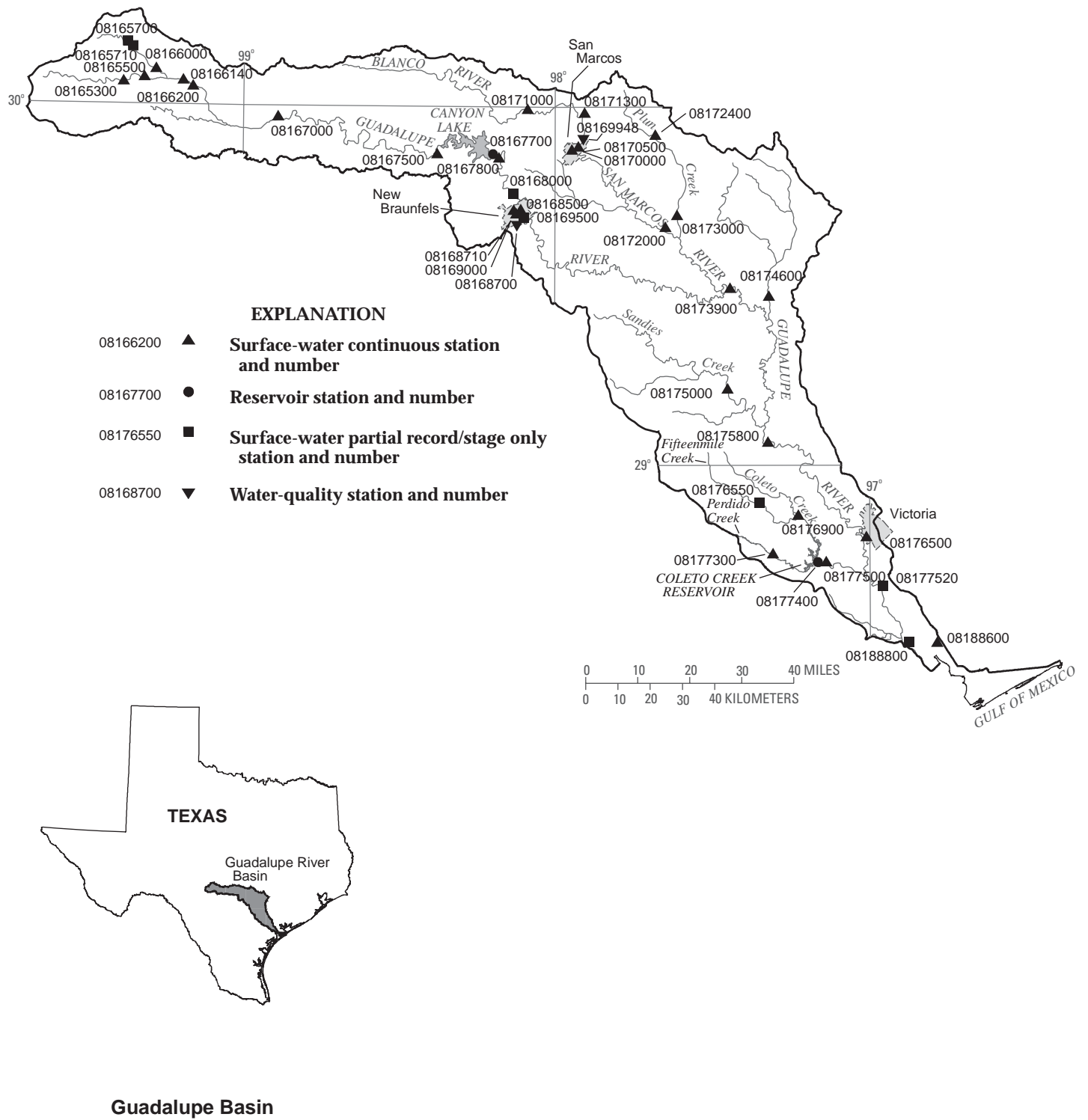


Figure 3.--Map showing location of gaging stations in the Guadalupe River Basin

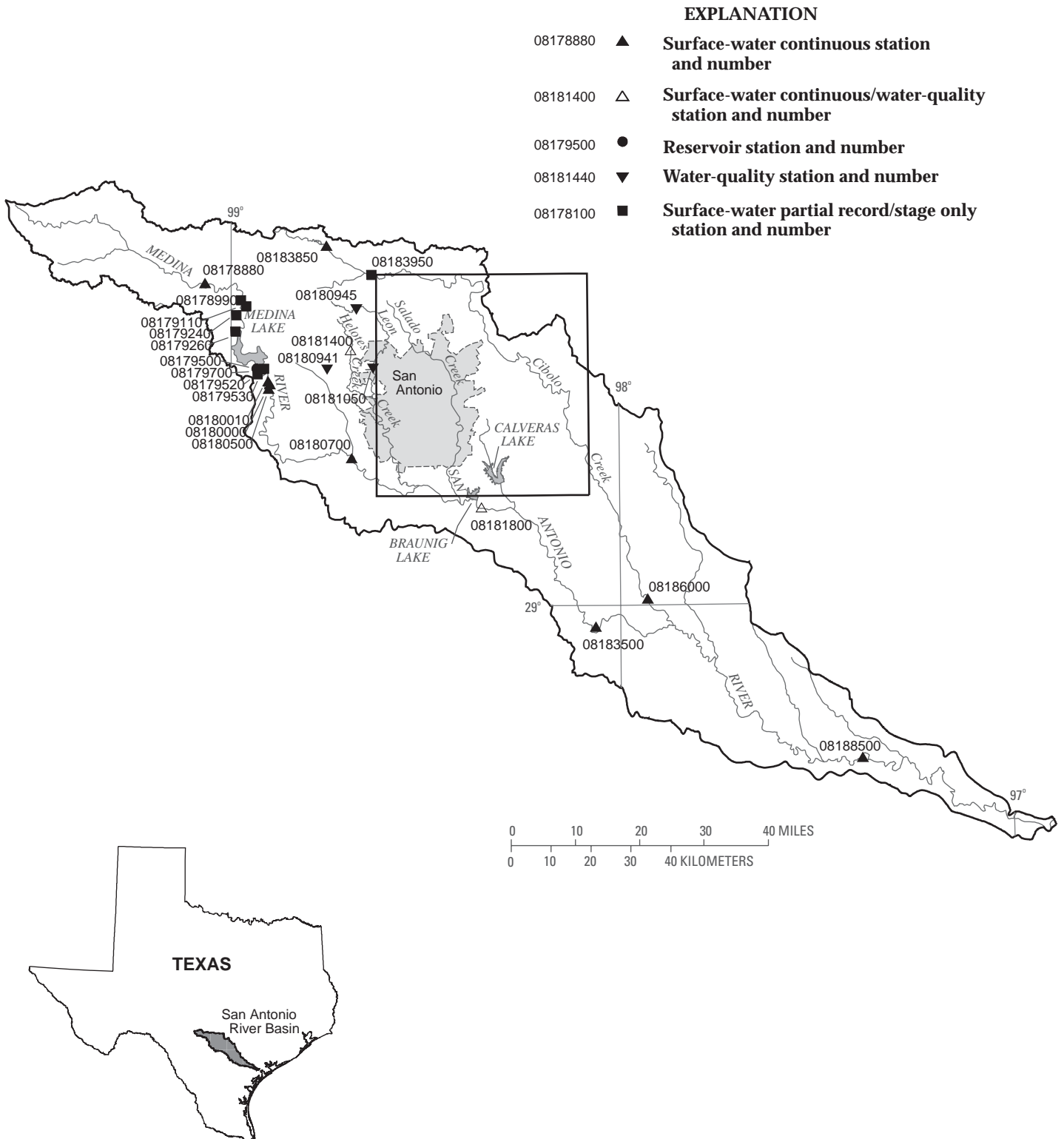
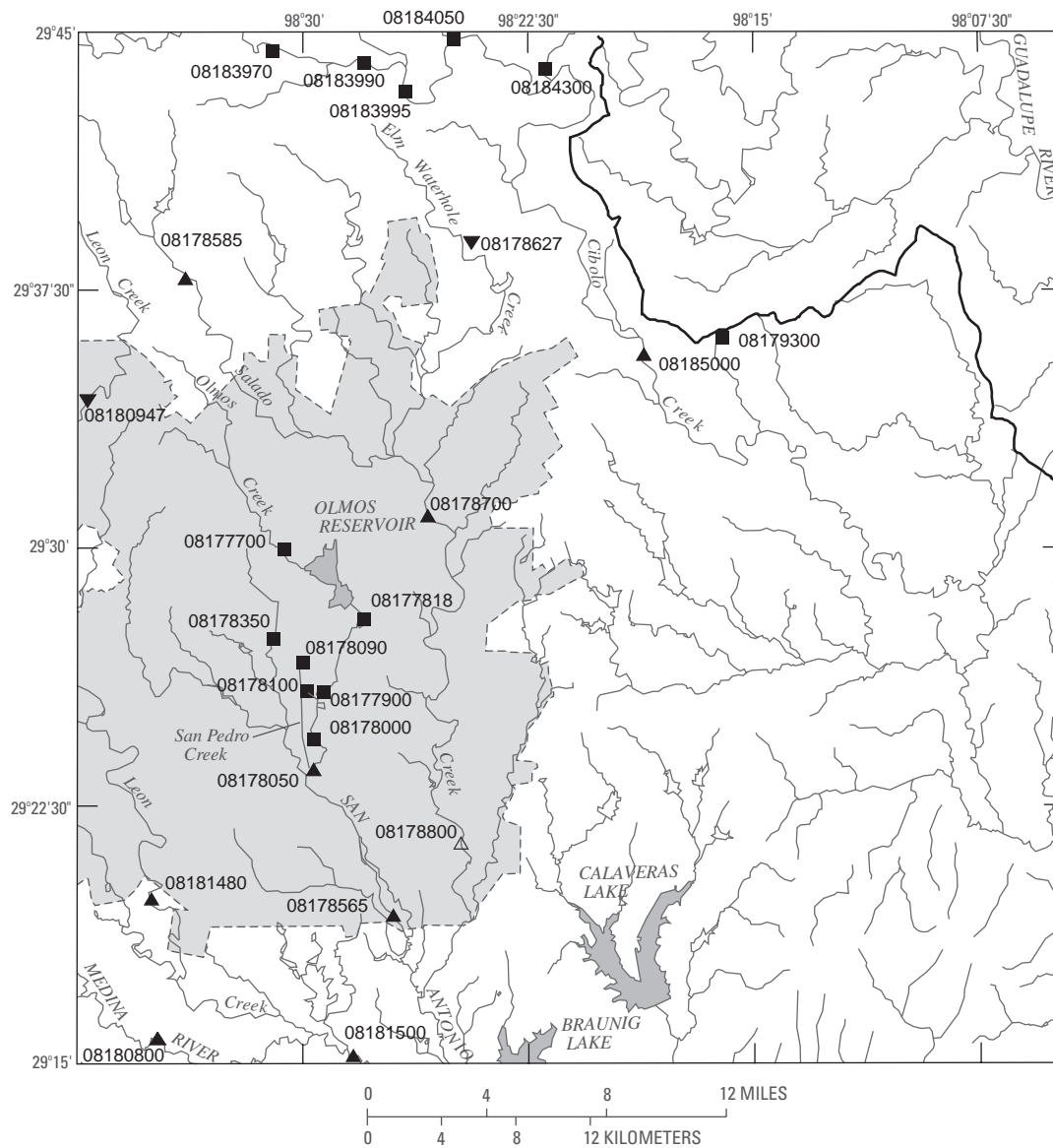


Figure 4.--Map showing location of gaging stations in the San Antonio River Basin



EXPLANATION

- 08178050 ▲ Surface-water continuous station and number
- 08180800 △ Surface-water continuous/water-quality station and number
- 08178100 ■ Surface-water partial record/stage only station and number
- 08180947 ▼ Water-quality station and number

Figure 5.--Map showing location of gaging stations in the San Antonio inset of the San Antonio River Basin

08165300	North Fork Guadalupe River near Hunt, TX	38
08165500	Guadalupe River at Hunt, TX	40
08165700	Welch Springs near Mountain Home, TX	374
08165710	Fessenden Springs near Mountain Home, TX	374
08166000	Johnson Creek near Ingram, TX	42
08166140	Guadalupe River above Bear Creek at Kerrville, TX	44
08166200	Guadalupe River at Kerrville, TX	46
08167000	Guadalupe River at Comfort, TX	48
08167500	Guadalupe River near Spring Branch, TX	50
08167700	Canyon Lake near New Braunfels, TX	52
08167800	Guadalupe River at Sattler, TX	54
08168000	Hueco Springs near New Braunfels, TX	371
08168500	Guadalupe River above Comal River at New Braunfels, TX	56
08168700	Panther Canyon at New Braunfels, TX	58
08168710	Comal Springs at New Braunfels, TX	60
08169000	Comal River at New Braunfels, TX	62
08169500	Guadalupe River at New Braunfels, TX	64
08169948	San Marcos River Tributary at Sessions Rd., San Marcos, TX	66
08170000	San Marcos Springs at San Marcos, TX	68
08170500	San Marcos River at San Marcos, TX	70
08171000	Blanco River at Wimberley, TX	72
08171300	Blanco River near Kyle, TX	74
08172000	San Marcos River at Luling, TX	76
08172400	Plum Creek at Lockhart, TX	78
08173000	Plum Creek near Luling, TX	80
08173900	Guadalupe River at Gonzales, TX	82
08174600	Peach Creek below Dilworth, TX	84
08175000	Sandies Creek near Westhoff, TX	86
08175800	Guadalupe River at Cuero, TX	88
08176500	Guadalupe River at Victoria, TX	90
08176550	Fifteenmile Creek near Weser, TX	92
08176900	Coleta Creek at Arnold Road Crossing near Schroeder, TX	94
08177300	Perdido Creek at Farm to Market Road 622 near Fannin, TX	96
08177400	Coleta Creek Reservoir near Victoria, TX	98
08177500	Coleta Creek near Victoria, TX	100
08177520	Guadalupe River near Bloomington, TX	102
08177700	Olmos Creek at Dresden Drive, San Antonio, TX	104
08177818	San Antonio Springs at San Antonio, TX	371
08177900	San Antonio River at Navarro Street, San Antonio, TX	373
08178000	San Antonio River at San Antonio, TX	106
08178050	San Antonio River at Mitchell Street, San Antonio, TX	108
08178090	San Pedro Springs at San Antonio, TX	371
08178100	San Pedro Creek at Santa Rosa Street, San Antonio, TX	373
08178350	Martinez Creek at Fredericksburg Road, San Antonio, TX	373
08178565	San Antonio River at Loop 410, San Antonio, TX	110
08178585	Salado Creek at Wilderness Road at San Antonio, TX	112
08178627	Elm Waterhole Creek Tributary at San Antonio, TX	114
08178700	Salado Creek at Loop 410 at San Antonio, TX	118
08178800	Salado Creek at Loop 13 at San Antonio, TX	120
08178880	Medina River at Bandera, TX	126
08178990	Medina River at English Crossing near Pipe Creek, TX	374
08179110	Red Bluff Creek near Pipe Creek, TX	374
08179240	Bruins Creek near Pipe Creek, TX	375
08179260	Rocky Creek near Pipe Creek, TX	375
08179300	Elm Creek near Pipe Creek, TX	375
08179500	Medina Lake near San Antonio, TX	128
08179520	Medina River below Medina Lake, TX	130
08179530	Koenig Creek near Riomedina, TX	375
08179700	Nesbit Springs at Mico, TX	375

08180000	Medina Canal near Riomedina, TX	132
08180010	Diversion Lake near Riomedina, TX	134
08180500	Medina River at Riomedina, TX	138
08180700	Medina River near Macdona, TX	140
08180800	Medina River near Somerset, TX	148
08180941	Government Canyon Creek Site 2 near Helotes, TX	150
08180945	Leon Creek at Scenic Loop Road near Leon Springs, TX	152
08180947	Leon Creek at Hausman Road at San Antonio, TX	154
08181050	Leon Creek at Prue Road at San Antonio, TX	158
08181400	Helotes Creek at Helotes, TX	162
08181480	Leon Creek at Interstate Highway 35 at San Antonio, TX	166
08181500	Medina River at San Antonio, TX	168
08181800	San Antonio River near Elemendorf, TX	170
08183500	San Antonio River near Falls City, TX	184
08183850	Cibolo Creek at Interstate Highway 10 above Boerne, TX	186
08183950	Cibolo Creek at Ralph Fair Road below Boerne, TX	376
08183970	Cibolo Creek at Blanco Road above Bulverde, TX	376
08183990	Cibolo Creek at Bulverde Road near Bulverde, TX	376
08183995	Cibolo Creek at U.S. Highway 281 near Bulverde, TX	376
08184050	Cibolo Creek at Smithson Valley Road near Bulverde, TX	376
08184300	Cibolo Creek at Farm Road 1863 below Bulverde, TX	376
08185000	Cibolo Creek at Selma, TX	188
08186000	Cibolo Creek near Falls City, TX	190
08188500	San Antonio River at Goliad, TX	192
08188600	GBRA Calhoun Canal Pump Station near Long Mott, TX	194
08188800	Guadalupe River near Tivoli, TX	196

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GUADALUPE RIVER BASIN

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.--Aug. 1967 to current year. Low-flow records not equivalent prior to Jun. 7, 1989 because of undetermined channel flow loss between present and former site 0.58 mi upstream.

REVISED RECORDS.--WRD TX-74-1: 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 1,800.10 ft above NGVD of 1929. Prior to Jun. 7, 1989, at site 0.58 mi upstream at same datum. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 occurred Jul. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	28	70	49	40	39	35	28	e30	31	36	32
2	25	28	71	48	39	38	36	28	e31	31	37	32
3	24	27	68	48	39	36	36	27	e30	19	36	31
4	24	27	67	49	39	35	35	27	e29	41	36	31
5	22	29	65	48	41	37	36	27	e30	1180	35	30
6	24	29	68	45	41	37	36	28	e31	e230	36	30
7	24	28	63	47	39	37	37	24	e31	e120	35	31
8	24	28	75	47	38	37	38	23	e30	e91	35	35
9	24	31	64	47	37	36	39	25	e30	e81	36	38
10	26	30	63	47	36	35	39	24	e29	e74	36	34
11	26	30	63	46	37	36	37	23	e29	e65	37	34
12	24	30	60	44	38	37	37	23	e28	e58	36	32
13	27	29	60	44	38	35	34	23	e27	e57	36	31
14	26	31	59	45	38	35	38	23	e26	e58	35	31
15	26	6250	59	44	40	37	35	31	e27	e64	35	31
16	26	759	60	43	39	37	33	38	e27	e56	34	31
17	26	162	57	45	38	36	32	43	e26	e56	34	31
18	25	115	56	44	38	36	31	e100	e25	e53	34	31
19	25	103	57	44	37	32	30	e40	e25	e50	33	30
20	25	97	57	43	37	34	29	e34	e26	e47	33	28
21	25	91	53	42	38	32	29	e33	27	e44	32	30
22	27	87	51	42	36	30	30	e31	27	e41	32	30
23	26	84	53	42	38	30	29	e30	26	e38	32	32
24	25	81	52	42	38	30	29	e31	26	38	32	32
25	24	79	52	40	37	29	29	e30	26	38	32	31
26	26	78	53	38	36	29	29	e30	26	38	32	31
27	27	76	54	39	37	29	29	e28	30	37	32	31
28	26	74	52	42	38	30	29	e32	29	37	31	31
29	26	72	50	43	---	32	29	e30	26	38	31	31
30	27	71	50	42	---	34	28	e29	28	38	33	30
31	28	---	49	42	---	36	---	e29	---	37	33	---
TOTAL	785	8684	1831	1371	1067	1063	993	972	838	2886	1057	943
MEAN	25.32	289.5	59.06	44.23	38.11	34.29	33.10	31.35	27.93	93.10	34.10	31.43
MAX	28	6250	75	49	41	39	39	100	31	1180	37	38
MIN	22	27	49	38	36	29	28	23	25	19	31	28
AC-FT	1560	17220	3630	2720	2120	2110	1970	1930	1660	5720	2100	1870
CFSM	0.15	1.71	0.35	0.26	0.23	0.20	0.20	0.19	0.17	0.55	0.20	0.19
IN.	0.17	1.91	0.40	0.30	0.23	0.23	0.22	0.21	0.18	0.64	0.23	0.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

MEAN	69.36	42.44	42.79	32.01	30.70	29.93	39.35	41.56	42.67	40.55	51.56	38.30
MAX	529	289	296	113	108	144	351	149	278	465	452	198
(WY)	1986	2002	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 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1967 - 2002

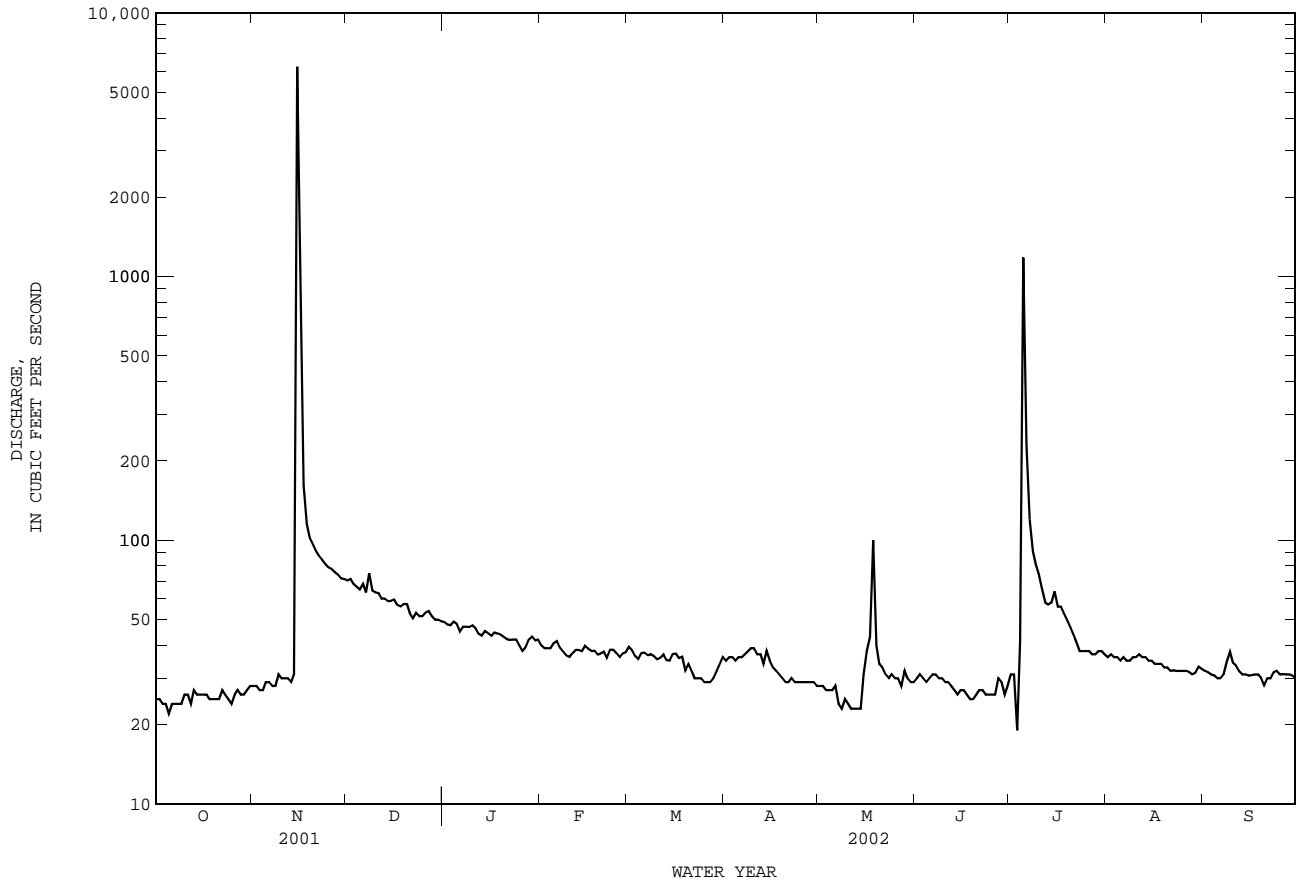
ANNUAL TOTAL	20410	22490	
ANNUAL MEAN	55.92	61.62	42.01
HIGHEST ANNUAL MEAN			103 1987
LOWEST ANNUAL MEAN			13.4 1984
HIGHEST DAILY MEAN	6250 Nov 15	6250 Nov 15	14900 Oct 19 1985
LOWEST DAILY MEAN	19 Aug 13	19 Jul 3	6.6 May 30 1969
ANNUAL SEVEN-DAY MINIMUM	20 Aug 9	23 May 8	8.3 Jun 7 1971
MAXIMUM PEAK FLOW		21400 Nov 15	c57000 Oct 19 1985
MAXIMUM PEAK STAGE		12.58 Nov 15	a29.81 Oct 19 1985
ANNUAL RUNOFF (AC-FT)	40480	44610	30430
ANNUAL RUNOFF (CFSM)	0.33	0.36	0.25
ANNUAL RUNOFF (INCHES)	4.49	4.95	3.38
10 PERCENT EXCEEDS	57	61	49
50 PERCENT EXCEEDS	31	35	24
90 PERCENT EXCEEDS	21	26	15

e Estimated

c From rating curve extended above indirect measurement of 39,000 ft³/s.

a From floodmark.

08165300 North Fork Guadalupe River near Hunt, TX--Continued



GUADALUPE RIVER BASIN

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.--Oct. 1941 to Sept. 1949 (daily mean discharge below base), Apr. 1965 to current year. Periodic discharge measurements made 1950-64.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,722.70 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There are numerous diversions for irrigation above station, amounts unknown.

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).

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	48	118	89	76	69	54	44	46	63	79	58
2	47	47	123	87	57	68	54	40	46	853	74	57
3	47	47	117	84	66	66	53	40	46	213	73	56
4	47	48	110	87	71	65	51	43	44	1810	76	56
5	46	47	110	88	68	64	52	39	45	6130	71	56
6	50	49	110	82	70	65	53	42	46	599	72	56
7	50	49	110	84	60	64	56	35	47	279	70	63
8	50	49	136	85	68	64	58	36	46	211	71	80
9	49	55	113	87	65	64	55	40	43	184	72	90
10	50	53	106	85	63	61	54	40	42	159	73	76
11	74	49	108	83	62	62	52	39	42	140	71	69
12	55	48	109	82	68	70	52	40	40	121	67	68
13	78	48	106	83	64	63	51	39	40	119	66	66
14	62	53	103	82	63	58	69	39	39	125	64	64
15	57	8400	103	83	63	59	64	39	39	151	62	63
16	54	4420	108	85	66	60	66	41	39	125	61	63
17	53	501	101	81	64	59	58	48	38	124	60	63
18	54	282	100	91	64	59	55	191	38	118	60	64
19	52	225	100	81	64	61	53	62	38	111	61	63
20	53	197	102	77	62	67	52	53	39	105	60	60
21	54	176	97	78	64	64	51	52	39	97	57	59
22	55	164	95	78	62	55	50	50	39	90	56	59
23	58	153	96	77	63	54	48	47	38	83	56	59
24	54	145	96	79	66	62	45	48	36	84	56	62
25	54	137	93	77	66	59	48	47	35	81	57	61
26	55	137	94	72	64	57	48	47	36	77	56	61
27	53	139	94	73	64	55	48	46	45	73	55	62
28	49	130	93	71	66	50	49	57	50	73	55	61
29	48	126	93	64	---	54	62	53	42	72	56	59
30	49	122	90	81	---	59	49	51	49	78	59	61
31	50	---	89	81	---	54	---	49	---	79	58	---
TOTAL	1654	16144	3223	2517	1819	1891	1610	1537	1252	12627	1984	1895
MEAN	53.35	538.1	104.0	81.19	64.96	61.00	53.67	49.58	41.73	407.3	64.00	63.17
MAX	78	8400	136	91	76	70	69	191	50	6130	79	90
MIN	46	47	89	64	57	50	45	35	35	63	55	56
AC-FT	3280	32020	6390	4990	3610	3750	3190	3050	2480	25050	3940	3760

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)

	MEAN	113.5	83.22	73.15	61.53	62.33	63.27	74.60	84.07	80.89	85.15	104.0	69.76
MAX	677	538	322	151	213	257	570	286	551	956	992	312	
(WY)	1986	2002	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

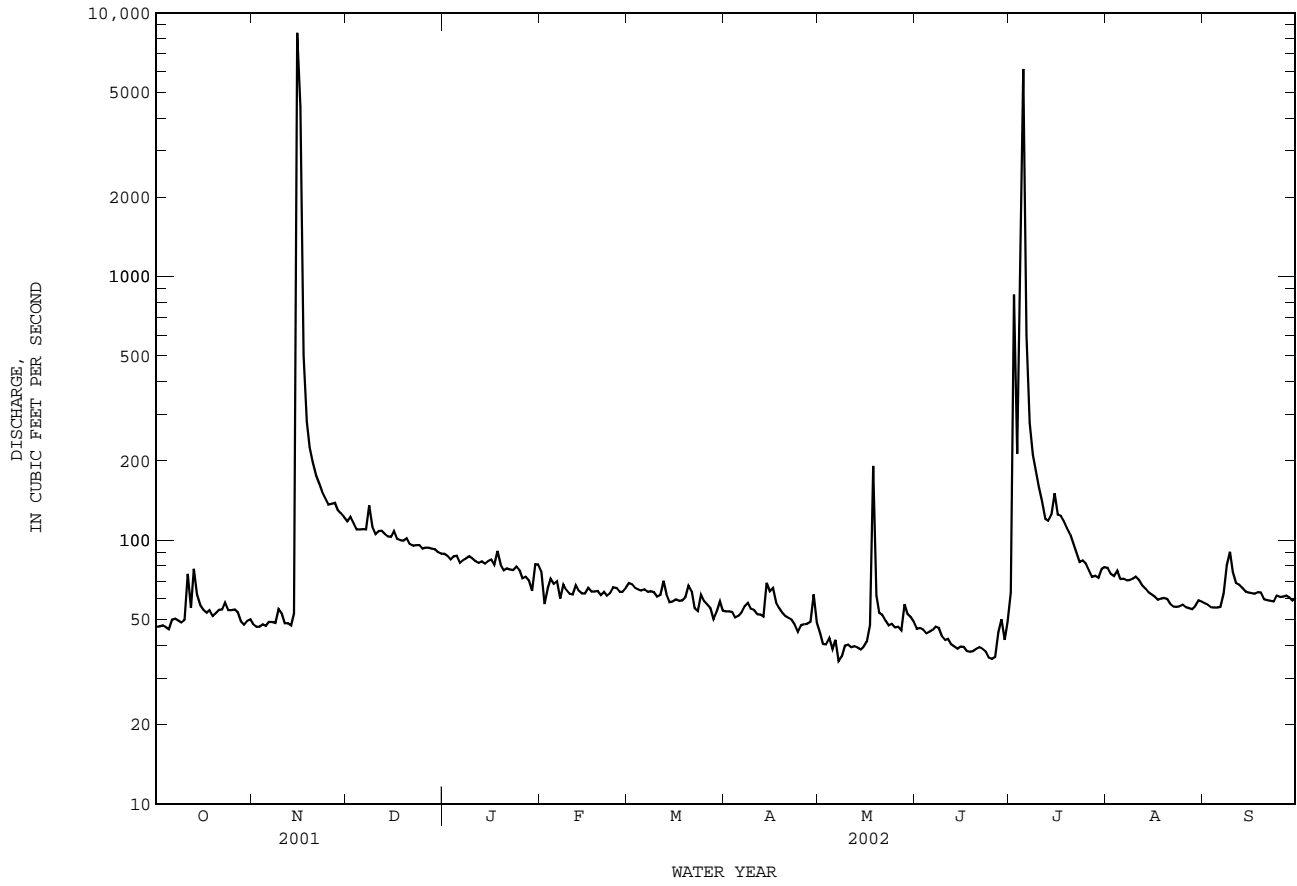
FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1965 - 2002

ANNUAL TOTAL	38609	48153	
ANNUAL MEAN	105.8	131.9	80.16
HIGHEST ANNUAL MEAN			223
LOWEST ANNUAL MEAN			27.6
HIGHEST DAILY MEAN	8400	Nov 15	22200
LOWEST DAILY MEAN	30	Aug 13	8.2
ANNUAL SEVEN-DAY MINIMUM	30	Aug 10	37
MAXIMUM PEAK FLOW			25200
MAXIMUM PEAK STAGE			17.77
ANNUAL RUNOFF (AC-FT)	76580	95510	58070
10 PERCENT EXCEEDS	102	118	97
50 PERCENT EXCEEDS	69	62	49
90 PERCENT EXCEEDS	34	45	29

08165500 Guadalupe River at Hunt, TX--Continued



GUADALUPE RIVER BASIN

08166000 Johnson Creek near Ingram, TX

LOCATION.--Lat 30°06'00", long 99°16'58", Kerr County, Hydrologic Unit 12100201, on right bank 1.6 mi upstream from Henderson Branch, 3.4 mi northwest of Ingram, 3.8 mi upstream from mouth, and 9.2 mi northwest of Kerrville.

DRAINAGE AREA.--114 mi².

PERIOD OF RECORD.--Oct. 1941 to Nov. 1959, Oct. 1961 to Sept. 1993, Apr. 1999 to current year.
Water quality records.--Chemical data: June 1952 to July 1966.

REVISED RECORDS.--WSP 1058: 1942-45. WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,721.30 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation. There are numerous small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 35 ft July 2, 1932, from information by local resident: discharge 138,000 ft³/s, by slope-area measurement at point 0.5 mi downstream from the Heart of the Hills State Fish Hatchery and 6 or 7 mi upstream from gage. Flood of June 14, 1935 reached a stage of 31 or 32 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	21	43	35	33	28	26	22	16	44	30	e28
2	24	21	45	34	32	28	27	22	14	e70	28	e27
3	24	21	44	34	32	27	26	21	13	e140	22	e28
4	24	20	42	35	32	28	25	22	11	e300	23	e28
5	23	20	40	35	34	28	25	23	9.8	3020	25	e27
6	24	20	39	32	34	28	25	22	9.3	199	26	e27
7	23	20	40	31	32	28	25	21	12	e168	23	e27
8	23	20	54	33	30	28	24	21	12	e140	24	e28
9	25	24	40	31	30	27	23	21	11	e120	25	e28
10	25	20	38	34	29	27	24	21	9.7	e105	26	e29
11	40	19	39	39	29	27	23	20	12	e95	26	e29
12	32	18	38	38	30	27	23	20	11	e85	24	e30
13	49	20	37	38	30	27	23	18	10	e76	24	e31
14	31	22	35	38	29	26	31	20	7.8	e70	23	e32
15	28	2840	35	35	30	26	27	20	6.3	e64	22	e33
16	27	414	38	35	29	26	27	19	8.6	e60	22	e34
17	25	297	35	35	29	26	26	18	7.1	e56	22	35
18	24	260	29	35	30	26	25	18	9.4	e53	21	34
19	25	243	32	35	30	28	25	17	7.9	e52	20	36
20	24	231	41	35	30	30	25	27	8.1	51	21	34
21	23	225	42	35	30	27	25	14	7.8	45	25	35
22	23	218	42	35	30	26	25	12	7.8	44	25	35
23	24	189	39	35	29	26	25	13	7.5	42	25	36
24	22	107	39	35	30	26	24	13	7.6	39	25	36
25	22	70	38	34	28	26	24	11	7.5	36	26	37
26	22	64	38	33	27	26	25	19	8.2	37	26	39
27	21	53	37	34	27	26	23	16	20	35	24	38
28	21	50	38	35	27	26	22	50	24	33	23	37
29	22	47	36	35	---	26	22	31	13	33	e27	36
30	22	45	35	35	---	29	22	19	35	32	e27	38
31	21	---	35	36	---	27	---	14	---	30	e27	---
TOTAL	788	5639	1203	1079	842	837	742	625	344.4	5374	757	972
MEAN	25.42	188.0	38.81	34.81	30.07	27.00	24.73	20.16	11.48	173.4	24.42	32.40
MAX	49	2840	54	39	34	30	31	50	35	3020	30	39
MIN	21	18	29	31	27	26	22	11	6.3	30	20	27
AC-FT	1560	11180	2390	2140	1670	1660	1470	1240	683	10660	1500	1930

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2002h, BY WATER YEAR (WY)

	MEAN	36.00	26.34	22.94	21.19	21.14	20.06	24.08	25.55	26.57	21.49	35.14	21.12
MAX	361	245	178	97.8	114	108	195	101	165	188	726	71.0	
(WY)	1986	2001	1985	1968	1992	1992	1977	1977	1987	1987	1978	1974	
MIN	4.80	5.17	5.44	5.31	6.05	5.27	4.20	5.54	2.84	1.16	1.13	3.02	
(WY)	1952	1957	1955	1956	1952	1956	1954	1953	1956	1954	1954	1954	

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1942 - 2002h

ANNUAL TOTAL	16293	19202.4	
ANNUAL MEAN	44.64	52.61	24.70
HIGHEST ANNUAL MEAN			79.0
LOWEST ANNUAL MEAN			4.78
HIGHEST DAILY MEAN	2840	Nov 15	3020 Jul 5
LOWEST DAILY MEAN	16	Jul 30	6.3 Jun 15
ANNUAL SEVEN-DAY MINIMUM	18	Jul 27	7.7 Jun 19
MAXIMUM PEAK FLOW			c27800 Jul 5
MAXIMUM PEAK STAGE			a14.30 Jul 5
ANNUAL RUNOFF (AC-FT)	32320	38090	a24.25 Oct 4 1959
10 PERCENT EXCEEDS	43	48	17890
50 PERCENT EXCEEDS	31	27	38
90 PERCENT EXCEEDS	21	18	14
			6.0

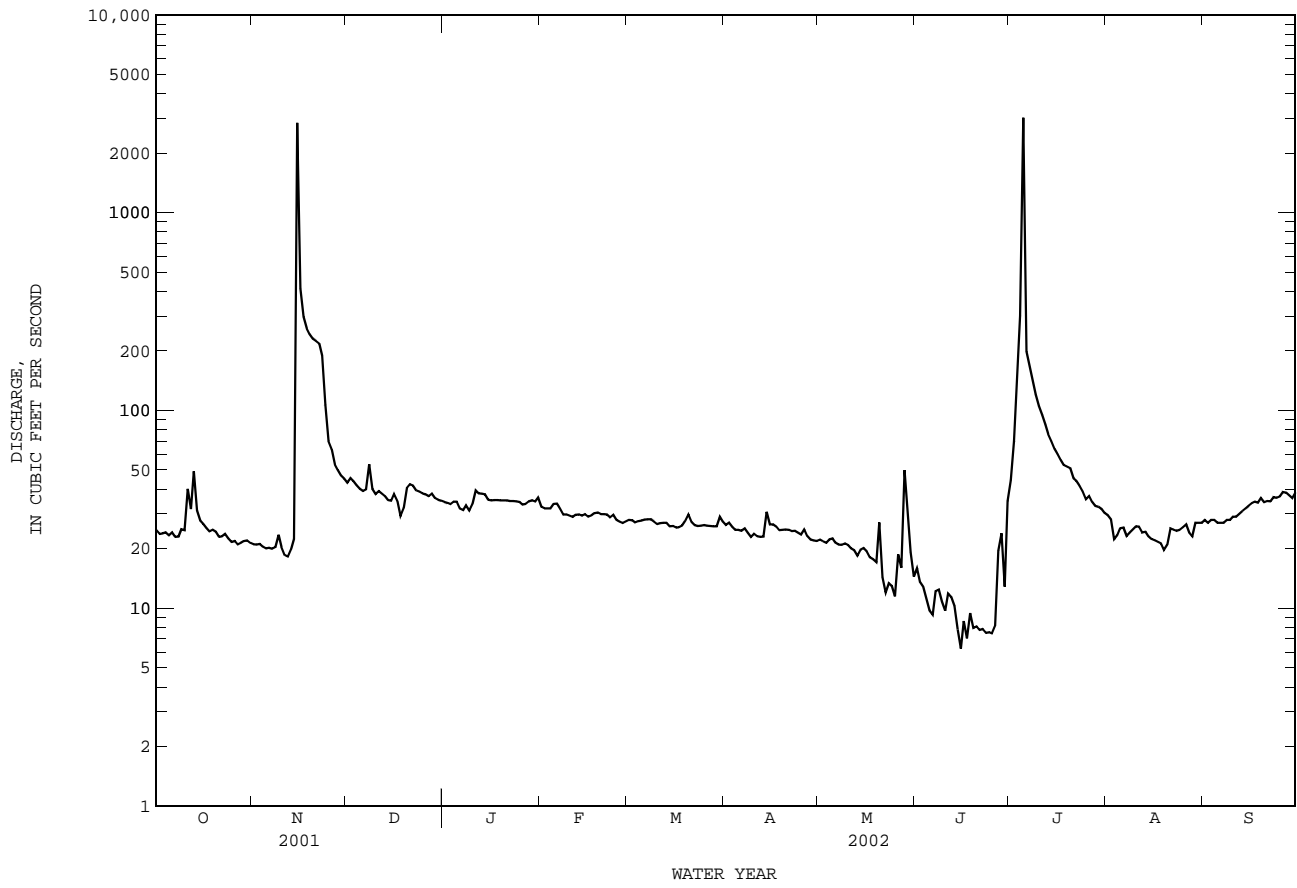
e Estimated

h See PERIOD OF RECORD paragraph.

c From rating curve extended above indirect measurement of 16,000 ft³/s.

a From floodmark.

08166000 Johnson Creek near Ingram, TX--Continued



GUADALUPE RIVER BASIN

08166140 Guadalupe River above Bear Creek at Kerrville, TX

LOCATION.--Lat 30°04'10", long 99°11'42", Kerr County, Hydrologic Unit 12100201, on left bank 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 Highway 27 and 39 in Ingram.

DRAINAGE AREA.--494 mi².

PERIOD OF RECORD.--Apr. 1978 to June 1986 (daily mean discharge below base), Dec. 1994 to Mar. 1999 (periodic discharge measurements only), Apr. 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,623.20 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. Numerous diversions for irrigation above station, amounts unknown.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 34.1 ft July 2, 1932, from information by local resident.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	98	217	156	141	115	99	86	76	128	128	103
2	82	100	226	155	127	115	99	82	72	e1600	126	104
3	82	100	227	154	121	112	98	77	71	e340	123	104
4	82	101	211	154	135	111	97	79	70	e2000	122	106
5	84	100	198	148	133	111	98	82	69	e8000	130	103
6	85	99	196	147	135	115	100	77	67	e1400	130	96
7	87	100	201	146	124	117	110	79	69	e580	127	114
8	87	99	251	146	117	118	108	68	73	e460	130	163
9	89	117	220	148	121	116	98	75	68	e370	136	178
10	93	114	199	149	116	112	96	76	63	e325	139	127
11	132	105	206	149	116	112	95	74	62	e285	144	103
12	126	104	200	148	120	113	94	73	62	e250	132	97
13	268	104	188	153	123	122	92	71	59	e220	127	93
14	220	106	184	152	121	112	125	70	57	e240	121	91
15	161	6870	181	155	118	111	128	71	55	e350	118	87
16	135	2040	197	156	119	112	120	72	55	272	115	88
17	116	696	185	155	122	111	112	76	56	261	112	88
18	92	550	173	143	122	114	104	199	55	257	112	88
19	92	421	171	140	122	118	98	125	54	257	108	89
20	92	335	173	131	111	120	95	92	53	232	106	88
21	93	313	170	129	110	111	94	84	53	208	104	84
22	93	296	167	131	112	102	94	84	53	179	103	82
23	96	282	163	132	111	90	92	82	51	157	103	82
24	96	270	162	133	111	100	87	80	52	154	103	84
25	93	259	161	131	112	101	88	80	51	148	103	86
26	92	258	161	128	109	97	90	86	51	145	102	88
27	95	252	163	127	108	96	89	82	64	135	99	89
28	93	236	165	130	110	93	88	105	85	133	98	88
29	93	222	161	131	---	92	92	98	64	127	106	88
30	93	221	159	147	---	102	104	86	89	133	110	88
31	95	---	158	166	---	108	---	81	---	132	106	---
TOTAL	3319	14968	5794	4470	3347	3379	2984	2652	1879	19478	3623	2969
MEAN	107.1	498.9	186.9	144.2	119.5	109.0	99.47	85.55	62.63	628.3	116.9	98.97
MAX	268	6870	251	166	141	122	128	199	89	8000	144	178
MIN	82	98	158	127	108	90	87	68	51	127	98	82
AC-FT	6580	29690	11490	8870	6640	6700	5920	5260	3730	38630	7190	5890

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2002, BY WATER YEAR (WY)

	MEAN	247.8	341.0	147.6	128.6	119.6	120.3	106.0	102.1	89.59	208.1	70.27	85.13
MAX	576	499	187	169	167	181	146	125	135	628	117	146	
(WY)	2001	2002	2002	2001	2001	2001	2001	2001	1999	2002	2002	2001	
MIN	60.5	66.9	73.4	73.0	74.2	71.0	72.9	80.9	62.6	41.8	32.3	33.4	
(WY)	2000	2000	2000	2000	2000	2000	2000	2000	2002	2000	2000	2000	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

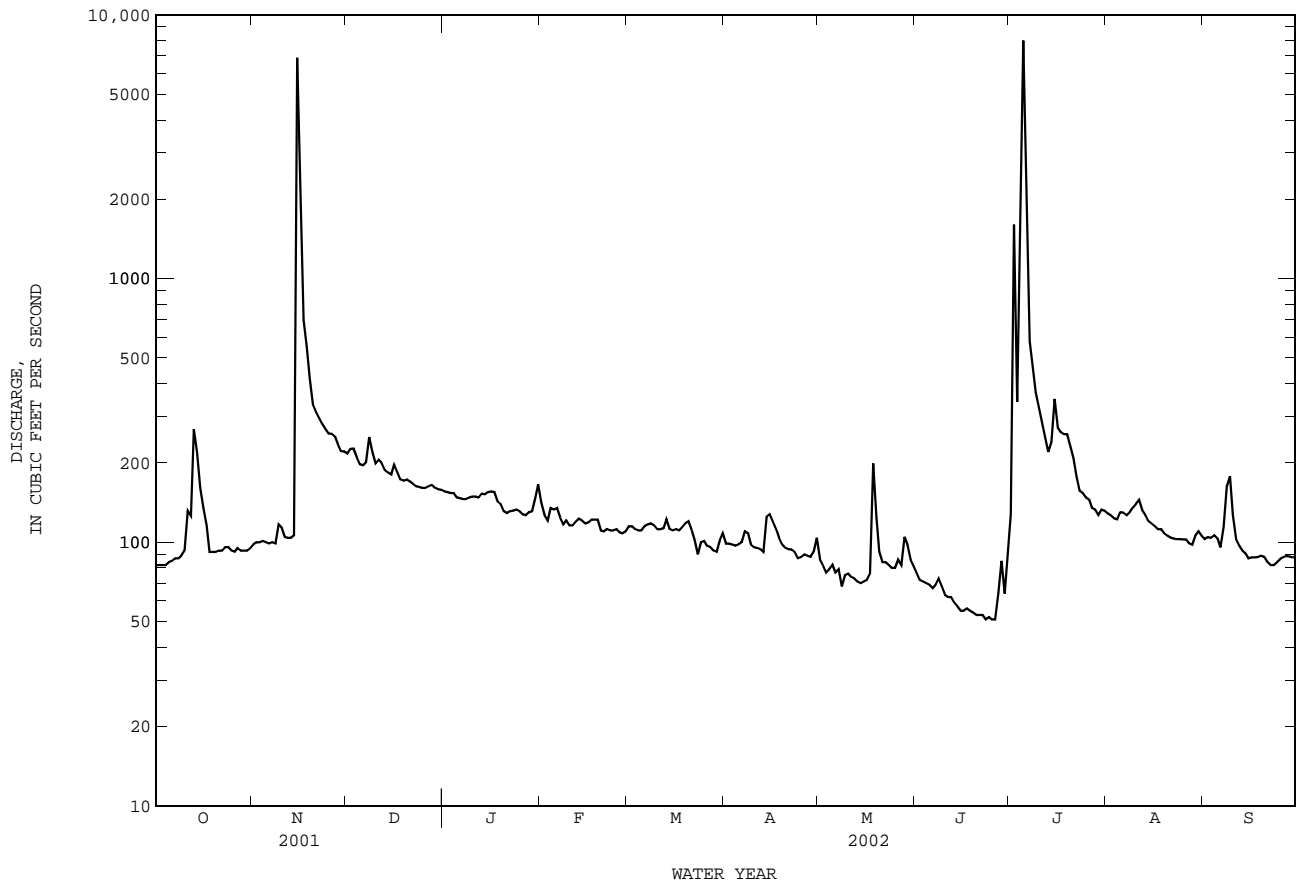
FOR 2002 WATER YEAR

WATER YEARS 1999 - 2002

ANNUAL TOTAL	58594	68862	149.4	
ANNUAL MEAN	160.5	188.7		
HIGHEST ANNUAL MEAN			197	2001
LOWEST ANNUAL MEAN			63.3	2000
HIGHEST DAILY MEAN	6870	Nov 15	13000	Oct 23 2000
LOWEST DAILY MEAN	50	Aug 6	28	Sep 7 2000
ANNUAL SEVEN-DAY MINIMUM	52	Aug 2	29	Sep 6 2000
MAXIMUM PEAK FLOW			35100	Jul 5
MAXIMUM PEAK STAGE			16.35	Jul 5
ANNUAL RUNOFF (AC-FT)	116200	136600	32.79	Aug 3 1978
10 PERCENT EXCEEDS	206	224	199	
50 PERCENT EXCEEDS	134	112	90	
90 PERCENT EXCEEDS	60	76	52	

e Estimated

08166140 Guadalupe River above Bear Creek at Kerrville, TX--Continued



GUADALUPE RIVER BASIN

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.

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 NGVD of 1929. Prior to Apr. 4, 1989, at site 300 ft upstream, and on opposite bank at datum 1.0 ft lower. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in 1986, at least 10% of contributing drainage area has been regulated. 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).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	86	231	164	145	109	100	89	82	153	144	104
2	77	86	236	163	132	109	98	82	75	2060	143	104
3	78	86	236	159	118	107	95	75	69	462	138	101
4	77	86	218	157	134	105	94	75	68	2600	134	101
5	79	87	212	159	133	105	94	80	69	9740	138	97
6	78	84	207	155	135	107	96	74	69	1630	138	93
7	79	83	209	152	127	109	110	76	71	701	133	124
8	79	83	258	152	115	111	114	63	76	504	132	159
9	79	101	229	152	119	111	103	69	70	409	138	184
10	85	102	211	151	113	108	98	72	65	362	141	157
11	145	91	219	149	114	105	97	70	62	315	145	134
12	144	88	216	146	118	106	94	69	63	281	134	123
13	204	86	206	146	121	117	93	67	58	245	127	116
14	150	101	197	142	118	108	129	65	56	261	123	113
15	121	10800	195	141	115	105	141	66	56	371	121	109
16	105	4200	207	141	113	105	135	68	53	286	118	109
17	101	1150	200	141	118	105	125	77	55	277	115	105
18	96	588	192	142	117	107	116	195	51	263	114	105
19	94	464	189	147	121	115	108	140	50	230	111	106
20	92	391	190	137	115	124	103	93	48	213	108	103
21	92	349	189	134	113	123	102	81	48	200	105	99
22	90	315	183	134	113	111	102	83	48	189	105	97
23	92	291	177	135	111	95	100	79	47	179	105	98
24	89	275	174	133	110	104	92	77	47	175	102	98
25	84	260	171	128	111	107	92	78	47	169	102	98
26	78	254	168	126	105	101	94	94	46	164	100	98
27	84	249	171	123	104	99	94	78	77	155	97	101
28	81	241	172	124	105	95	92	111	95	154	96	98
29	79	237	168	125	---	91	96	114	75	148	104	96
30	79	234	168	142	---	105	112	97	145	152	108	94
31	84	---	165	169	---	107	---	88	---	152	109	---
TOTAL	2973	21548	6164	4469	3313	3316	3119	2645	1941	23200	3728	3324
MEAN	95.90	718.3	198.8	144.2	118.3	107.0	104.0	85.32	64.70	748.4	120.3	110.8
MAX	204	10800	258	169	145	124	141	195	145	9740	145	184
MIN	77	83	165	123	104	91	92	63	46	148	96	93
AC-FT	5900	42740	12230	8860	6570	6580	6190	5250	3850	46020	7390	6590

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)

MEAN	162.3	181.5	149.4	126.0	150.6	156.8	124.8	161.1	204.0	236.9	106.4	114.1
MAX	676	718	572	282	555	547	329	313	1088	1572	281	256
(WY)	2001	2002	1992	1992	1992	1992	1992	1994	1987	1987	1987	1986
MIN	59.7	63.7	64.1	56.6	59.4	57.1	46.9	55.6	40.1	27.3	30.0	34.9
(WY)	2000	2000	1990	1996	1996	2000	2000	1996	1996	1996	2000	2000

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

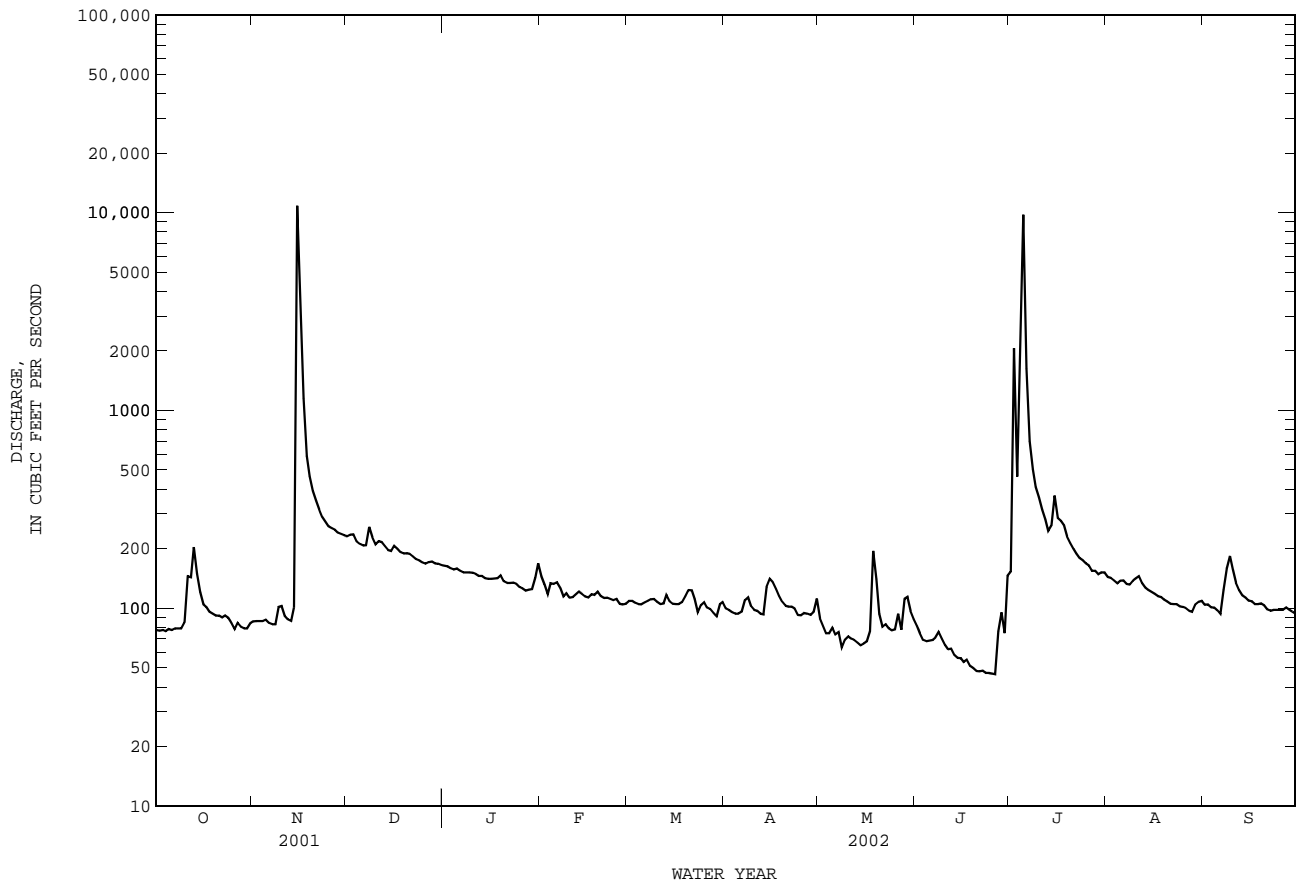
WATER YEARS 1986 - 2002

ANNUAL TOTAL	65700	79740	156.7
ANNUAL MEAN	180.0	218.5	399
HIGHEST ANNUAL MEAN			55.8
LOWEST ANNUAL MEAN			36100
HIGHEST DAILY MEAN	10800	Nov 15	Jul 17 1987
LOWEST DAILY MEAN	46	Aug 12	Aug 7 1996
ANNUAL SEVEN-DAY MINIMUM	48	Jul 31	Aug 4 1996
MAXIMUM PEAK FLOW		35900	Jul 5
MAXIMUM PEAK STAGE		14.56	Jul 5
ANNUAL RUNOFF (AC-FT)	130300	158200	a37.72
10 PERCENT EXCEEDS	210	232	225
50 PERCENT EXCEEDS	138	111	95
90 PERCENT EXCEEDS	58	75	49

i From indirect measurement of peak flow.

a From floodmark.

08166200 Guadalupe River at Kerrville, TX--Continued



GUADALUPE RIVER BASIN

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 NGVD of 1929. 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. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since 1956, at least 10% of contributing drainage area has been regulated. There are many small diversions above station for irrigation. No flow at times.

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 Texas Department of 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.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	112	340	231	221	152	142	124	109	2690	584	314
2	99	110	343	229	194	165	129	102	100	34100	547	267
3	97	113	370	227	179	156	127	97	94	19600	534	263
4	96	115	346	226	174	151	122	90	85	37300	513	235
5	96	114	327	234	195	144	118	98	82	42600	506	217
6	99	111	316	226	209	141	120	92	83	8170	530	209
7	96	108	312	216	202	150	140	83	87	3460	507	277
8	98	108	358	211	185	151	183	79	89	2390	482	600
9	97	118	369	211	176	153	165	68	90	2030	504	634
10	99	135	319	211	177	143	144	76	85	1760	501	496
11	135	131	313	210	163	138	134	79	79	1570	578	411
12	200	121	342	203	161	136	130	78	75	1380	479	363
13	472	116	318	199	164	132	125	79	73	2640	428	331
14	275	116	306	201	167	145	136	75	68	1870	403	307
15	206	13500	295	196	165	135	195	71	68	1810	388	293
16	176	8340	308	197	161	131	198	68	65	2140	380	282
17	156	2640	317	199	163	131	196	74	65	1750	369	275
18	148	1130	292	199	165	132	172	117	64	1570	370	269
19	142	862	281	208	172	140	156	264	60	1300	361	437
20	135	728	276	199	170	174	141	156	54	1170	350	369
21	134	629	277	191	156	169	132	110	49	1080	350	313
22	131	572	273	191	156	155	134	91	51	977	336	294
23	130	517	261	196	156	138	132	88	55	919	335	279
24	129	471	254	198	155	124	126	87	49	863	324	267
25	123	429	249	188	158	139	116	86	47	814	305	275
26	113	404	246	181	156	135	114	150	45	765	300	274
27	111	394	246	177	147	123	111	130	87	736	290	262
28	112	369	246	178	145	121	113	213	179	698	270	259
29	111	368	245	183	---	117	112	169	122	670	279	255
30	111	351	235	184	---	128	113	151	8970	627	318	238
31	111	---	234	228	---	150	---	125	---	615	318	---
TOTAL	4339	33332	9214	6328	4792	4399	4176	3370	11229	180064	12739	9565
MEAN	140.0	1111	297.2	204.1	171.1	141.9	139.2	108.7	374.3	5809	410.9	318.8
MAX	472	13500	370	234	221	174	198	264	8970	42600	584	634
MIN	96	108	234	177	145	117	111	68	45	615	270	209
AC-FT	8610	66110	18280	12550	9500	8730	8280	6680	22270	357200	25270	18970

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002, BY WATER YEAR (WY)

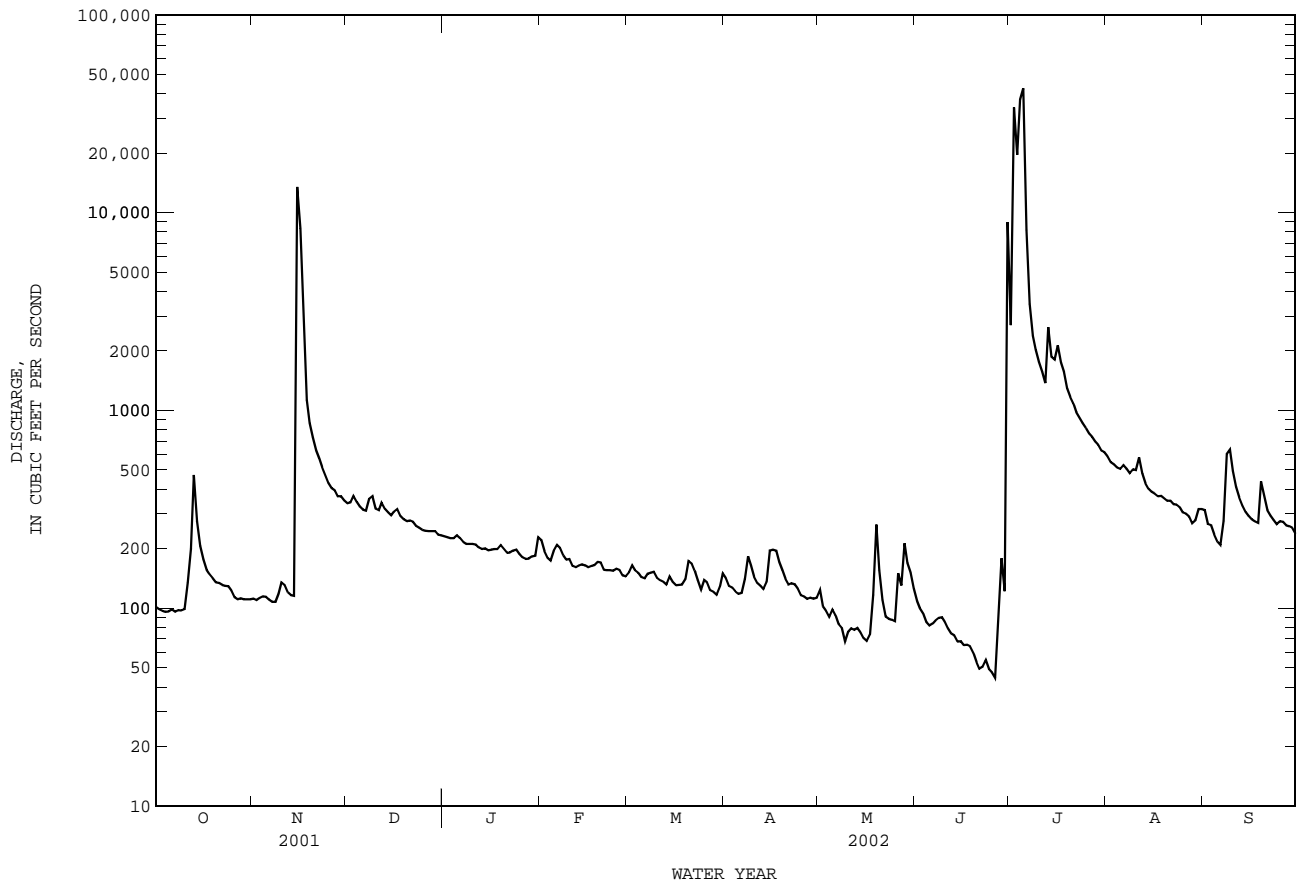
	MEAN	273.1	187.0	204.8	178.5	220.3	214.7	235.6	286.5	283.4	250.0	218.6	152.0
MAX	2417	1277	2700	987	1728	1559	1598	1122	2820	5809	4782	575	
(WY)	1986	2001	1992	1992	1992	1992	1977	1975	1987	2002	1978	1978	
MIN	0.000	3.63	10.5	16.8	24.4	16.6	13.2	14.9	0.097	0.000	0.000	0.000	
(WY)	1957	1957	1957	1957	1957	1956	1955	1956	1956	1956	1954	1954	

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1939 - 2002	
ANNUAL TOTAL	116966		283547			
ANNUAL MEAN	320.5		776.8		226.4	
HIGHEST ANNUAL MEAN					894	
LOWEST ANNUAL MEAN					14.5	
HIGHEST DAILY MEAN	13500	Nov 15	42600	Jul 5	74200	Aug 2 1978
LOWEST DAILY MEAN	46	Aug 16	45	Jun 26	0.00	Aug 31 1952
ANNUAL SEVEN-DAY MINIMUM	49	Aug 10	50	Jun 20	0.00	Aug 31 1952
MAXIMUM PEAK FLOW			128000	Jul 4	c240000	Aug 2 1978
MAXIMUM PEAK STAGE			a31.38	Jul 4	a40.90	Aug 2 1978
ANNUAL RUNOFF (AC-FT)	232000		562400		164000	
10 PERCENT EXCEEDS	470		648		376	
50 PERCENT EXCEEDS	244		183		112	
90 PERCENT EXCEEDS	58		89		27	

c From rating curve extended above discharge measurement of 92,000 ft³/s.

a From floodmark.

08167000 Guadalupe River at Comfort, TX--Continued



GUADALUPE RIVER BASIN

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 data: Oct. 1942 to Sept. 1945, Oct. 1980 to Sept. 1982, Oct. 1989 to Aug. 1995, Apr. 1996 to Apr. 1998. Biochemical data: Oct. 1980 to Sept. 1982, Oct. 1989 to Aug. 1995, Apr. 1996 to Apr. 1998. Sediment data: Apr. 1996 to Apr. 1998.

REVISED RECORDS.--WSP 1562: 1923-24, 1926, 1927-28(M), 1929, 1930(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 948.10 ft above NGVD of 1929. Prior to Jan. 14, 1981, at site 220 ft downstream at same datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since 1956, at least 10% of contributing drainage area has been regulated. Several small diversions above station for irrigation. No flow at times.

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.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	195	245	696	517	372	261	232	160	149	14400	1190	443
2	193	243	746	504	375	263	226	164	134	e25000	1130	440
3	189	237	794	493	356	261	214	156	123	e52000	1080	425
4	187	234	778	487	344	259	205	148	116	e43000	1030	414
5	184	233	737	561	343	249	202	143	110	e60000	988	403
6	181	230	704	538	362	246	202	140	105	e40000	e980	395
7	177	226	682	496	360	246	215	139	103	e11400	e950	425
8	176	222	1300	479	352	248	242	134	103	e7080	e930	614
9	177	227	932	471	339	248	256	128	102	e5390	e920	842
10	176	224	860	466	324	240	241	123	102	e4430	900	828
11	1670	239	823	459	318	239	222	115	101	e4020	943	685
12	400	239	856	448	309	237	212	117	95	e3600	923	584
13	2630	231	831	439	303	233	206	123	91	e3200	837	530
14	910	227	790	434	299	230	201	114	89	e4160	780	495
15	622	8540	775	424	302	237	201	113	86	e7020	747	468
16	494	17000	788	419	296	230	230	112	86	e5100	719	442
17	432	7670	769	418	290	224	249	110	83	e4600	702	435
18	396	3160	747	414	289	226	250	110	81	e5000	675	424
19	373	2000	718	412	296	232	235	109	80	e4000	689	482
20	352	1570	688	407	292	242	215	188	80	e3300	655	702
21	334	1330	673	403	289	246	205	176	76	e2800	637	513
22	321	1170	668	389	274	247	194	143	72	e2400	610	448
23	313	1070	647	389	272	238	189	124	70	2150	593	409
24	302	968	620	392	273	231	186	117	68	1950	569	394
25	290	884	606	378	272	221	183	114	67	1830	528	385
26	276	834	593	368	266	215	178	115	66	1720	509	381
27	263	799	579	362	263	216	170	117	67	1570	e490	380
28	254	763	573	359	260	209	169	252	67	1470	e480	377
29	253	739	562	358	---	207	165	303	113	1410	e470	374
30	248	722	545	357	---	236	164	190	3560	1320	e480	374
31	246	---	530	359	---	251	---	171	---	1250	454	---
TOTAL	13214	52476	22610	13400	8690	7368	6259	4468	6245	326570	23588	14511
MEAN	426.3	1749	729.4	432.3	310.4	237.7	208.6	144.1	208.2	10530	760.9	483.7
MAX	2630	17000	1300	561	375	263	256	303	3560	60000	1190	842
MIN	176	222	530	357	260	207	164	109	66	1250	454	374
AC-FT	26210	104100	44850	26580	17240	14610	12410	8860	12390	647800	46790	28780

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2002, BY WATER YEAR (WY)

	MEAN	350.3	273.3	313.6	294.0	364.3	362.1	385.5	503.2	562.9	437.6	239.4	296.3
MAX	1584	2053	4927	1903	4164	3306	2417	2216	6329	10530	4980	4055	
(WY)	1982	2001	1992	1992	1992	1992	1977	1992	1987	2002	1978	1936	
MIN	5.91	11.1	6.48	10.9	29.3	16.8	6.11	19.3	0.000	0.000	0.25	0.29	
(WY)	1952	1957	1957	1957	1956	1956	1956	1956	1956	1956	1954	1954	

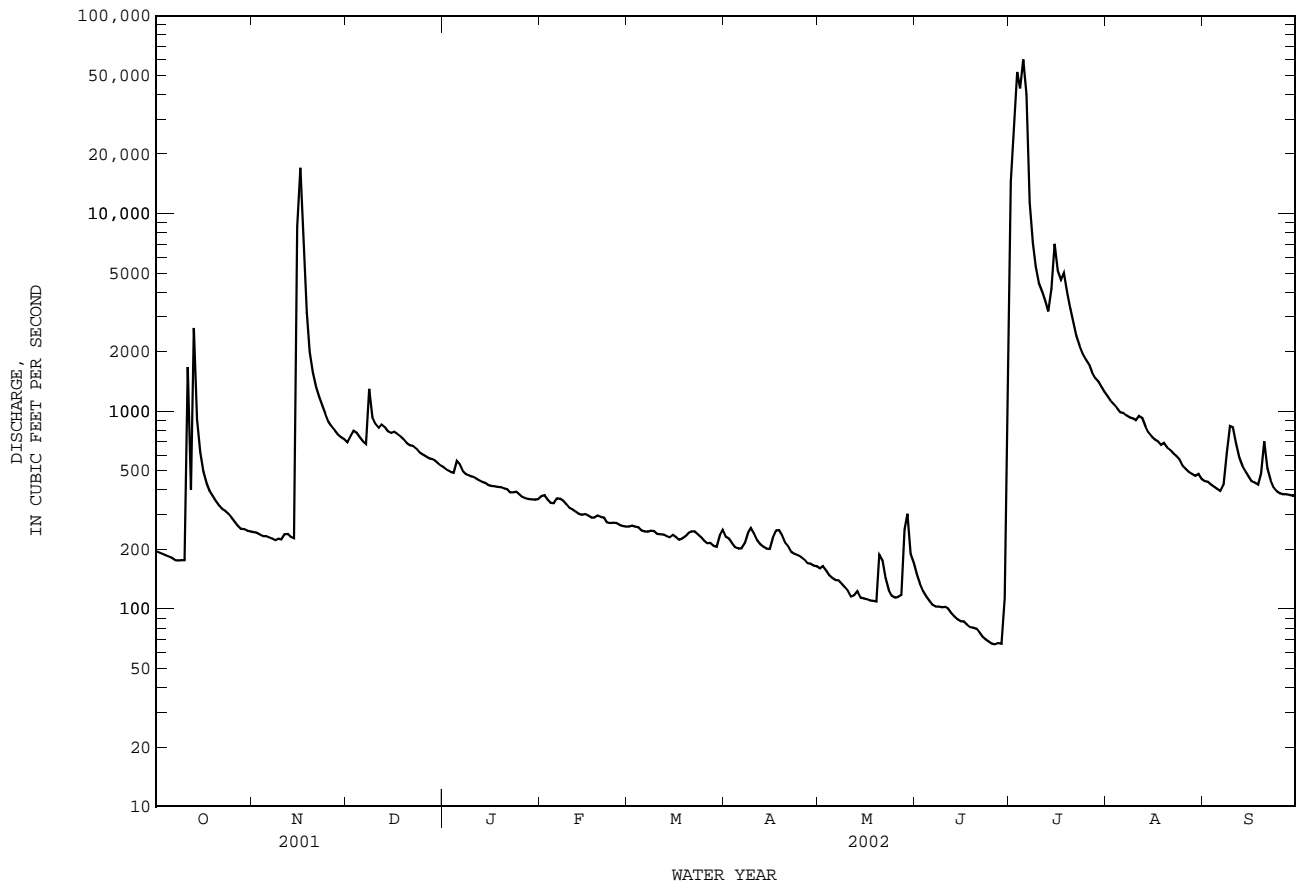
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1922 - 2002	
ANNUAL TOTAL	221255		499399			
ANNUAL MEAN	606.2		1368		365.9	
HIGHEST ANNUAL MEAN					1819	
LOWEST ANNUAL MEAN					13.3	
HIGHEST DAILY MEAN	17000		60000		76500	
LOWEST DAILY MEAN	67		66		0.00	
ANNUAL SEVEN-DAY MINIMUM	69		68		0.00	
MAXIMUM PEAK FLOW			94400		1160000	
MAXIMUM PEAK STAGE			a41.60		a45.25	
ANNUAL RUNOFF (AC-FT)	438900		990600		265100	
10 PERCENT EXCEEDS	912		1510		660	
50 PERCENT EXCEEDS	463		358		155	
90 PERCENT EXCEEDS	84		117		34	

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08167500 Guadalupe River near Spring Branch, TX--Continued
(Hydrologic index station)



GUADALUPE RIVER BASIN

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 Sept. 2000 (U.S. Army Corps of Engineers furnished contents), Oct. 2000 to current year. Prior to Oct. 1970, published as "Canyon Reservoir".

Water-quality records.--Chemical data: Oct. 1980 to Sept. 1982, Oct. 1989 to Aug. 1995. Biochemical data: Oct. 1980 to Sept. 1982, Oct. 1989 to Aug. 1995.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Sept. 24, 1964, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records good. 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 Aug. 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 dam is owned by the U.S. Army Corps of Engineers. The lake was built for water conservation and flood control. Capacity table beginning Oct. 1, 2001, is based on a volumetric survey of Nov. 2000. Small diversions above the lake for irrigation. Conservation pool storage is 378,852 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	974.0
Crest of spillway.....	943.0
Top of conservation pool.....	908.6
Lowest gated outlet (invert).....	775.0

COOPERATION.--Prior to Oct. 1, 2000, record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 831,800 acre-ft, July 6, 2002, elevation, 950.28 ft; minimum observed since conservation pool first reached in Apr. 1968, 311,200 acre-ft, Nov. 24, 1984, elevation, 899.85 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 831,800 acre-ft, July 6, elevation, 950.28 ft; minimum contents, 373,000 acre-ft, June 28, elevation, 908.29 ft.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	383900	380600	409000	385300	381600	379800	381200	382300	379100	410000	744400	553900
2	383100	380300	406900	385200	381100	380000	381200	382200	379000	458000	744100	544800
3	382700	380300	404700	385100	380600	379600	381200	382200	378800	582900	743700	535600
4	382400	380100	401900	384600	380300	379300	381000	382100	378700	721200	743400	526500
5	382200	380000	398000	384800	380300	379300	380800	381900	378500	809000	743100	517200
6	381700	379800	394000	384500	380500	379300	380700	381800	378400	821800	742800	508300
7	381200	379600	391500	384100	380300	379500	381000	381700	378200	791100	742700	500200
8	380800	379400	393700	383600	380300	379700	381900	381600	377900	772200	742500	493900
9	380600	379300	395500	383200	380300	379800	382000	381500	377800	763500	742300	488200
10	380500	379100	396300	382700	380400	379700	382000	381300	377500	758700	741200	481300
11	382700	378900	396800	382300	380100	379800	382000	381100	377300	755600	736100	473200
12	385000	378800	397300	382100	380100	379800	382100	380900	377100	753600	730200	464900
13	389400	378600	397600	381900	380100	379800	382100	380900	376900	752300	724100	456400
14	392600	378500	397900	381700	380100	379800	382100	380600	376700	752600	718000	447800
15	393800	388400	398200	381400	380100	379900	382100	380300	376400	756800	e711800	439200
16	393900	431600	398800	381200	380100	379900	382200	380100	376500	757000	e704400	430700
17	393200	463600	398900	381200	380100	379900	382400	379900	376300	756500	e694900	422200
18	392500	474000	398200	381200	380100	380000	382500	379700	376000	755700	e685400	413700
19	391700	478500	396600	381500	380300	380200	382600	379400	375600	754000	e675700	406300
20	390900	477000	392600	381600	380400	381100	382700	379200	375400	752200	665100	399300
21	390100	472500	388600	381700	380400	381000	382700	379000	375100	750700	655300	391300
22	389300	465900	387800	381900	380400	380900	382800	378800	374900	749600	646000	383300
23	388500	459000	387600	382100	380300	380800	382700	378500	374600	748600	636700	378300
24	387700	452000	387200	382500	380300	380800	382700	378300	374200	747700	627400	378100
25	386700	445600	386800	382500	380300	381000	382700	378100	373900	747000	618100	378600
26	385600	442000	386300	382500	380300	e380900	382700	378100	373700	746500	608800	379200
27	384500	435000	385800	382600	379900	e380800	382600	377900	373500	746000	599400	379800
28	383300	427600	385300	382600	379800	380700	382600	378800	373500	745600	590200	380300
29	382200	419700	385300	382500	---	380700	382500	379200	373700	745300	581200	380900
30	381300	412600	385300	382200	---	381000	382400	379300	377800	745000	572200	381400
31	380800	---	385300	382100	---	381200	---	379300	---	744700	563000	---
TOTAL	11964800	12458300	12215700	11864400	10648900	11786000	11462200	11786000	11293000	22651400	21174200	13314800
MEAN	386000	415300	394100	382700	380300	380200	382100	380200	376400	730700	683000	443800
MAX	393900	478500	409000	385300	381600	381200	382800	382300	379100	821800	744400	553900
MIN	380500	378500	385300	381200	379800	379300	380700	377900	373500	410000	563000	378100
(+)	909.24	912.28	909.78	909.39	909.11	909.29	909.43	909.05	908.87	943.86	928.57	909.31
(@)	-6900	+31800	-27300	-3200	-2300	+1400	+1200	-3100	-1500	+366900	-181700	-181600

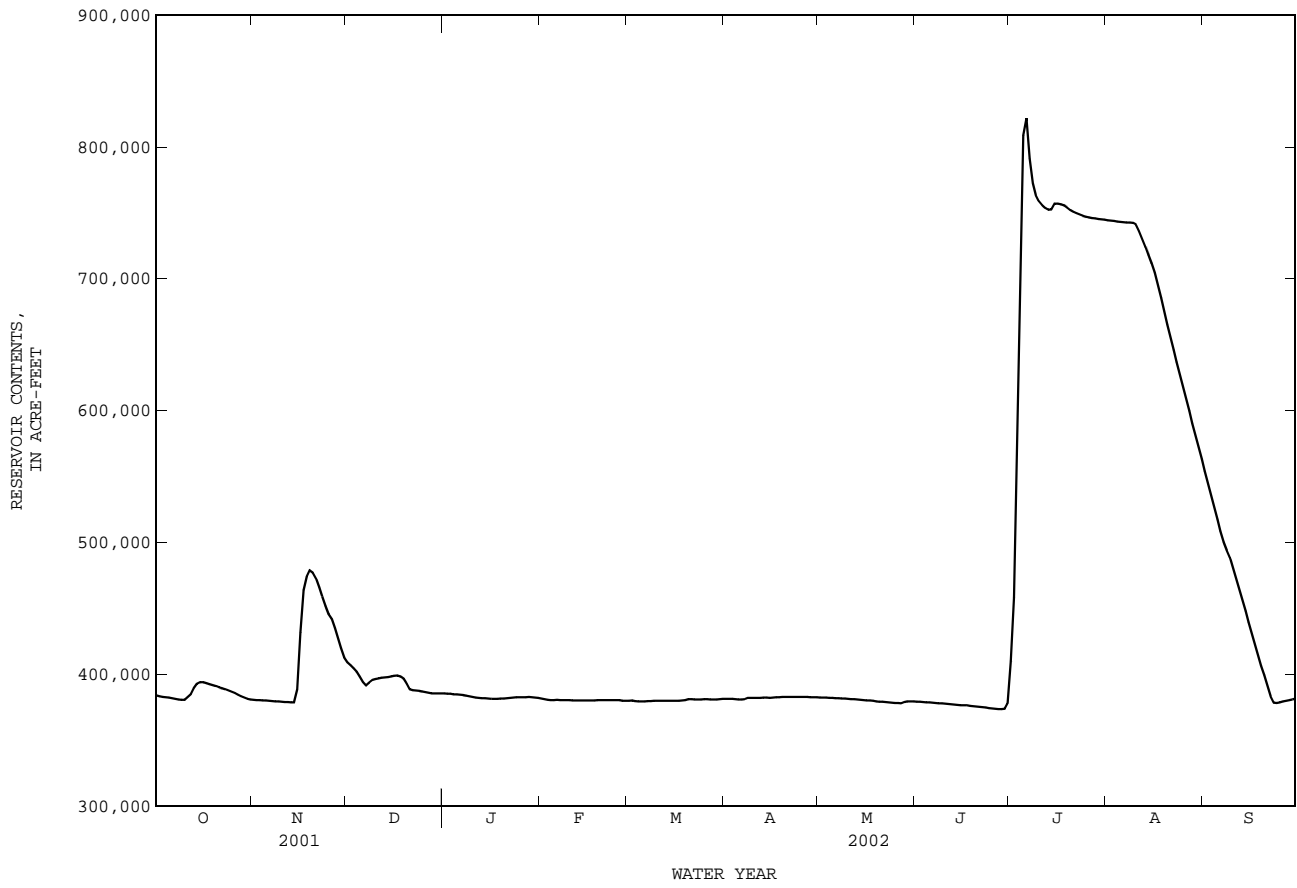
CAL YR 2001 MAX 478500 MIN 370100 (@) +1400
WTR YR 2002 MAX 821800 MIN 373500 (@) -6300

e Estimated

(+) Elevation, in feet, at end of month.

(@) Change in contents, in acre-feet.

08167700 Canyon Lake near New Braunfels, TX--Continued



GUADALUPE RIVER BASIN

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.--Mar. 1960 to current year.

Water-quality records.--Chemical data: Oct. 1980 to Sept. 1982, Oct. 1989 to Aug. 1995. Biochemical data: Oct. 1980 to Sept. 1982, Oct. 1989 to Aug. 1995. Water temperature: June 1984 to Sept. 1987.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 742.24 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since 1964, at least 10% of contributing drainage area has been regulated. Small diversions above station for irrigation. No flow July 31 to Aug. 6, 1964 (result of closure of Canyon Dam). No flow at times.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--3 years (water years 1961-63) 288 ft³/s (208,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1960-63).--Maximum discharge, 20,800 ft³/s Oct. 29, 1960 (gage height, 12.20 ft); no flow July 31 to Aug. 6, 1962.

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 FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	530	428	2320	636	643	327	242	172	166	190	e1180	e4000
2	427	350	2320	637	643	327	237	169	159	299	e1130	e3990
3	321	314	2320	752	642	325	236	169	152	229	e1100	e3960
4	318	314	2760	833	562	296	235	169	146	1400	e1070	e3950
5	319	314	3100	834	462	250	234	167	142	e46900	e1030	e3930
6	319	317	2810	834	456	252	236	156	142	e49700	e998	e3920
7	318	315	1410	833	456	254	238	149	140	e22700	e964	e3790
8	319	317	829	834	442	254	239	152	141	e11500	e941	e2750
9	246	316	827	834	404	253	237	148	141	e7990	e942	e2820
10	192	317	931	834	403	252	237	145	139	e6050	e1390	e3810
11	192	317	1070	742	386	255	228	157	139	e4540	e2740	e3860
12	193	317	1070	639	357	257	221	158	140	e3610	e2790	e3830
13	205	318	1070	639	357	259	221	156	140	e3020	e2870	e3820
14	196	319	877	639	357	254	220	160	140	e2850	e3200	e3800
15	401	457	1070	641	348	247	216	156	143	e4180	e4550	e3790
16	608	359	1070	618	330	245	210	150	142	e5060	e4490	e3780
17	784	116	1140	556	326	245	208	147	138	e4490	e4490	e3760
18	783	389	1550	428	327	244	200	143	135	e4290	e4480	e3740
19	783	1800	2420	407	327	243	200	141	135	e3670	e4360	e3860
20	784	3250	3120	407	326	241	200	141	135	e2970	e4200	e3830
21	784	4620	2210	408	326	240	200	192	133	e2520	e4200	e3720
22	783	5040	986	408	325	240	200	209	133	e2190	e4180	e3360
23	786	5020	987	410	325	240	200	187	133	e1970	e4170	e1800
24	786	5020	988	410	326	240	200	186	133	e1820	e4160	e385
25	785	3280	987	410	329	241	200	184	103	e1680	e4130	e184
26	785	3730	988	409	328	243	198	184	111	e1560	e4110	e195
27	786	4990	965	410	327	242	197	173	108	e1440	e4090	e189
28	785	5000	919	479	327	242	197	153	119	e1360	e4070	e173
29	785	4990	633	588	---	242	196	190	106	e1280	e4060	e165
30	594	3620	634	645	---	242	184	189	278	e1230	e4050	e163
31	427	---	634	645	---	241	---	189	---	e1210	e4020	---
TOTAL	16324	56254	45015	18799	11167	7933	6467	5141	4212	203898	94155	85324
MEAN	526.6	1875	1452	606.4	398.8	255.9	215.6	165.8	140.4	6577	3037	2844
MAX	786	5040	3120	834	643	327	242	209	278	49700	4550	4000
MIN	192	116	633	407	325	240	184	141	103	190	941	163
AC-FT	32380	111600	89290	37290	22150	15740	12830	10200	8350	404400	186800	169200

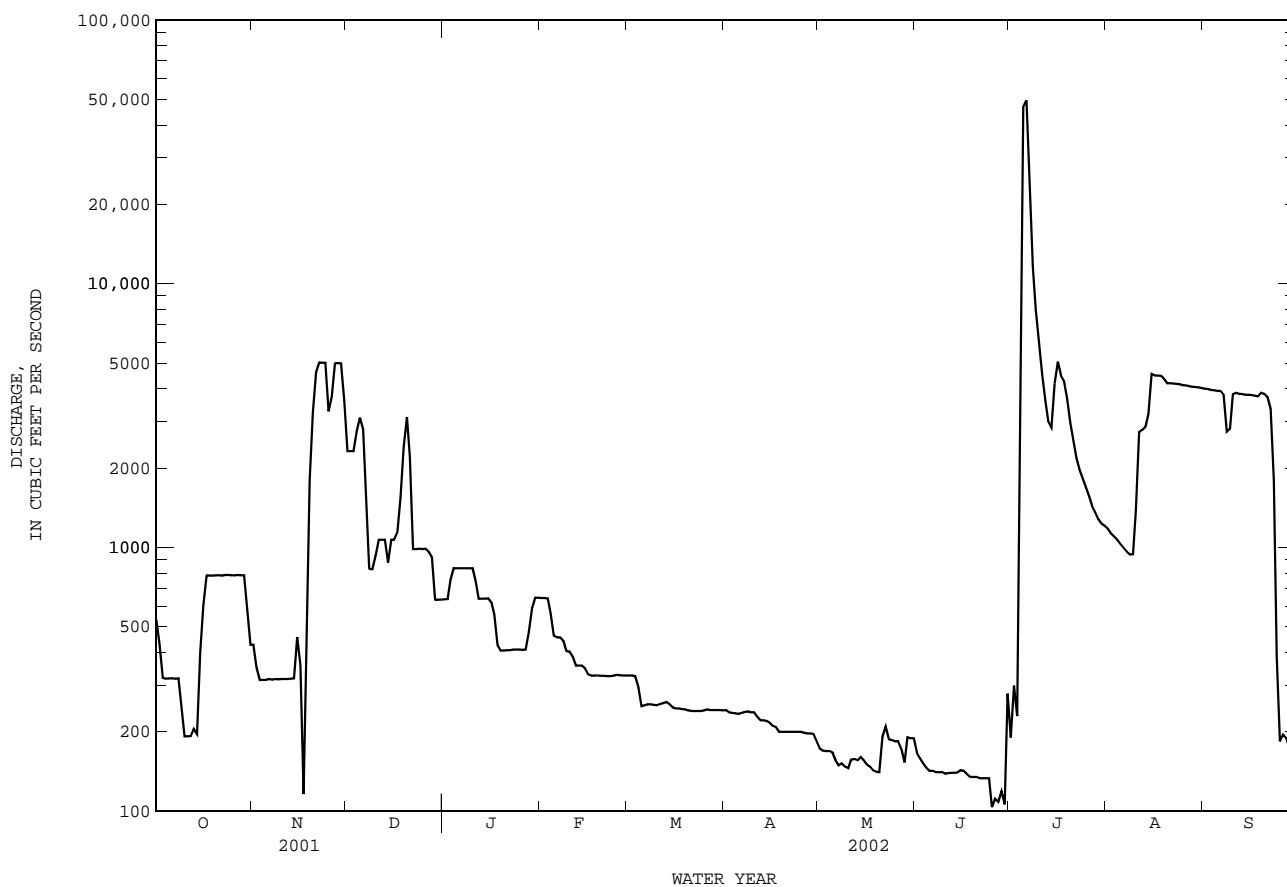
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2002z, BY WATER YEAR (WY)

	MEAN	308.6	444.1	376.7	452.5	426.2	510.8	516.8	500.0	634.2	787.9	535.7	375.4
MAX	1317	2151	2121	4437	2089	3949	3705	2318	2783	6577	3854	2844	
(WY)	1987	2001	1999	1992	1992	1992	1992	1992	1992	1992	1978	2002	
MIN	43.1	66.2	41.4	60.4	13.5	71.7	45.6	47.1	40.6	22.3	35.1	28.9	
(WY)	1964	1976	1966	1964	1965	1988	1971	1971	1984	1984	1984	1984	

08167800 Guadalupe River at Sattler, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1964 - 2002z	
ANNUAL TOTAL	268866		554689		489.5	
ANNUAL MEAN	736.6		1520		1900	
HIGHEST ANNUAL MEAN					1992	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	5040	Nov 22	49700	Jul 6	49700	Jul 6 2002
LOWEST DAILY MEAN	115	Aug 12	103	Jun 25	0.80	Jan 29 1965
ANNUAL SEVEN-DAY MINIMUM	116	Aug 9	116	Jun 23	1.2	Sep 24 1984
MAXIMUM PEAK FLOW			i70000	Jul 6	i70000	Jul 6 2002
MAXIMUM PEAK STAGE			a37.32	Jul 6	a37.32	Jul 6 2002
ANNUAL RUNOFF (AC-FT)	533300		1100000		354600	
10 PERCENT EXCEEDS	1090		3990		820	
50 PERCENT EXCEEDS	588		407		224	
90 PERCENT EXCEEDS	190		152		76	

e Estimated
z Period of regulated streamflow.
i From indirect measurement of peak flow.
a From floodmark.



GUADALUPE RIVER BASIN

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.--Dec. 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since 1964, at least 10% of contributing drainage area has been regulated. Small diversions for irrigation above this station. No flow at times.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--36 years (water years 1928-63), 364 ft³/s (263,400 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1928-63).--Maximum discharge, 101,000 ft³/s Jun. 15, 1935 (gage height, 32.95 ft); minimum, no flow July 8-9, July 17 to Aug. 20, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1845, 38 ft Jul. 8, 1869, and in Dec. 1913, from information by local residents.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	624	527	2000	772	730	371	298	233	226	1120	1480	5180
2	586	492	2040	772	730	374	300	220	207	3260	1420	5160
3	429	403	2040	820	729	371	300	220	200	1380	1380	5120
4	410	403	2250	988	682	371	300	220	192	1480	1340	5110
5	412	403	3230	944	563	310	300	225	186	48000	1290	5080
6	412	403	2940	936	543	307	300	218	182	62600	1250	5060
7	411	402	1910	989	535	307	309	202	182	32700	1210	4910
8	411	395	982	989	518	307	335	201	182	16300	1180	3630
9	401	403	992	989	479	307	316	201	182	10900	1180	3610
10	330	395	1010	989	463	307	307	191	182	8140	1690	4780
11	295	395	1170	915	461	307	307	193	180	6060	3280	4970
12	288	396	1160	796	420	307	295	202	178	4770	3550	4950
13	471	395	1150	786	420	307	294	202	182	3950	3620	4930
14	356	396	994	786	424	307	293	201	197	3680	3680	4910
15	471	1730	1200	768	425	307	288	203	195	5220	4070	4890
16	658	1130	1220	742	406	307	283	201	203	6440	5700	4880
17	888	395	1290	732	395	307	282	196	191	5870	5810	4850
18	886	344	1780	567	395	307	277	190	188	5590	5810	4830
19	909	1390	2310	529	397	313	270	186	182	4810	5660	4970
20	894	2590	3260	527	395	327	270	182	180	3890	5460	4940
21	894	3860	2840	527	392	319	265	202	178	3280	5430	4810
22	894	4450	1110	527	387	315	264	238	177	2830	5410	4370
23	905	4970	1080	527	386	310	266	233	174	2530	5390	2420
24	865	4970	1080	521	379	300	264	224	169	2330	5380	546
25	885	3800	1070	519	379	299	264	220	167	2140	5350	240
26	865	4100	1070	519	373	299	264	227	139	1990	5310	235
27	865	4910	1040	519	371	300	264	222	147	1830	5300	228
28	865	4440	1100	536	371	300	261	229	149	1730	5270	208
29	865	4390	781	639	---	300	257	217	202	1620	5250	198
30	793	3560	772	730	---	300	250	238	1670	1550	5230	194
31	528	---	772	732	---	297	---	236	---	1530	5200	---
TOTAL	19766	56837	47643	22632	13148	9767	8543	6573	6969	259520	118580	110209
MEAN	637.6	1895	1537	730.1	469.6	315.1	284.8	212.0	232.3	8372	3825	3674
MAX	909	4970	3260	989	730	374	335	238	1670	62600	5810	5180
MIN	288	344	772	519	371	297	250	182	139	1120	1180	194
AC-FT	39210	112700	94500	44890	26080	19370	16950	13040	13820	514800	235200	218600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2002z, BY WATER YEAR (WY)

	MEAN	420.7	516.7	458.9	540.9	524.1	603.7	598.8	618.6	751.6	902.8	614.5	455.9
MAX	2033	2410	2233	4704	2379	4254	3826	2450	2948	8372	3866	3674	
(WY)	1999	2001	1999	1992	1992	1992	1992	1992	1992	1992	1978	2002	
MIN	39.0	85.4	67.9	71.2	106	98.0	57.5	59.3	47.4	24.8	36.9	38.5	
(WY)	1964	1964	1964	1964	1990	1971	1971	1971	1984	1984	1996	1984	

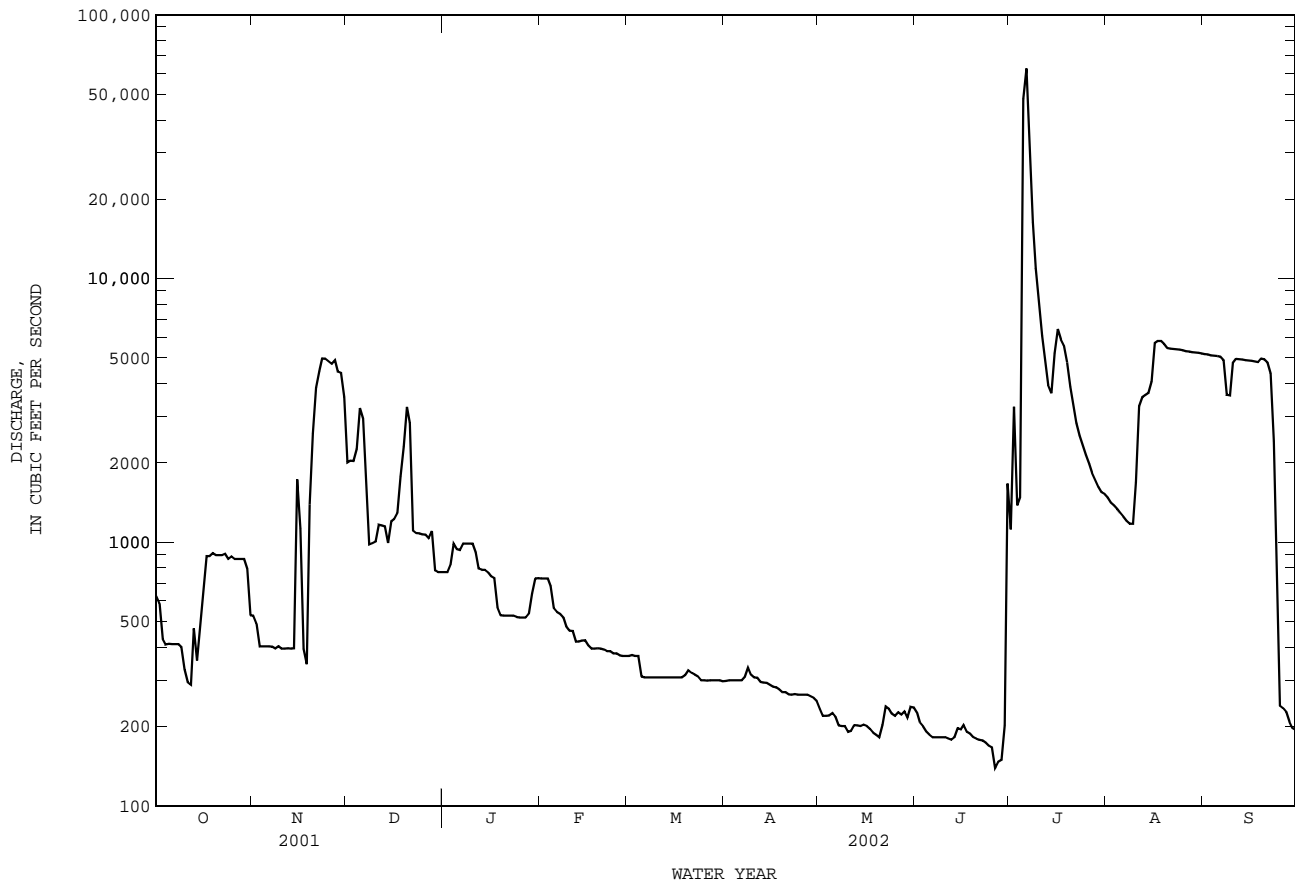
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1964 - 2002z	
ANNUAL TOTAL	322269		680187			
ANNUAL MEAN	882.9		1864		584.4	
HIGHEST ANNUAL MEAN					2057	
LOWEST ANNUAL MEAN					84.9	
HIGHEST DAILY MEAN	4970	Nov 23	62600	Jul 6	62600	Jul 6 2002
LOWEST DAILY MEAN	153	Aug 16	139	Jun 26	2.6	Sep 28 1984
ANNUAL SEVEN-DAY MINIMUM	156	Aug 10	160	Jun 22	2.7	Sep 25 1984
MAXIMUM PEAK FLOW			73200	Jul 6	1142000	Oct 17 1998
MAXIMUM PEAK STAGE			a29.44	Jul 6	a35.57	Oct 17 1998
ANNUAL RUNOFF (AC-FT)	639200		1349000		423400	
10 PERCENT EXCEEDS	1420		4970		1010	
50 PERCENT EXCEEDS	772		527		304	
90 PERCENT EXCEEDS	256		201		103	

z Period of regulated streamflow.

i From indirect measurement of peak flow.

a From floodmark.

08168500 Guadalupe River above Comal River at New Braunfels, TX--Continued



GUADALUPE RIVER BASIN

08168700 Panther Canyon at New Braunfels, TX

LOCATION.--Lat 29°42'47", long 98°08'14", Comal County, Hydrologic Unit 12100202, on right bank, 5 ft above Comal Springs, 50 ft upstream of Comal River, in Landa Park, 0.8 mi south of Loop 337.

DRAINAGE AREA.--0.73 mi².

PERIOD OF RECORD.--

CHEMICAL DATA: July 2002.

BIOCHEMICAL DATA: July 2002.

PESTICIDE DATA: July 2002.

INSTRUMENTATION.--Water stage recorder. Discharge-activated automatic sampler. Tipping bucket raingage. Telephone telmeter at station.

REMARKS.--Water-quality samples and associated discharge and precipitation data were collected for selected storm events.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	STORM WATER FLOW (MGD) (81395)	ELAPSED TIME OF STORM (HOURS) (00135)	PRECIP- ITATION DURA- TION OF STORM EVENT (MIN) (00117)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	E COLI, MTEC MF (COL/ 100 ML) (31633)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	PRECIP- ITATION TOTAL INCHES/ STORM (82381)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	
JUL 01-01 01...	1027 1048	146 --	8.0 --	4.2 --	7.7 --	864 --	20 --	--i --	-- 6600	-- 43000	1.8 --	25 --	.54 --	
Date		NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L) (00556)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	BARIIUM, DIS- SOLVED (UG/L AS BA) (01005)	
JUL 01-01 01...	E.027 --	1.3 --	.40 --	.72 --	.12 --	.06 --	11.5 --	<.01 --	<16 --	9 --	7 --	.13 --	12 --	
Date		BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
JUL 01-01 01...		<.06 --	<.04 --	E.7 --	.13 --	1.6 --	2 --	E.04 --	1.1 --	.5 --	.40 --	<1 --	2 --	.06 --
Date				ALDRIN, TOTAL (UG/L) (39330)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L) (39350)	DI- ELDRIN TOTAL (UG/L) (39380)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX- APHENE, TOTAL (UG/L) (39400)			
JUL 01-01 01...				<.001 --	<.1 --	<.001 --	<.002 --	<.002 --	<.001 --	<.0007 --	<1 --			

Remark codes used in this report:

< -- Less than

E -- Estimated value

Null value qualifier codes used in this report:

i -- Required sample type not received

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GUADALUPE RIVER BASIN

08168710 Comal Springs 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.--Not applicable. This is a springflow station.

PERIOD OF RECORD.--Dec. 1927 to Sept. 1932 (fragmentary daily springflow discharges), Oct. 1932 to current year. Records of daily springflow discharges prior to Oct. 1995, obtained by applying modified Institute of Hydrology base-flow separation program BFI 4.02 to entire period of record of Comal River at New Braunfels (station 08169000), are available in files of the U.S. Geological Survey. Periodic discharge measurements made in 1882, 1896-1906, 1910-11, 1915, 1921, and 1924-30 were published as miscellaneous measurements (some years published as "Comal River").

GAGE.--Water-stage recorder. Prior to Jan. 7, 1928, nonrecording gage at same site. Concrete control since Oct. 3, 1955. Datum of gage is 582.80 ft above NGVD of 1929. Datum originally 0.19 ft lower was revised to current level effective Oct. 1, 1936.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Springflow is equal to flow at Comal River at New Braunfels (station 08169000) except during periods of local runoff. During periods of local runoff, springflow is separated from river flow using modified Institute of Hydrology base-flow separation program BFI 4.02. All days with springflow separations, and all days in which river flow were estimated are flagged as estimated springflow days. Comal Springs emerge from the Edwards and associated limestones in the Balcones Fault Zone about 1 mi upstream. Flow is affected at times by cleanup operations by the city of New Braunfels at Landa Park Lake. No flow June 13 to Nov. 3, 1956.

DISCHARGE (SEPARATION BY MODEL), CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	333	338	391	404	374	380	362	348	310	e313	386	368
2	333	338	e399	404	378	378	360	343	311	e338	386	370
3	334	338	e406	403	379	379	360	342	306	e363	388	366
4	335	340	e402	403	380	380	359	343	305	391	386	363
5	335	339	406	e405	387	380	360	341	304	e391	383	365
6	335	338	402	407	384	381	363	340	e299	e392	382	363
7	336	339	397	402	385	381	e362	336	295	e392	383	e372
8	336	338	e400	399	386	377	e362	333	296	e393	383	e381
9	335	339	e403	398	386	374	e361	330	e292	e393	384	e390
10	336	341	406	398	388	376	360	328	289	e394	e385	e399
11	335	342	e406	397	392	375	356	328	290	e394	386	409
12	336	343	e406	398	392	374	352	327	285	392	393	403
13	e341	342	e407	396	391	370	356	327	e281	394	388	399
14	e347	345	407	394	391	370	356	323	278	394	386	396
15	e345	e352	e416	393	390	369	355	321	282	395	386	395
16	347	e359	e412	393	391	367	358	317	282	400	386	396
17	347	e365	e415	392	391	369	360	319	278	394	390	391
18	347	e372	e417	392	391	367	360	319	273	390	385	389
19	345	379	420	389	389	e370	360	317	270	392	384	e389
20	345	383	419	387	387	373	359	319	268	394	382	e388
21	344	385	416	386	386	367	361	315	263	400	379	388
22	344	388	412	385	386	366	359	314	264	399	375	384
23	343	390	410	384	385	368	357	313	261	394	378	388
24	342	388	411	385	386	368	357	311	e256	391	376	386
25	340	385	409	380	382	367	354	312	252	390	374	386
26	338	383	406	378	377	362	356	317	251	390	373	386
27	339	384	405	379	379	363	351	317	247	390	368	386
28	339	e388	406	375	380	363	353	e316	251	388	366	386
29	340	e391	405	369	---	361	350	314	e270	387	e368	385
30	339	395	405	373	---	363	347	e311	e291	383	369	387
31	343	---	404	376	---	363	---	309	---	387	369	---
TOTAL	10534	10847	12626	12124	10793	11501	10726	10050	8400	11998	11807	11554
MEAN	339.8	361.6	407.3	391.1	385.5	371.0	357.5	324.2	280.0	387.0	380.9	385.1
MAX	347	395	420	407	392	381	363	348	311	400	393	409
MIN	333	338	391	369	374	361	347	309	247	313	366	363
AC-FT	20890	21520	25040	24050	21410	22810	21280	19930	16660	23800	23420	22920

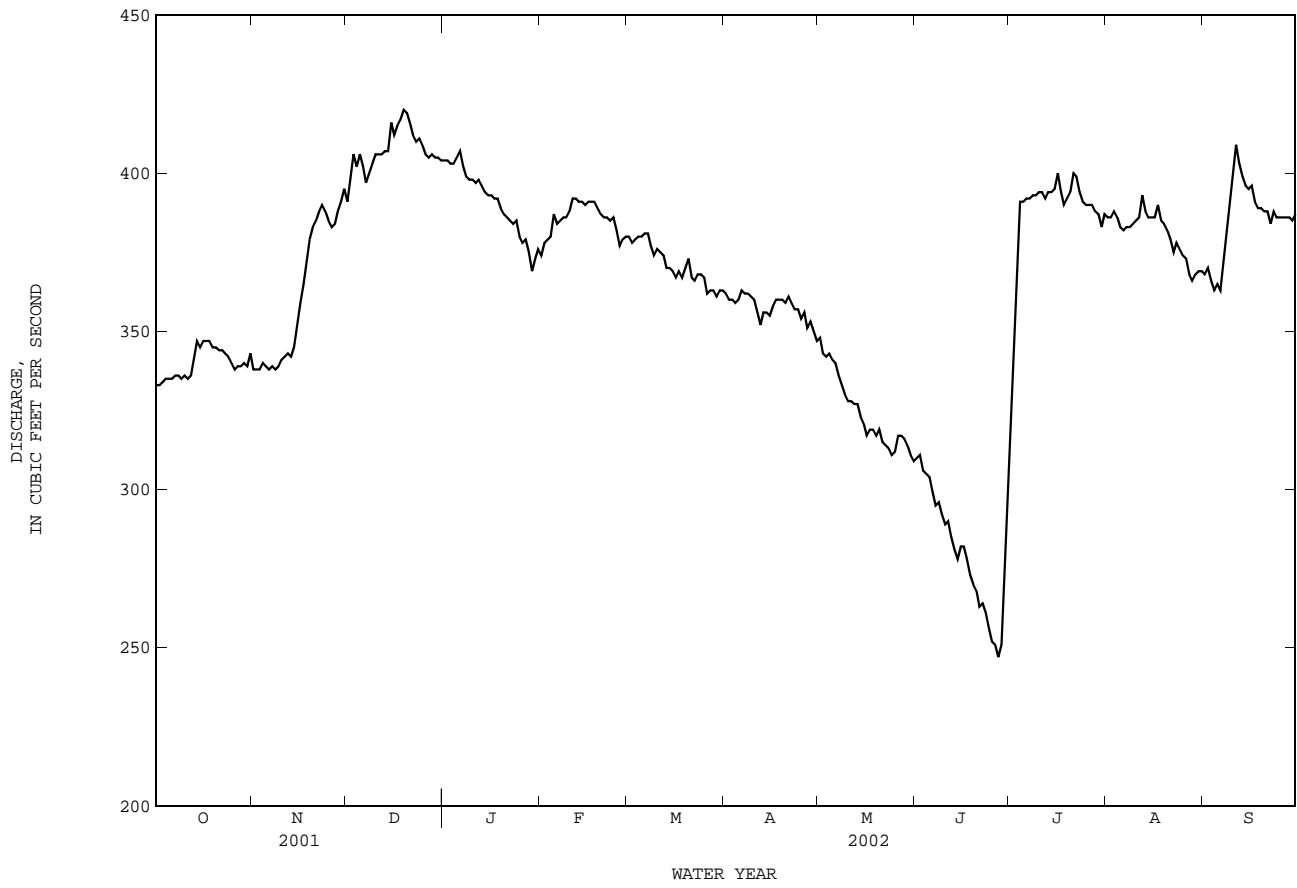
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2002, BY WATER YEAR (WY)

	MEAN	273.7	287.0	296.9	302.0	303.3	301.2	296.6	293.8	284.6	269.5	254.7	261.2
MAX	465	450	437	430	446	477	474	456	481	465	465	427	
(WY)	1974	1974	1974	1974	1992	1992	1992	1992	1992	1992	1992	1992	1992
MIN	0.000	21.5	35.6	51.1	49.5	65.4	41.5	27.8	3.67	0.000	0.000	0.000	
(WY)	1957	1957	1957	1957	1957	1957	1956	1956	1956	1956	1956	1956	1956

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1933 - 2002
ANNUAL TOTAL	124669	132960	
ANNUAL MEAN	341.6	364.3	285.3
HIGHEST ANNUAL MEAN			402
LOWEST ANNUAL MEAN			45.5
HIGHEST DAILY MEAN	420	420	534
LOWEST DAILY MEAN	243	247	0.00
ANNUAL SEVEN-DAY MINIMUM	247	255	0.00
ANNUAL RUNOFF (AC-FT)	247300	263700	206700
10 PERCENT EXCEEDS	388	401	383
50 PERCENT EXCEEDS	349	375	304
90 PERCENT EXCEEDS	281	314	169

e Estimated

08168710 Comal Springs at New Braunfels, TX--Continued



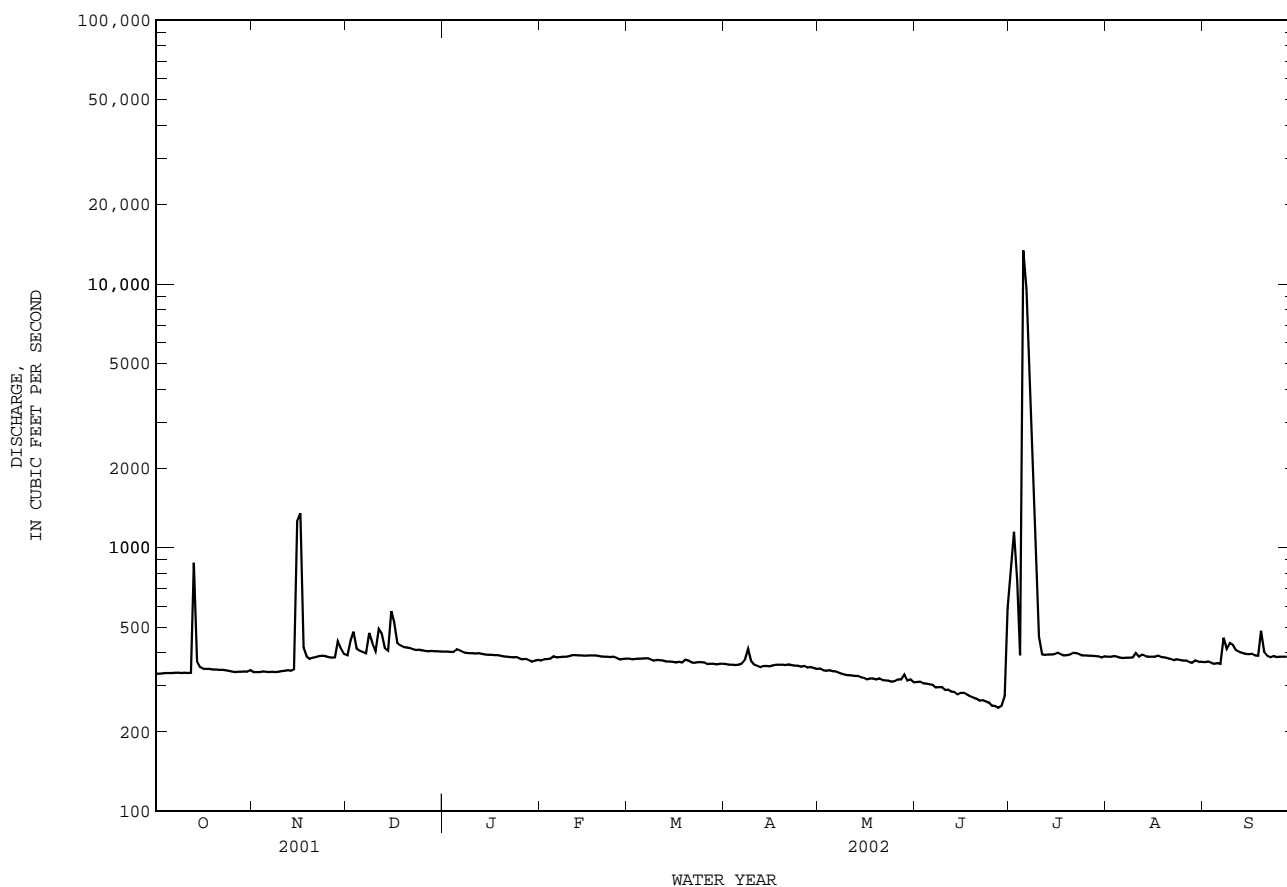
08169000 Comal River at New Braunfels, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1933 - 2002	
ANNUAL TOTAL	130276		166432		297.9	
ANNUAL MEAN	356.9		456.0		482	
HIGHEST ANNUAL MEAN					50.9	
LOWEST ANNUAL MEAN					22000	
HIGHEST DAILY MEAN	1350	Nov 16	13400	Jul 5	5.5	Jun 7 1956
LOWEST DAILY MEAN	243	Aug 25	247	Jun 27	8.5	Jun 2 1956
ANNUAL SEVEN-DAY MINIMUM	247	Aug 20	255	Jun 22	c73500	Oct 17 1998
MAXIMUM PEAK FLOW			20500	Jul 5	a39.28	Oct 17 1998
MAXIMUM PEAK STAGE			a24.09	Jul 5	215800	
ANNUAL RUNOFF (AC-FT)	258400		330100		394	
10 PERCENT EXCEEDS	406		413		304	
50 PERCENT EXCEEDS	351		379		171	
90 PERCENT EXCEEDS	281		316			

e Estimated

c From rating curve extended above indirect discharge measurements of 55,800 ft³/s and 60,800 ft³/s.

a From floodmark.



GUADALUPE RIVER BASIN

08169500 Guadalupe River at New Braunfels, TX

LOCATION.--Lat 29°41'52", long 98°06'23", Comal County, Hydrologic Unit 12100202, in second floor of abandoned turbine building at Comal Mills, 300 ft. downstream from Missouri Pacific Railroad, 0.4 miles upstream from IH-35, 0.7 mile downstream from mouth of Comal River, 23.7 mi downstream from Canyon Lake, and at mile 279.3.

DRAINAGE AREA.--1,652 mi², of which 1,432 mi² is above Canyon Dam.

PERIOD OF RECORD.--Jan. 1915 to Dec. 1927 (daily mean discharge), Apr. 1974 to Sept. 1999 (annual peak discharge), Oct. 1999 to current year (daily mean stage).
Water-quality records.--Chemical data: Oct. 1982 to Feb. 1998.

GAGE.--Water-stage recorder. Datum of gage is 572.55 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair. Interruptions in the record were due to malfunction of the instrument. Since reactivation of gage in 1974, at least 10% of the contributing drainage area has been regulated. Small diversions for irrigation above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.-- 12 years (water years 1916-27), 751 ft³/s (544,100 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1915-28).-- Maximum discharge, 56,600 ft³/s Sept. 10, 1921 (gage height, 28.60 ft); minimum discharge 270 ft³/s July 20, 1918.

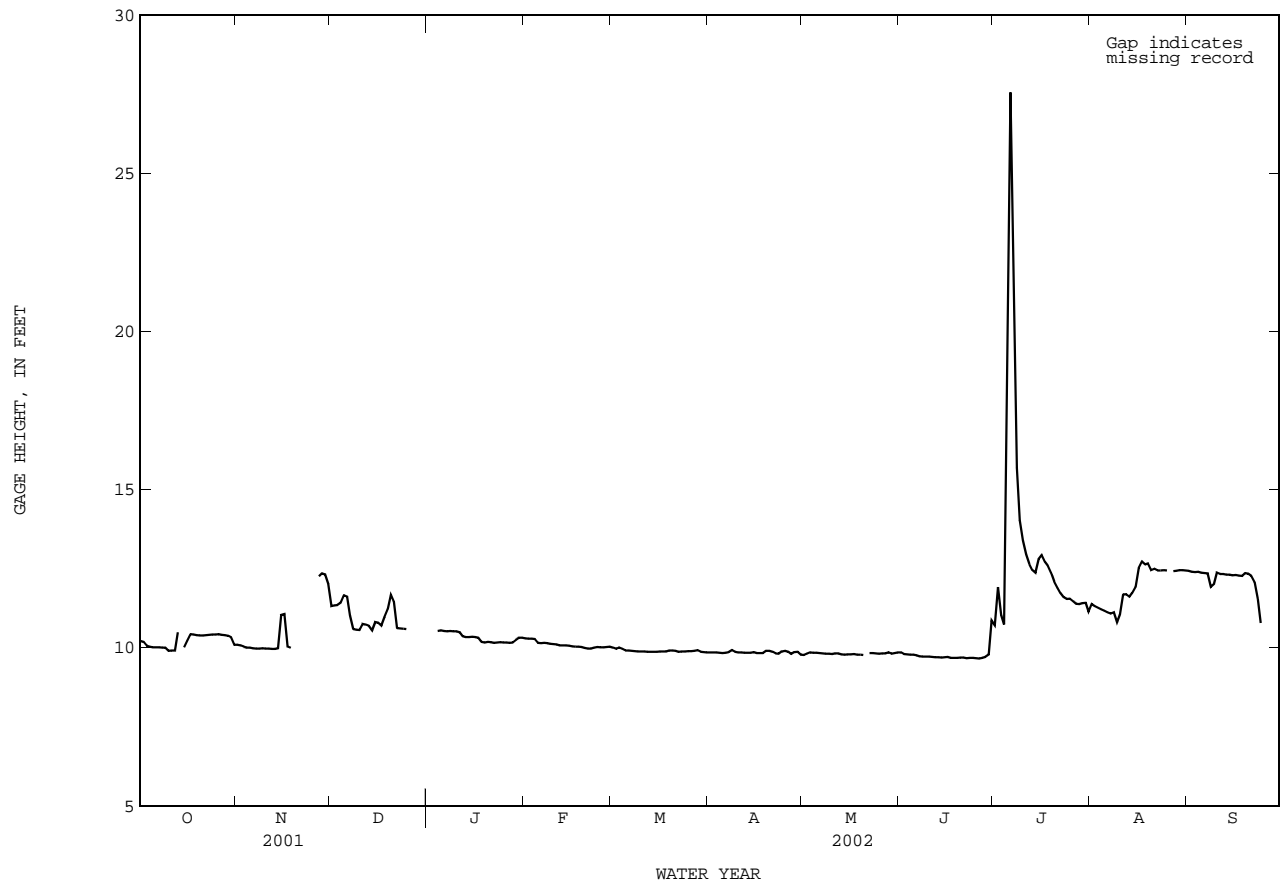
EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1845, 39.5 ft Aug. 1869 and in Dec. 1913, from information by local residents. Maximum discharge, 101,000 ft³/s June 15, 1935 (gage height, unknown).

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 29.66 ft, July 6; minimum gage height, 9.65 ft, June 26.

GAGE HEIGHT FROM DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.21	10.10	11.32	---	10.30	10.00	9.86	9.77	9.85	10.72	11.38	12.43
2	10.19	10.08	11.34	---	10.29	9.96	9.86	9.82	9.81	11.92	11.31	12.40
3	10.06	10.03	11.35	---	10.29	10.00	9.86	9.85	9.79	11.03	11.26	12.39
4	10.03	10.00	11.42	10.53	10.27	9.97	9.84	9.85	9.78	10.73	11.21	12.40
5	10.02	10.00	11.66	10.55	10.16	9.91	9.83	9.84	9.78	22.35	11.17	12.38
6	10.01	9.98	11.61	10.53	10.15	9.91	9.84	9.83	9.77	27.55	11.12	12.36
7	10.01	9.98	11.01	10.52	10.15	9.90	9.87	9.82	9.73	21.27	11.08	12.35
8	10.01	9.98	10.59	10.53	10.14	9.90	9.92	9.81	9.72	15.69	11.11	11.93
9	10.00	9.98	10.58	10.53	10.13	9.88	9.87	9.82	9.72	14.04	10.80	12.02
10	9.91	9.98	10.56	10.52	10.12	9.88	9.86	9.81	9.72	13.39	11.04	12.37
11	9.92	9.97	10.75	10.49	10.11	9.88	9.85	9.82	9.71	12.95	11.68	12.33
12	9.91	9.96	10.73	10.37	10.08	9.87	9.84	9.82	9.70	12.65	11.70	12.33
13	10.49	9.96	10.69	10.34	10.08	9.87	9.84	9.80	9.71	12.46	11.61	12.31
14	---	9.98	10.55	10.34	10.08	9.88	9.84	9.78	9.69	12.37	11.74	12.31
15	10.01	11.04	10.81	10.35	10.07	9.87	9.86	9.80	9.70	12.80	11.92	12.29
16	10.22	11.07	10.80	10.34	10.04	9.88	9.83	9.79	9.71	12.93	12.53	12.30
17	10.43	10.03	10.70	10.32	10.04	9.89	9.83	9.80	9.68	12.72	12.73	12.28
18	10.42	9.99	10.98	10.19	10.04	9.89	9.83	9.78	9.68	12.59	12.64	12.27
19	10.40	---	11.22	10.17	10.03	9.91	9.91	9.78	9.68	12.37	12.66	12.37
20	10.39	---	11.69	10.18	10.0	9.91	9.90	9.77	9.69	12.09	12.45	12.34
21	10.39	---	11.48	10.18	9.98	9.90	9.87	---	9.69	11.90	12.50	12.27
22	10.40	---	10.62	10.16	9.97	9.87	9.82	9.83	9.67	11.74	12.44	12.07
23	10.41	---	10.61	10.17	10.01	9.88	9.81	9.83	9.68	11.60	12.45	11.54
24	10.42	---	10.61	10.17	10.03	9.88	9.89	9.82	9.68	11.55	12.45	10.78
25	10.42	---	10.59	10.16	10.02	9.89	9.90	9.82	9.67	11.56	12.45	---
26	10.43	---	---	10.17	10.02	9.90	9.87	9.82	9.66	11.47	---	---
27	10.41	12.26	---	10.16	10.02	9.91	9.80	9.82	9.68	11.39	12.42	---
28	10.40	12.35	---	10.17	10.03	9.93	9.87	9.85	9.71	11.38	12.43	---
29	10.38	12.32	---	10.25	---	9.87	9.87	9.81	9.78	11.41	12.45	---
30	10.33	12.02	---	10.31	---	9.86	9.78	9.84	10.86	11.42	12.45	---
31	10.10	---	---	10.32	---	9.86	---	9.85	---	11.14	12.44	---
MEAN	---	---	---	---	10.09	9.90	9.85	---	9.76	13.26	---	---
MAX	---	---	---	---	10.30	10.00	9.92	---	10.86	27.55	---	---
MIN	---	---	---	---	9.97	9.86	9.78	---	9.66	10.72	---	---

08169500 Guadalupe River at New Braunfels, TX--Continued



LOCATION.-- Lat 29°53'25", long 97°56'11", Hays County, Hydrologic Unit 12100203, on left bank of concrete-lined drainage channel along Sessoms Road, 600 ft upstream of San Marcos River, 0.10 mi northwest of Loop 82, 1.4 mi west of Interstate Highway 35.

PERIOD OF RECORD.--

CHEMICAL DATA: Jan. 2002 to May 2002.
BIOCHEMICAL DATA: Jan. 2002 to May 2002.
PESTICIDE DATA: Jan. 2002 to May 2002.

REMARKS.--Water-quality samples and associated discharge and precipitation data were collected for selected storm events.

Date	Time	SPE- CIFIC CON- DUCT- ANCE	PH WATER WHOLE FIELD (STAND- ARD	TEMPER- ATURE WATER (DEG C)	STORM WATER FLOW (MGD)	ELAPSED TIME OF STORM (HOURS)	PRECIP- ITATION DURA- TION OF STORM (MIN)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	E COLI, MFC MF (COL/ 100 ML)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML)	PRECIP- ITATION TOTAL (INCHES/ STORM)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	
		(US/CM) (00095)	(UNITS) (00400)	(DEG C) (00010)	(MGD) (81395)	(HOURS) (00135)	(MIN) (00117)	(MG/L) (00340)	(MG/L) (00310)	(COL/ 100 ML) (31633)	(COL/ 100 ML) (31673)	(INCHES/ STORM) (82381)	(MG/L) (00530)	
JAN 31-31 31...	0805 0825	104 --	7.6 --	17.5 --	1.4 --	5.5 --	181 --	60 --	14.0 --	-- 6200	-- 64000	.40 --	-- --	
MAR 19-20 19...	2020 2045	-- --	7.9 --	17.0 --	3.7 --	4.4 --	217 --	70 --	14.0 --	-- 46000	-- 61000	.93 --	-- --	
MAY 28-28 28...	0047 0107	142 --	8.0 --	16.5 --	2.7 --	8.3 --	186 --	50 --	--r --	-- 22000	-- 71000	1.7 --	376 --	
MAY 29-29 29...	1229 1249	165 --	7.9 --	-- --	2.7 --	3.0 --	102 --	60 --	--r --	-- 22000	-- 46000	.36 --	176 --	
Date		NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N) (00623)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)
JAN 31-31 31...	.64 --	.016 --	.651 --	.212 --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	.072 --	.221 --
MAR 19-20 19...	.86 --	.019 --	.877 --	.051 --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	.048 --	.147 --
MAY 28-28 28...	-- --	-- --	.73 --	.121 --	2.4 --	1.6 --	.54 --	.66 --	1.7 --	.65 --	.14 --	-- --	-- --	-- --
MAY 29-29 29...	-- --	-- --	.57 --	.240 --	2.1 --	1.3 --	.54 --	.78 --	1.5 --	.40 --	.10 --	-- --	-- --	-- --
Date		CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECov- GRAVI- METRIC (MG/L) (00556)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	LEAD, TOTAL RECov- ERABLE (UG/L AS PB) (01051)
JAN 31-31 31...	23.0 --	<.01 --	<16 --	E4 --	6 --	.34 --	20 --	<.06 --	E.02 --	.9 --	.33 --	2.7 --	15 --	
MAR 19-20 19...	27.5 --	<.01 --	<16 --	<7 --	9 --	.56 --	15 --	<.06 --	E.03 --	2.3 --	.34 --	3.6 --	29 --	
MAY 28-28 28...	19.3 --	<.01 --	<16 --	<7 --	13 --	.28 --	11 --	<.06 --	<.04 --	1.3 --	.32 --	2.5 --	32 --	
MAY 29-29 29...	19.0 --	<.01 --	E8n --	<7 --	15 --	.57 --	14 --	<.06 --	E.03 --	1.4 --	.35 --	4.3 --	17 --	

08169948 San Marcos River Tributary at Sessoms Road, San Marcos, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L) (39350)	DI- ELDRIN TOTAL (UG/L) (39380)	ENDRIN WATER REC (UG/L) (39390)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)
JAN 31-31 31...	.16 --	39.5 --	3.3 --	.87 --	<1 --	10 --	.20 --	<.001 --	<.1 --	<.001 --	<.002 --	<.002 --	<.001 --
MAR 19-20 19...	.23 --	16.9 --	2.5 --	1.23 --	<1 --	8 --	.12 --	-- --	-- --	-- --	-- --	-- --	-- --
MAY 28-28 28...	.26 --	13.2 --	2.3 --	1.40 --	<1 --	4 --	.10 --	<.001 --	<.1 --	<.001 --	<.002 --	<.002 --	<.001 --
MAY 29-29 29...	.70 --	20.5 --	2.6 --	2.25 --	<1 --	12 --	.11 --	<.001 --	<.1 --	<.001 --	<.002 --	<.002 --	<.001 --

Date	LINDANE TOTAL (UG/L) (39340)	TOX- APHENE, TOTAL (UG/L) (39400)
JAN 31-31 31...	<.0007 --	<1 --
MAR 19-20 19...	-- --	-- --
MAY 28-28 28...	<.0007 --	<1 --
MAY 29-29 29...	<.0007 --	<1 --

Remark codes used in this report:

< -- Less than

E -- Estimated value

Value qualifier codes used in this report:

n -- Below the NDV

Null value qualifier codes used in this report:

r -- Sample ruined in preparation

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.

PERIOD OF RECORD.--May 1956 to current year. May 1956 to Sept. 1988, at site 0.7 mi downstream from bridge on Interstate Highway 35 and 2.1 mi upstream from Blanco River. Oct. 1988 to Sept. 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 Oct. 1997 published as San Marcos River Springflow at San Marcos.

GAGE.--Water-stage recorder. Datum of gage is 557.67 ft above NGVD of 1929. May 1956 to Sept. 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 NGVD of 1929. Oct. 1988 to Sept. 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Springflow is equal to flow at San Marcos River at San Marcos (station 08170500) except during periods of local runoff. Springflow is separated from runoff using modified Institute of Hydrology base-flow separation program BFI 4.02. Selected springflow values computed using the program are revised on the basis of further examination of the base-flow records. The springflow for all days with springflow separations and all days in which the river flow was estimated, are shown as estimated. San Marcos Springs emerge from the Edwards and associated limestones about 1.1 mi upstream from Interstate Highway 35, in the Balcones Fault Zone.

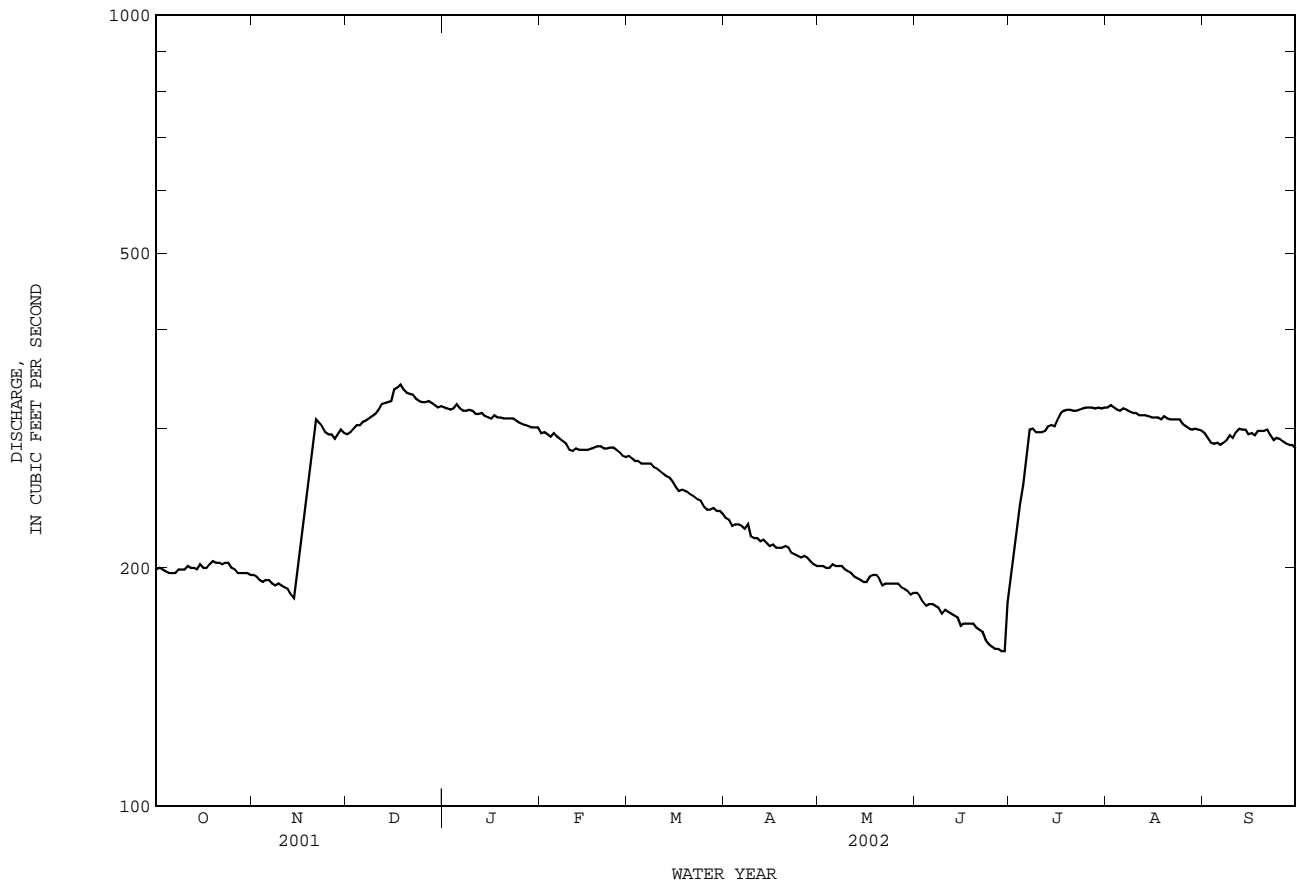
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	196	295	319	296	277	231	201	186	e195	319	296
2	200	195	e297	318	297	275	230	201	184	e209	321	292
3	199	193	300	317	295	273	226	200	181	e225	319	288
4	198	192	303	318	293	273	227	200	179	e241	317	287
5	197	193	303	322	296	271	227	202	180	e255	316	288
6	197	193	306	318	293	271	226	201	180	e276	318	286
7	197	191	307	316	291	271	e224	201	179	299	317	e288
8	199	190	e309	316	289	271	227	201	178	300	315	290
9	199	191	311	317	287	268	219	199	175	297	314	294
10	199	190	313	316	282	267	218	198	177	297	314	292
11	201	189	e317	313	281	265	218	197	176	297	312	297
12	200	188	322	313	283	263	216	195	175	298	312	300
13	e200	185	323	314	282	261	217	194	174	302	312	299
14	199	183	324	311	282	260	215	193	173	303	311	299
15	202	e197	e325	310	282	257	213	192	169	302	310	295
16	200	e213	e336	309	282	253	214	192	e170	e308	310	296
17	200	e229	338	312	283	250	212	195	170	314	310	294
18	e202	e246	341	310	284	251	212	196	170	316	308	298
19	204	e265	336	310	285	e250	212	196	170	317	311	e298
20	203	e286	333	309	285	249	213	194	168	317	309	298
21	203	308	332	309	283	247	212	190	167	316	308	299
22	202	305	331	309	283	246	209	191	166	316	308	294
23	203	302	327	309	284	244	208	191	162	317	308	290
24	203	297	325	307	284	243	207	191	160	318	308	292
25	200	295	324	305	282	239	206	191	159	319	304	291
26	199	295	324	304	280	237	207	191	e158	319	302	289
27	197	291	325	303	277	237	206	189	e158	319	300	287
28	197	e295	323	302	276	238	204	e188	157	318	299	286
29	197	299	321	301	---	236	202	187	157	319	300	286
30	197	296	319	301	---	236	201	185	e181	318	299	283
31	196	---	320	301	---	234	---	186	---	319	298	---
TOTAL	6189	7088	9910	9639	7997	7913	6459	6028	5139	9166	9609	8772
MEAN	199.6	236.3	319.7	310.9	285.6	255.3	215.3	194.5	171.3	295.7	310.0	292.4
MAX	204	308	341	322	297	277	231	202	186	319	321	300
MIN	196	183	295	301	276	234	201	185	157	195	298	283
AC-FT	12280	14060	19660	19120	15860	15700	12810	11960	10190	18180	19060	17400

MEAN	155.0	162.1	167.9	169.6	172.6	173.8	172.0	180.6	188.8	181.2	165.7	157.9
MAX	275	372	355	382	418	445	427	407	415	381	315	292
(WY)	1999	1999	1999	1992	1992	1992	1992	1992	1992	1992	1992	2002
MIN	64.6	70.3	72.0	74.3	72.4	89.3	98.1	67.0	63.6	54.5	53.5	59.1
(WY)	1957	1957	1957	1957	1957	1964	1964	1956	1956	1956	1956	1956

ANNUAL TOTAL	84646		93909			
ANNUAL MEAN	231.9		257.3		170.6	
HIGHEST ANNUAL MEAN					331	1992
LOWEST ANNUAL MEAN					58.1	1956
HIGHEST DAILY MEAN	341	Dec 18	341	Dec 18	451	Mar 12 1992
LOWEST DAILY MEAN	167	Aug 19	157	Jun 28	46	Aug 15 1956
ANNUAL SEVEN-DAY MINIMUM	170	Aug 23	159	Jun 23	50	Aug 10 1956
ANNUAL RUNOFF (AC-FT)	167900		186300		123600	
10 PERCENT EXCEEDS	295		318		250	
50 PERCENT EXCEEDS	229		282		160	
90 PERCENT EXCEEDS	184		188		103	

e Estimated

08170000 San Marcos Springs at San Marcos, TX--Continued



GUADALUPE RIVER BASIN

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.--47 mi² of contributing surface drainage, however, most of the time flow is solely from San Marcos Springs.

PERIOD OF RECORD.--July 1915 to Sept. 1921 (daily mean discharges below base discharge), May to Sept. 1956, Oct. 1994 to current year. Periodic measurements were made outside period of record since Nov. 14, 1894, and were published as miscellaneous measurements.

REVISED RECORDS.--WSP 1923: Drainage area. WDR 1998: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 557.67 ft above NGVD of 1929. July 1915 to Jan. 1916, nonrecording gage at site 0.5 mi upstream from Interstate Highway 35, and Mar. 1916 to Sept. 1921, water-stage recorder about 0.7 mi downstream from Interstate Highway 35; datum relations unknown. May to Sept. 1956, water-stage recorder 0.7 mi downstream from Interstate Highway 35 and 2.1 mi upstream from Blanco River, at datum 536.82 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good. No known regulation. Entire flow of river is from San Marcos Springs except during periods of local runoff. San Marcos Springs emerge from the Edwards and associated limestones about 1.1 mi upstream from Interstate Highway 35, in the Balcones Fault Zone.

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	196	295	319	296	277	231	201	186	259	319	296
2	200	195	304	318	297	275	230	201	184	668	321	292
3	199	193	300	317	295	273	226	200	181	536	319	288
4	198	192	303	318	293	273	227	200	179	416	317	287
5	197	193	303	322	296	271	227	202	180	323	316	288
6	197	193	306	318	293	271	226	201	180	307	318	286
7	197	191	307	316	291	271	232	201	179	299	317	305
8	199	190	319	316	289	271	227	201	178	300	315	290
9	199	191	311	317	287	268	219	199	175	297	314	294
10	199	190	313	316	282	267	218	198	177	297	314	292
11	201	189	325	313	281	265	218	197	176	297	312	297
12	200	188	322	313	283	263	216	195	175	298	312	300
13	217	185	323	314	282	261	217	194	174	302	312	299
14	199	183	324	311	282	260	215	193	173	303	311	299
15	202	e487	348	310	282	257	213	192	169	302	310	295
16	200	e1030	338	309	282	253	214	192	172	318	310	296
17	200	623	338	312	283	250	212	195	170	314	310	294
18	205	564	341	310	284	251	212	196	170	316	308	298
19	204	501	336	310	285	259	212	196	170	317	311	310
20	203	359	333	309	285	249	213	194	168	317	309	298
21	203	308	332	309	283	247	212	190	167	316	308	299
22	202	305	331	309	283	246	209	191	166	316	308	294
23	203	302	327	309	284	244	208	191	162	317	308	290
24	203	297	325	307	284	243	207	191	160	318	308	292
25	200	295	324	305	282	239	206	191	159	319	304	291
26	199	295	324	304	280	237	207	191	165	319	302	289
27	197	291	325	303	277	237	206	189	161	319	300	287
28	197	317	323	302	276	238	204	201	157	318	299	286
29	197	299	321	301	---	236	202	187	157	319	300	286
30	197	296	319	301	---	236	201	185	235	318	299	283
31	196	---	320	301	---	234	---	186	---	319	298	---
TOTAL	6209	9238	9960	9639	7997	7922	6467	6041	5205	10284	9609	8801
MEAN	200.3	307.9	321.3	310.9	285.6	255.5	215.6	194.9	173.5	331.7	310.0	293.4
MAX	217	1030	348	322	297	277	232	202	235	668	321	310
MIN	196	183	295	301	276	234	201	185	157	259	298	283
AC-FT	12320	18320	19760	19120	15860	15710	12830	11980	10320	20400	19060	17460

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2002, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	217.4	198.3	193.9	189.5	182.9	180.9	174.0	168.4
MAX	729	373	355	312	286	263	255	236
(WY)	1999	1999	1999	1999	2002	2001	2001	1997
MIN	107	93.1	91.5	99.0	98.2	108	101	99.6
(WY)	1997	1997	1997	1997	1997	1996	1996	1996

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1995 - 2002

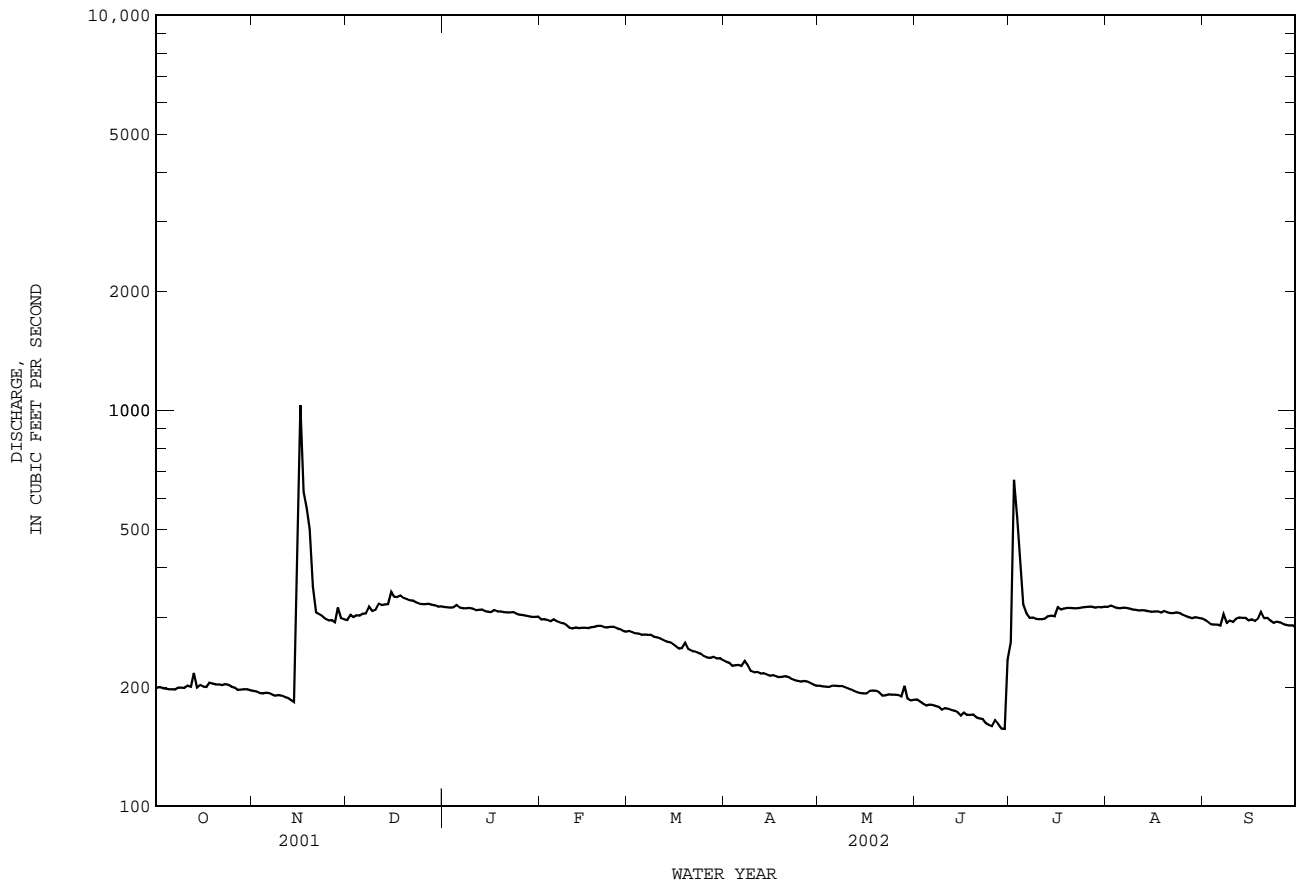
ANNUAL TOTAL	87234	97372	187.7	
ANNUAL MEAN	239.0	266.8	274	1999
HIGHEST ANNUAL MEAN			110	1996
LOWEST ANNUAL MEAN			e6200	Oct 17 1998
HIGHEST DAILY MEAN	e1030	Nov 16	76	Aug 15 1996
LOWEST DAILY MEAN	167	Aug 19	77	Aug 15 1996
ANNUAL SEVEN-DAY MINIMUM	171	Aug 19	i21500	Oct 17 1998
MAXIMUM PEAK FLOW			a21.29	Oct 17 1998
MAXIMUM PEAK STAGE			71	Nov 18 1996
INSTANTANEOUS LOW FLOW			136000	
ANNUAL RUNOFF (AC-FT)	173000	193100		
10 PERCENT EXCEEDS	303	319	296	
50 PERCENT EXCEEDS	233	283	171	
90 PERCENT EXCEEDS	184	189	106	

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08170500 San Marcos River at San Marcos, TX--Continued



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.

PERIOD OF RECORD.--Aug. 1924 to Sept. 1926, June 1928 to current year.

Water-quality records.--Chemical data: Apr. 1962 to Sept. 1979, Feb. 1988 to Sept. 1993, Apr. 1996 to Apr. 1998. Biochemical data: Jan. 1974 to Sept. 1979, Feb. 1988 to Sept. 1993, Apr. 1996 to Apr. 1998. Pesticide data: Jan. 1974 to Sept. 1979, Feb. 1988 to Sept. 1993, Apr. 1996 to Apr. 1998. Sediment data: Nov. 1965 to Apr. 1966, Apr. 1996 to Apr. 1998. Water temperature: Dec. 1976 to Sept. 1978.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 797.23 ft above NGVD of 1929. 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. 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.

[illegible]

08171000 Blanco River at Wimberley, TX--Continued

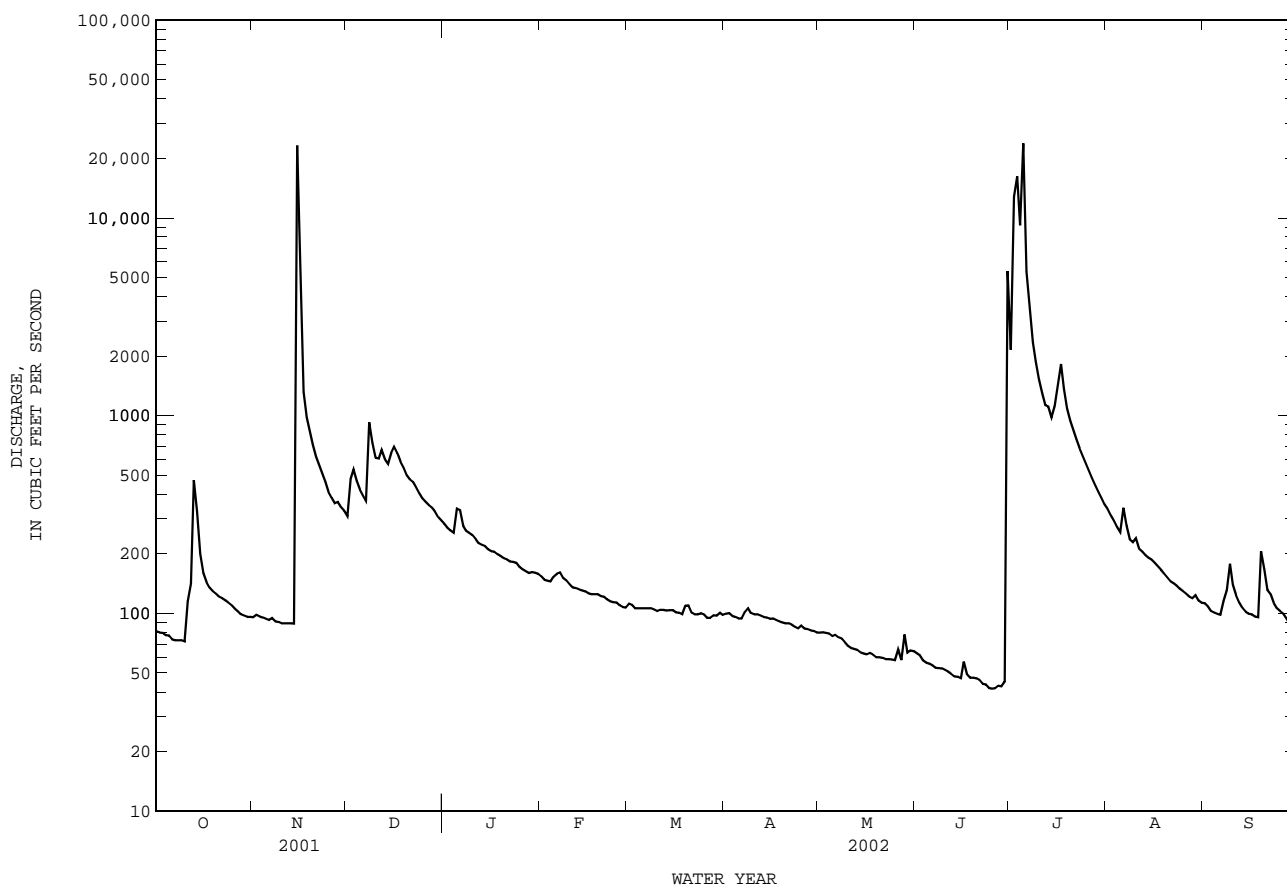
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1924 - 2002h	
ANNUAL TOTAL	106255		188241		140.3	
ANNUAL MEAN	291.1		515.7		566	
HIGHEST ANNUAL MEAN					6.45	
LOWEST ANNUAL MEAN					36900	
HIGHEST DAILY MEAN	23100	Nov 15	23800	Jul 5	0.70	Sep 11 1952
LOWEST DAILY MEAN	35	Aug 24	42	Jun 24	0.79	Jul 17 1956
ANNUAL SEVEN-DAY MINIMUM	36	Aug 19	43	Jun 22	1113000	Aug 12 1956
MAXIMUM PEAK FLOW			108000	Nov 15	a33.30	May 28 1929
MAXIMUM PEAK STAGE			a29.89	Nov 15	101700	May 28 1929
ANNUAL RUNOFF (AC-FT)	210800		373400			
10 PERCENT EXCEEDS	428		634		282	
50 PERCENT EXCEEDS	153		116		54	
90 PERCENT EXCEEDS	50		62		13	

e Estimated

h See PERIOD OF RECORD paragraph.

i From indirect measurement of peak flow.

a From floodmark.



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.

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). Satellite
telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. 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 Blanco River at Wimberley (station 08171000). No flow at times.

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).

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	74	e390	316	152	89	56	34	30	3430	334	90
2	47	72	e530	306	146	88	57	34	29	14300	317	87
3	45	71	e580	298	143	83	55	34	28	17800	296	82
4	45	69	e530	292	140	81	53	35	26	9530	279	80
5	45	68	e485	337	148	80	53	33	26	20100	265	77
6	42	66	e450	377	153	84	53	31	23	5020	302	76
7	41	66	e415	312	153	78	57	32	22	3430	317	108
8	42	69	930	293	142	78	80	30	22	2180	254	114
9	42	66	804	285	137	75	60	30	22	1730	237	158
10	42	65	627	277	131	71	56	29	22	1380	261	140
11	83	66	620	262	124	72	54	27	19	1150	248	109
12	89	67	690	248	121	71	54	27	18	976	225	97
13	361	66	622	240	119	69	53	27	15	938	208	88
14	390	66	579	236	116	68	52	27	13	844	194	82
15	209	18600	754	226	116	68	51	26	9.9	769	185	78
16	152	4920	833	219	112	64	52	25	16	1260	173	80
17	128	e1750	728	217	108	64	52	25	23	1670	163	78
18	117	e1550	639	214	107	65	49	25	12	1250	153	75
19	110	e1210	588	210	110	66	48	24	9.4	965	144	149
20	104	e1010	537	203	105	94	48	23	9.1	828	137	248
21	100	e860	506	204	103	67	47	24	8.7	741	131	126
22	97	e730	489	199	100	62	47	24	7.2	669	125	111
23	93	e640	457	196	97	61	45	24	5.0	607	119	98
24	90	e560	428	193	95	61	43	24	4.2	557	113	88
25	83	e500	408	183	94	62	42	26	4.0	518	108	83
26	80	e460	393	175	89	58	44	27	4.1	482	103	80
27	78	e430	377	172	86	56	40	30	14	449	99	77
28	77	e410	370	167	86	57	40	47	5.2	422	96	72
29	76	e400	353	167	---	56	39	40	4.2	397	95	69
30	75	e390	336	164	---	58	36	31	4750	373	100	67
31	75	---	322	162	---	58	---	31	---	350	90	---
TOTAL	3107	35371	16770	7350	3333	2164	1516	906	5201.0	95115	5871	2967
MEAN	100.2	1179	541.0	237.1	119.0	69.81	50.53	29.23	173.4	3068	189.4	98.90
MAX	390	18600	930	377	153	94	80	47	4750	20100	334	248
MIN	41	65	322	162	86	56	36	23	4.0	350	90	67
AC-FT	6160	70160	33260	14580	6610	4290	3010	1800	10320	188700	11650	5890
CFSM	0.24	2.86	1.31	0.58	0.29	0.17	0.12	0.07	0.42	7.45	0.46	0.24
IN.	0.28	3.19	1.51	0.66	0.30	0.20	0.14	0.08	0.47	8.59	0.53	0.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2002, BY WATER YEAR (WY)

MEAN	149.9	147.4	162.1	155.0	197.4	173.1	182.9	231.8	305.3	166.4	45.59	55.71
MAX	1646	1179	1775	1319	1511	1078	906	1148	2459	3068	196	348
(WY)	1999	2002	1992	1968	1992	1992	1977	1958	1997	2002	1973	1986
MIN	0.000	0.000	0.000	0.000	0.000	0.14	0.000	1.96	0.000	0.000	0.000	0.000
(WY)	1964	1964	1964	1957	1990	2000	2000	1964	1956	1956	1956	1956

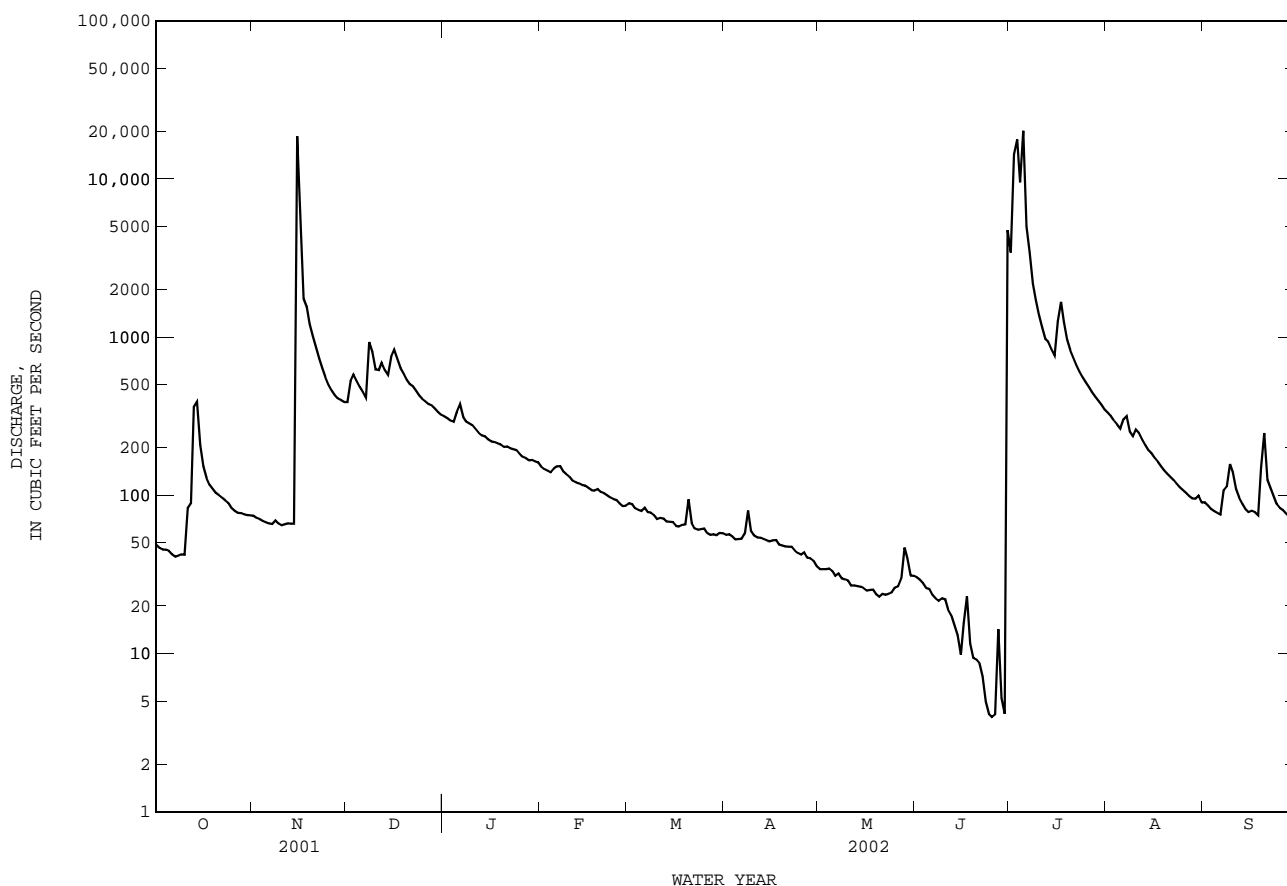
08171300 Blanco River near Kyle, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1956 - 2002	
ANNUAL TOTAL	98316.50		179671.0		165.1	
ANNUAL MEAN	269.4		492.2		625	
HIGHEST ANNUAL MEAN					3.44	
LOWEST ANNUAL MEAN					26000	
HIGHEST DAILY MEAN	18600	Nov 15	20100	Jul 5	26000	Oct 17 1998
LOWEST DAILY MEAN	0.00	Aug 14	4.0	Jun 25	0.00	Jun 1 1956
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 19	5.8	Jun 23	0.00	Jun 1 1956
MAXIMUM PEAK FLOW			87300	Nov 15	1105000	Oct 17 1998
MAXIMUM PEAK STAGE			a34.73	Nov 15	a36.30	May 2 1958
ANNUAL RUNOFF (AC-FT)	195000		356400		119600	
ANNUAL RUNOFF (CFSM)	0.65		1.19		0.40	
ANNUAL RUNOFF (INCHES)	8.88		16.22		5.44	
10 PERCENT EXCEEDS	453		677		337	
50 PERCENT EXCEEDS	142		96		53	
90 PERCENT EXCEEDS	9.5		26		1.7	

e Estimated

i From indirect measurement of peak flow.

a From floodmark.



GUADALUPE RIVER BASIN

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.

PERIOD OF RECORD.--Apr. 1939 to current year.

Water-quality records.--Chemical data: Feb. 1944 to Feb. 1959, Sept. 1961 to Apr. 1966, Nov. 1968 to Aug. 1999. Pesticide data: Jun. 1986 to May 1999. Sediment data: Oct. 1960 to Apr. 1966.

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 NGVD of 1929. Prior to Oct. 21, 1988, at site 390 ft downstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Flow is affected at times by discharge from the flood-detention pools of 18 floodwater-retarding structures. These structures control runoff from 105 mi² in the Town, Sink and York Creeks drainage basins.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1859, 40.4 ft in 1869 or 1870, from information by Texas Department of Transportation. Flood of May 29, 1929, reached a stage of 37.1 ft and is the second highest known.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	263	241	930	907	618	396	280	314	237	6170	908	559
2	260	240	1160	890	589	393	280	303	232	11300	882	554
3	257	237	1820	875	580	382	278	295	229	18700	854	548
4	256	234	1340	863	570	376	277	288	226	15200	831	541
5	253	232	1130	901	570	374	275	280	222	10900	810	534
6	249	235	1030	1020	591	376	270	270	218	19000	789	528
7	248	238	974	975	577	374	274	261	221	7720	809	568
8	249	237	1060	901	564	371	4890	258	213	5230	821	643
9	249	240	1700	867	551	361	1030	258	209	3710	778	597
10	248	237	1440	851	537	345	715	254	212	3090	756	617
11	248	238	1530	834	524	332	643	249	208	2610	768	611
12	252	235	2810	812	515	325	601	248	205	2260	753	578
13	607	235	1600	797	508	321	567	247	203	1990	729	560
14	538	234	1370	786	499	316	545	245	203	1920	705	546
15	501	240	2230	776	492	311	527	243	202	1780	687	542
16	386	17900	3900	765	483	308	513	242	213	2120	671	539
17	337	6900	1990	753	474	307	500	242	223	3680	662	544
18	313	2860	1610	745	467	305	441	241	205	4010	651	536
19	303	2200	1420	732	463	309	434	238	203	2380	641	549
20	295	1910	1310	720	458	342	444	241	206	1900	631	594
21	290	1580	1230	708	446	332	435	239	203	1670	627	670
22	284	1370	1180	700	435	315	424	234	196	1520	626	591
23	281	1230	1150	690	429	302	411	230	193	1410	620	560
24	276	1140	1100	684	422	299	400	229	193	1310	610	547
25	270	1060	1060	669	416	298	389	228	191	1230	597	538
26	265	985	1040	656	409	297	376	228	192	1170	585	531
27	261	937	1020	646	407	291	364	225	219	1110	579	526
28	257	946	996	638	398	290	350	284	203	1060	568	521
29	255	1190	979	627	---	286	339	310	195	1010	567	518
30	246	1050	956	620	---	284	326	349	2010	976	573	515
31	242	---	929	621	---	282	---	257	---	941	566	---
TOTAL	9239	46811	43994	24029	13992	10200	17598	8030	8085	139077	21654	16805
MEAN	298.0	1560	1419	775.1	499.7	329.0	586.6	259.0	269.5	4486	698.5	560.2
MAX	607	17900	3900	1020	618	396	4890	349	2010	19000	908	670
MIN	242	232	929	620	398	282	270	225	191	941	566	515
AC-FT	18330	92850	87260	47660	27750	20230	34910	15930	16040	275900	42950	33330

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002, BY WATER YEAR (WY)

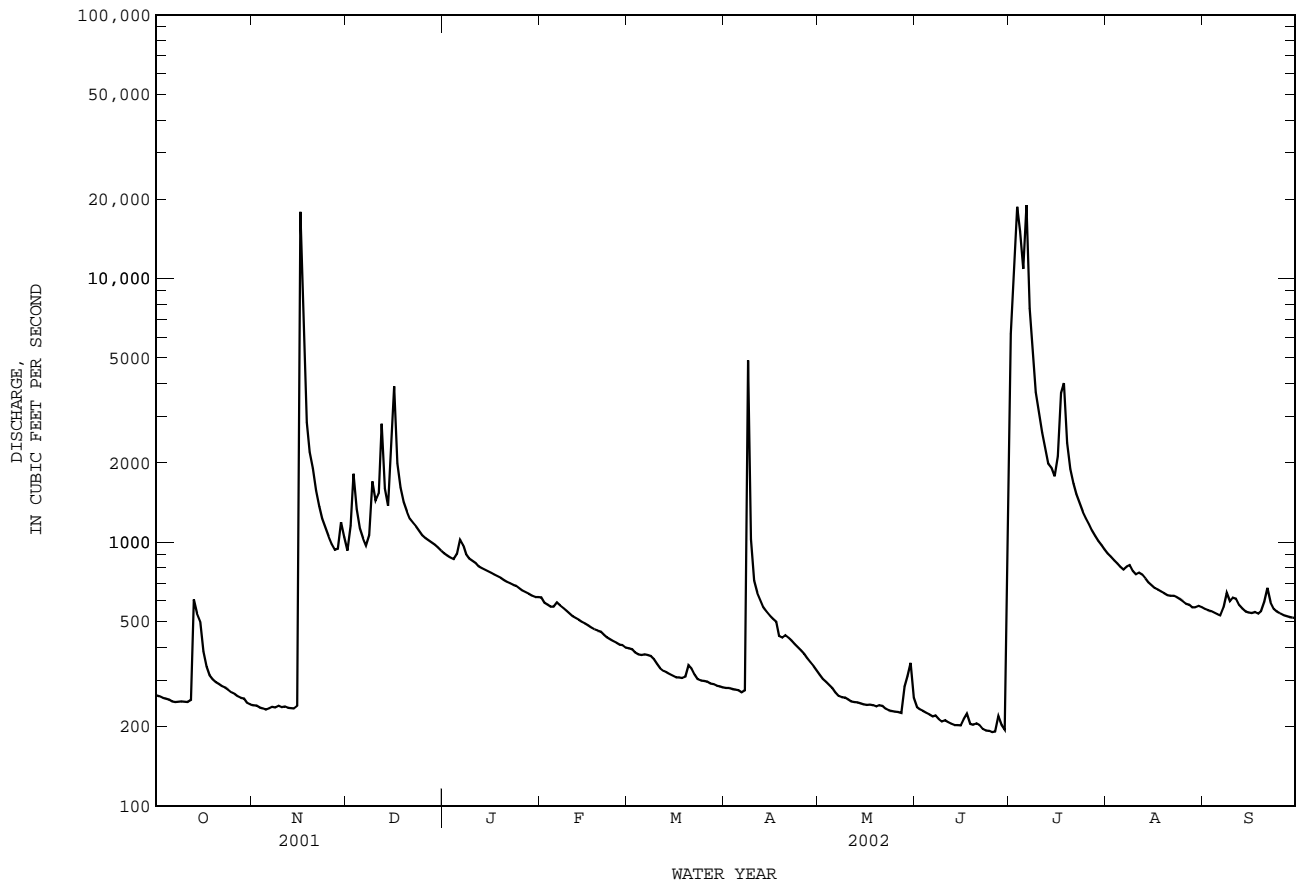
	MEAN	393.9	360.6	390.6	378.3	446.4	394.3	469.0	530.6	604.0	356.2	210.2	282.9
MAX	5485	1682	3520	2286	3358	2438	1853	2054	4850	4486	699	1577	
(WY)	1999	1999	1992	1968	1992	1992	1977	1975	1987	2002	2002	1952	
MIN	59.7	63.1	82.1	77.5	81.0	73.8	78.5	84.5	58.5	58.9	63.7	64.4	
(WY)	1956	1956	1955	1957	1952	1956	1956	1996	1956	1956	1984	1984	

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1939 - 2002
ANNUAL TOTAL	228746	359514	
ANNUAL MEAN	626.7	985.0	402.6
HIGHEST ANNUAL MEAN			1482
LOWEST ANNUAL MEAN			75.3
HIGHEST DAILY MEAN	17900	Nov 16	19000
LOWEST DAILY MEAN	177	Aug 22	191
ANNUAL SEVEN-DAY MINIMUM	180	Aug 20	196
MAXIMUM PEAK FLOW			43700
MAXIMUM PEAK STAGE			34.83
ANNUAL RUNOFF (AC-FT)	453700	713100	291600
10 PERCENT EXCEEDS	1080	1590	705
50 PERCENT EXCEEDS	481	534	209
90 PERCENT EXCEEDS	193	234	92

i From indirect measurement of peak flow.

a From floodmark.

08172000 San Marcos River at Luling, TX--Continued



GUADALUPE RIVER BASIN

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.--Apr. 1959 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 431.19 ft above NGVD of 1929. Apr. 30, 1959, to Jul. 25, 1968, at site 548 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known diversions above station. Flow is affected at times by discharge from the flood-detention pools of 17 floodwater-retarding structures. These structures control runoff from 67.8 mi² above this station. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1905, 22 ft in Jun. 1936 at present site; flood in 1951 reached a stage of 20 ft at present site, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	0.50	73	15	22	4.9	2.4	0.44	1.1	174	2.7	0.00
2	0.51	1.4	270	14	14	5.2	3.2	0.36	0.71	1330	2.3	0.00
3	0.18	1.6	460	14	12	5.6	2.9	0.32	0.42	1370	2.2	0.00
4	0.13	1.1	253	16	10	5.0	2.7	0.26	0.25	458	1.8	0.00
5	0.12	1.3	184	173	14	4.5	2.6	0.43	0.00	310	1.6	0.00
6	0.16	1.0	133	171	64	12	2.5	0.67	0.00	252	1.6	0.00
7	0.12	0.76	92	115	55	9.9	2.9	0.49	0.00	209	1.3	0.00
8	0.11	1.3	228	82	40	10	60	0.38	0.00	178	1.5	1.6
9	0.11	2.2	277	61	31	15	25	0.28	0.00	147	2.9	9.3
10	0.08	1.7	180	49	25	14	10	0.23	0.00	117	5.6	5.7
11	0.10	1.2	174	41	21	8.3	6.3	0.09	0.00	82	3.2	3.7
12	3.9	0.89	333	34	17	5.5	6.6	0.00	0.00	51	2.8	2.7
13	33	e1.2	202	26	15	4.0	5.6	0.00	0.00	34	2.9	1.3
14	32	e1.6	163	22	13	3.4	4.2	0.00	0.00	25	1.9	0.94
15	15	e1030	465	19	11	4.4	3.9	0.00	0.00	22	1.8	0.54
16	9.1	e2110	1010	16	10	4.4	3.3	0.00	0.00	90	1.5	0.70
17	4.8	479	445	15	9.7	4.7	2.7	0.00	0.00	250	1.2	0.90
18	2.9	410	257	14	9.0	4.9	2.3	0.00	0.00	246	0.82	0.93
19	2.0	369	208	12	9.6	5.2	2.1	0.00	0.00	110	0.56	1.2
20	1.4	343	152	11	9.7	27	1.9	0.00	0.00	71	1.1	8.6
21	1.1	300	108	9.2	8.8	24	1.7	0.00	0.00	41	1.1	12
22	0.96	241	79	9.0	16	14	1.5	0.00	0.00	26	0.44	6.8
23	0.97	190	59	9.2	8.0	8.8	1.4	0.00	0.00	19	0.30	4.6
24	1.1	156	42	11	6.2	6.7	1.4	0.00	0.00	15	0.18	3.1
25	1.6	132	32	11	5.9	5.8	1.3	0.00	0.00	12	0.08	2.9
26	1.5	105	26	9.8	5.5	4.9	1.4	0.00	0.00	9.4	0.00	2.1
27	1.0	84	23	9.3	5.4	4.4	1.2	0.00	0.00	8.3	0.00	0.99
28	0.77	113	21	9.6	5.3	4.0	1.1	0.00	0.00	7.6	0.00	0.38
29	1.1	154	19	9.8	---	3.6	0.81	0.00	0.00	6.5	0.00	0.16
30	1.0	105	17	9.8	---	2.9	0.55	0.00	127	4.5	0.00	0.04
31	0.69	---	15	12	---	2.5	---	0.19	---	4.2	0.00	---
TOTAL	118.51	6338.75	6000	1029.7	473.1	239.5	165.46	4.14	129.48	5679.5	43.38	71.18
MEAN	3.823	211.3	193.5	33.22	16.90	7.726	5.515	0.134	4.316	183.2	1.399	2.373
MAX	33	2110	1010	173	64	27	60	0.67	127	1370	5.6	12
MIN	0.08	0.50	15	9.0	5.3	2.5	0.55	0.00	0.00	4.2	0.00	0.00
AC-FT	235	12570	11900	2040	938	475	328	8.2	257	11270	86	141

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2002, BY WATER YEAR (WY)

	MEAN	73.46	53.06	56.69	44.34	62.78	35.26	41.81	94.05	99.10	14.46	3.767	9.632
MAX	1526	590	605	416	815	332	343	595	905	183	118	142	
(WY)	1999	1986	1992	1968	1992	1992	1976	1975	1981	2002	1974	1974	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
(WY)	1964	1964	1964	1964	1989	1964	1967	1971	1963	1963	1962	1959	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1959 - 2002

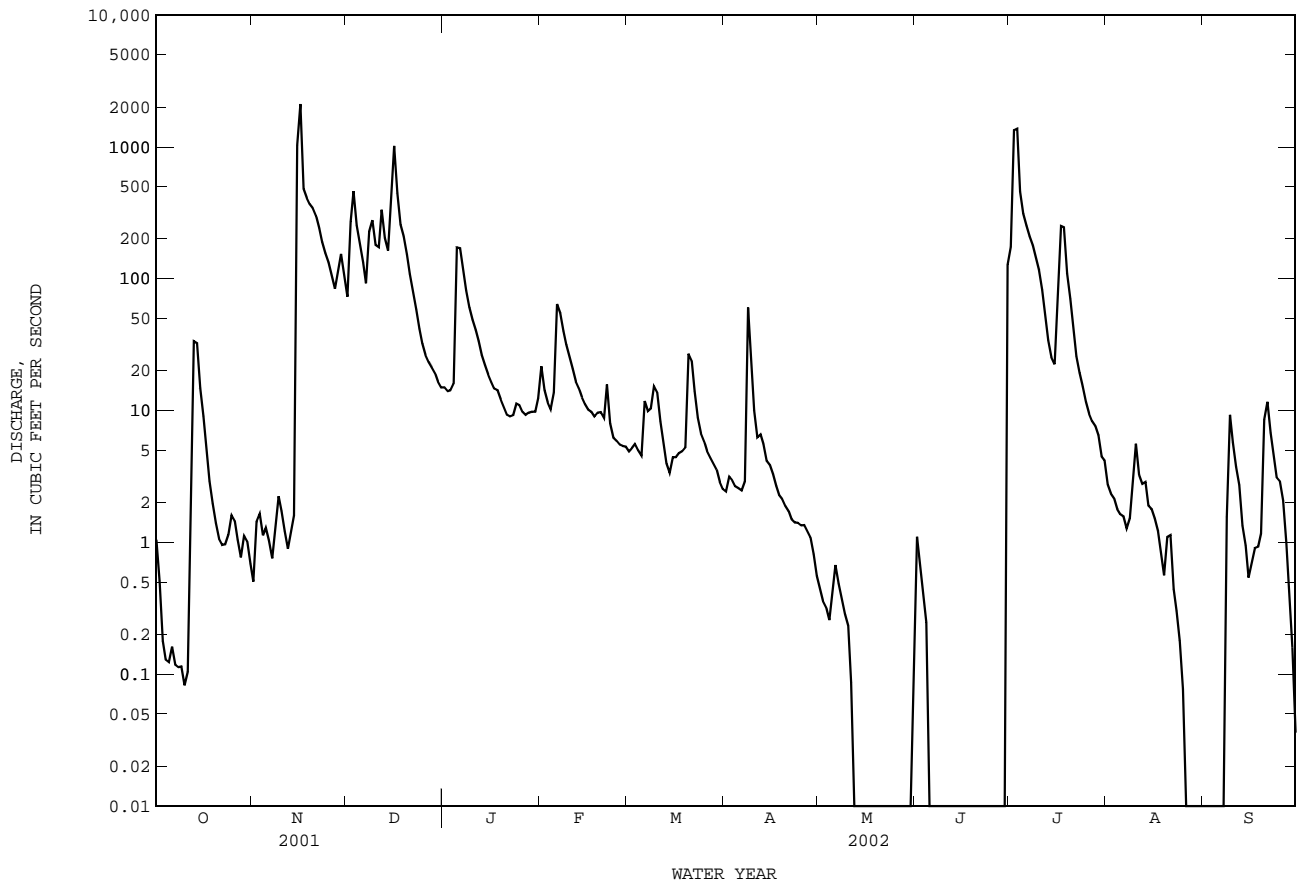
ANNUAL TOTAL	19501.83	20292.70	
ANNUAL MEAN	53.43	55.60	49.24
HIGHEST ANNUAL MEAN			238
LOWEST ANNUAL MEAN			0.10
HIGHEST DAILY MEAN	2110	Nov 16	19400
LOWEST DAILY MEAN	0.00	May 31	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	May 31	0.00
MAXIMUM PEAK FLOW		5180	c47200
MAXIMUM PEAK STAGE		a16.33	a23.09
ANNUAL RUNOFF (AC-FT)	38680	40250	35680
10 PERCENT EXCEEDS	145	166	60
50 PERCENT EXCEEDS	4.9	4.0	0.60
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

c From rating curve extended above current meter discharge measurements of 12,900 ft³/s and 21,300 ft³/s.

a From floodmark.

08172400 Plum Creek at Lockhart, TX--Continued



GUADALUPE RIVER BASIN

08173000 Plum Creek near Luling, TX

LOCATION.--Lat 29°41'58", long 97°36'12", Caldwell County, Hydrologic Unit 12100203, on left bank at downstream side of bridge on county road, 1.2 mi upstream from West Fork, 1.9 mi upstream from Southern Pacific Railroad Co. bridge, 2.2 mi upstream from McNeil Creek, 2.9 mi northeast of Luling, and 7.5 mi upstream from mouth.

DRAINAGE AREA.--309 mi².

PERIOD OF RECORD.--Mar. 1930 to Sept. 1993, Jul. 2001 to current year.

Water-quality records.--Chemical data: Feb. 1944, Apr. 1961 to Sept. 1986. Sediment data: Nov. 1965 to Jun. 1966. Specific conductance: Oct. 1967 to Sept. 1986. Water temperature: Oct. 1967 to Sept. 1986.

REVISED RECORDS.--WSP 1923: 1933. WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 321.57 ft above NGVD of 1929. Prior to Aug. 18, 1976, at datum 5.0 ft higher. Satellite telemeter at station.

REMARKS.--Records fair except those for daily discharges above 500 ft³/s and those for estimated daily discharges, which are poor. No known diversions above station. Flow is affected at times by discharge from the flood-detention pools of 27 floodwater-retarding structures. These structures control runoff from 119 mi² above this station. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1868, that of Oct. 18, 1998; flood in 1913 reached about same stage as that of Jul. 1, 1936, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	9.2	132	e38	34	34	14	12	9.8	304	21	e6.5
2	9.2	9.4	199	e36	37	32	14	11	8.4	1120	20	e7.0
3	9.1	9.4	808	e35	33	29	14	10	8.0	4180	20	e6.4
4	8.9	9.4	533	e35	30	28	13	9.9	7.4	1900	18	6.4
5	8.7	9.6	333	e167	31	28	13	9.9	7.0	614	18	6.2
6	8.3	9.3	218	e306	48	26	13	9.5	6.7	526	16	6.1
7	8.1	e9.2	158	e169	73	30	13	9.1	6.6	338	16	9.8
8	8.3	e9.1	269	e125	59	28	2300	9.1	7.2	260	15	22
9	8.8	e9.5	622	94	50	26	579	8.9	6.6	213	17	11
10	8.8	e9.1	368	77	43	29	187	8.5	7.6	161	16	15
11	8.8	e9.1	341	67	39	25	99	8.1	9.5	123	21	13
12	9.0	e9.5	1750	59	35	22	66	7.9	8.8	82	16	9.5
13	56	e9.5	579	53	34	19	50	7.7	7.3	58	14	8.7
14	79	e9.9	336	47	32	17	42	7.7	5.8	47	13	8.4
15	42	e226	601	42	33	16	37	7.8	5.6	43	13	8.0
16	24	e2440	4370	39	33	15	33	8.1	6.2	68	11	8.4
17	17	e1860	1860	37	33	15	29	8.1	13	459	11	9.1
18	14	e883	649	35	35	16	26	7.7	7.3	586	9.6	8.9
19	12	e668	420	35	38	17	23	7.1	6.5	250	9.2	9.5
20	12	e527	286	31	42	34	21	7.4	6.1	131	8.8	8.7
21	10	468	205	30	43	35	20	7.4	5.8	88	8.6	8.3
22	10	396	156	30	42	28	18	7.4	5.6	60	8.7	15
23	9.7	310	122	30	48	22	19	7.5	5.6	48	8.9	9.9
24	9.5	235	95	30	41	19	17	7.7	5.1	40	8.2	8.2
25	9.3	203	76	31	39	17	16	7.7	5.0	36	7.9	7.2
26	8.8	174	66	30	37	16	15	7.4	5.7	32	7.7	6.4
27	8.4	139	58	29	34	15	15	6.9	14	30	7.5	6.4
28	8.7	115	54	29	34	15	14	13	11	28	7.3	6.5
29	8.7	202	50	30	---	15	13	17	7.0	26	7.1	6.0
30	9.0	188	45	30	---	15	14	12	30	24	e6.8	5.7
31	9.1	---	e41	31	---	14	---	12	---	23	e7.0	---
TOTAL	462.5	9165.2	15800	1857	1110	697	3747	281.5	246.2	11898	389.3	268.2
MEAN	14.92	305.5	509.7	59.90	39.64	22.48	124.9	9.081	8.207	383.8	12.56	8.940
MAX	79	2440	4370	306	73	35	2300	17	30	4180	21	22
MIN	8.1	9.1	41	29	30	14	13	6.9	5.0	23	6.8	5.7
AC-FT	917	18180	31340	3680	2200	1380	7430	558	488	23600	772	532

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2002h, BY WATER YEAR (WY)

	MEAN	84.64	91.76	113.7	116.4	146.3	86.56	162.0	197.8	183.3	76.57	23.15	50.32
MAX	1280	1040	1969	987	2083	828	1110	1922	2389	1962	538	485	
(WY)	1961	1986	1992	1991	1992	1992	1976	1975	1987	1936	1947	1957	
MIN	0.000	0.000	0.60	0.80	3.61	1.04	2.55	2.21	0.29	0.000	0.000	0.000	
(WY)	1957	1957	1955	1957	1951	1956	1972	1964	1956	1956	1956	1956	

SUMMARY STATISTICS

FOR 2002 WATER YEAR

WATER YEARS 1930 - 2002h

ANNUAL TOTAL	45921.9		
ANNUAL MEAN	125.8	111.1	
HIGHEST ANNUAL MEAN		578	1992
LOWEST ANNUAL MEAN		7.27	1956
HIGHEST DAILY MEAN	4370	Dec 16	
LOWEST DAILY MEAN	5.0	Jun 25	
ANNUAL SEVEN-DAY MINIMUM	5.6	Jun 20	
MAXIMUM PEAK FLOW	4990	Dec 16	c78500
MAXIMUM PEAK STAGE	20.30	Dec 16	a30.70
ANNUAL RUNOFF (AC-FT)	91090		80460
10 PERCENT EXCEEDS	264		123
50 PERCENT EXCEEDS	18		9.4
90 PERCENT EXCEEDS	7.3		1.6

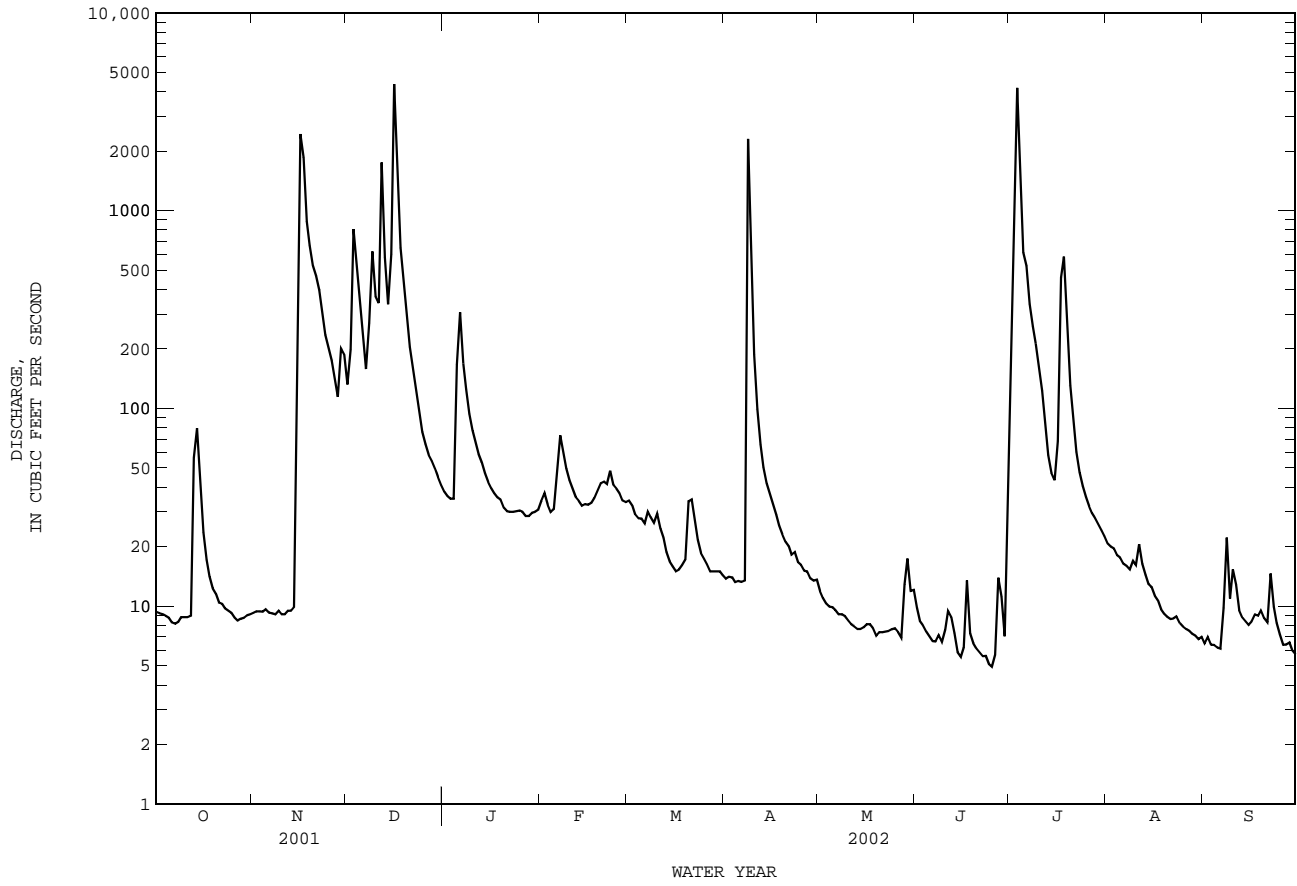
e Estimated

h See PERIOD OF RECORD paragraph.

c From rating curve extended above discharge measurement of 37,500 ft³/s.

a From floodmark.

08173000 Plum Creek near Luling, TX--Continued



GUADALUPE RIVER BASIN

08173900 Guadalupe River at Gonzales, TX

LOCATION.--Lat 29°29'03", long 97°27'00", Gonzales County, Hydrologic Unit 12100202, on right bank on downstream side of U.S. Highway 183 bridge, and 4.6 mi downstream from San Marcos River.

DRAINAGE AREA.--3,490 mi².

PERIOD OF RECORD.--July 1915 to Sept. 1922, Oct. 1951 to Sept. 1952 (discharge measurements only), Mar. 1977 to Sept. 1996 (peak stage only), Oct. 1996 to current year. Records for July 1915 to Sept. 1922, published in WSP 408, 438, 458, and 528, are unreliable and should not be used.

Water-quality records.--Chemical data: Apr. 1996 to Apr. 1998. Biochemical data: Apr. 1996 to Apr. 1998. Sediment data: Apr. 1996 to Apr. 1998.

GAGE.--Water-stage recorder. Datum of gage is 231.80 ft above NGVD of 1929. July 1915 to Sept. 1922, and Oct. 1951 to Sept. 1952, 0.2 mi downstream, datum not known. Mar. 1977 to Sept. 1996, 1.2 mi upstream at Gonzales hydroelectric plant at National Weather Service datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since water year 1928, at least 10% of contributing drainage area has been regulated. Some water is diverted for irrigation and municipal use (amounts unknown).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 29, 1929, reached a stage of 38.3 ft, National Weather Service datum.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1350	1360	5930	2070	1830	1320	1020	834	780	7050	4270	6020
2	1310	1150	4760	2130	1630	1280	1060	803	803	10200	4020	6000
3	1280	1160	5600	2160	1690	1270	1050	826	755	26200	3150	5960
4	1220	1200	6070	2240	1640	1260	1020	866	753	42700	3170	6190
5	1140	973	5130	2170	1750	1230	1010	775	716	26900	3160	5780
6	1170	1100	5160	2570	1580	1200	1020	832	702	30400	2940	5850
7	1020	1060	5040	2860	1630	1200	1020	742	650	50200	2840	6160
8	1070	1100	4560	2450	1700	e1170	5440	742	712	41400	2750	6340
9	1060	1060	3840	2400	1600	e1200	11400	737	668	30300	2820	5980
10	927	1210	4480	2460	1500	e1150	3840	821	637	18000	2650	6080
11	911	1080	3780	2270	1340	1220	1690	753	655	13400	2590	5730
12	985	1120	5820	2230	1450	1240	1420	693	655	10600	4000	5980
13	1290	1160	6630	2210	1390	1080	1230	727	651	8090	4930	5960
14	3030	e1100	4180	2110	1340	963	1190	809	638	7380	5100	5940
15	2080	1240	3940	1720	1300	1140	1090	707	618	6940	5130	5930
16	1540	2780	7170	1640	1190	1100	1110	722	557	7190	5270	5940
17	1120	18800	8840	1950	1290	1110	1060	787	640	9060	5860	5940
18	1550	12300	5420	1900	1330	1120	985	729	708	11600	6130	5930
19	1710	5210	4330	1710	1310	1180	884	705	629	11300	6150	5870
20	1660	4180	4320	1590	1350	e1150	939	747	544	8690	6110	5950
21	1660	5150	5030	1580	1290	1210	918	672	672	7100	6140	6170
22	1610	5840	5010	1560	1190	1250	1000	654	606	6310	6130	5970
23	1610	6170	3590	1460	1270	e1210	908	733	589	5770	6120	5840
24	1640	6150	2940	1750	1280	e1120	932	747	596	5310	6100	4800
25	1620	6080	2940	1540	1310	1110	912	747	587	4950	6090	2810
26	1500	5780	2890	1420	1310	1090	911	e770	501	4820	6080	2010
27	1630	4770	2780	1510	1270	1060	877	e810	570	4580	6050	1680
28	1560	5630	2800	1460	1230	1120	915	839	678	4170	6040	1390
29	1610	6110	2690	1550	---	986	859	1000	656	3960	6020	1480
30	1550	6350	2640	1520	---	1010	922	871	1100	3630	6020	1360
31	1560	---	2420	1740	---	1070	---	845	---	3330	6020	---
TOTAL	44973	118373	140730	59930	39990	35819	48632	24045	20026	431530	149850	153040
MEAN	1451	3946	4540	1933	1428	1155	1621	775.6	667.5	13920	4834	5101
MAX	3030	18800	8840	2860	1830	1320	11400	1000	1100	50200	6150	6340
MIN	911	973	2420	1420	1190	963	859	654	501	3330	2590	1360
AC-FT	89200	234800	279100	118900	79320	71050	96460	47690	39720	855900	297200	303600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)

	1997	1998	1999	2000	2001	2002
MEAN	3777	2562	2164	1427	1465	1720
MAX	18950	5006	4540	2433	2468	3098
(WY)	1999	1999	2002	2001	1998	1997
MIN	352	430	508	520	563	585
(WY)	1997	1997	1997	1997	2000	2000

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1997 - 2002

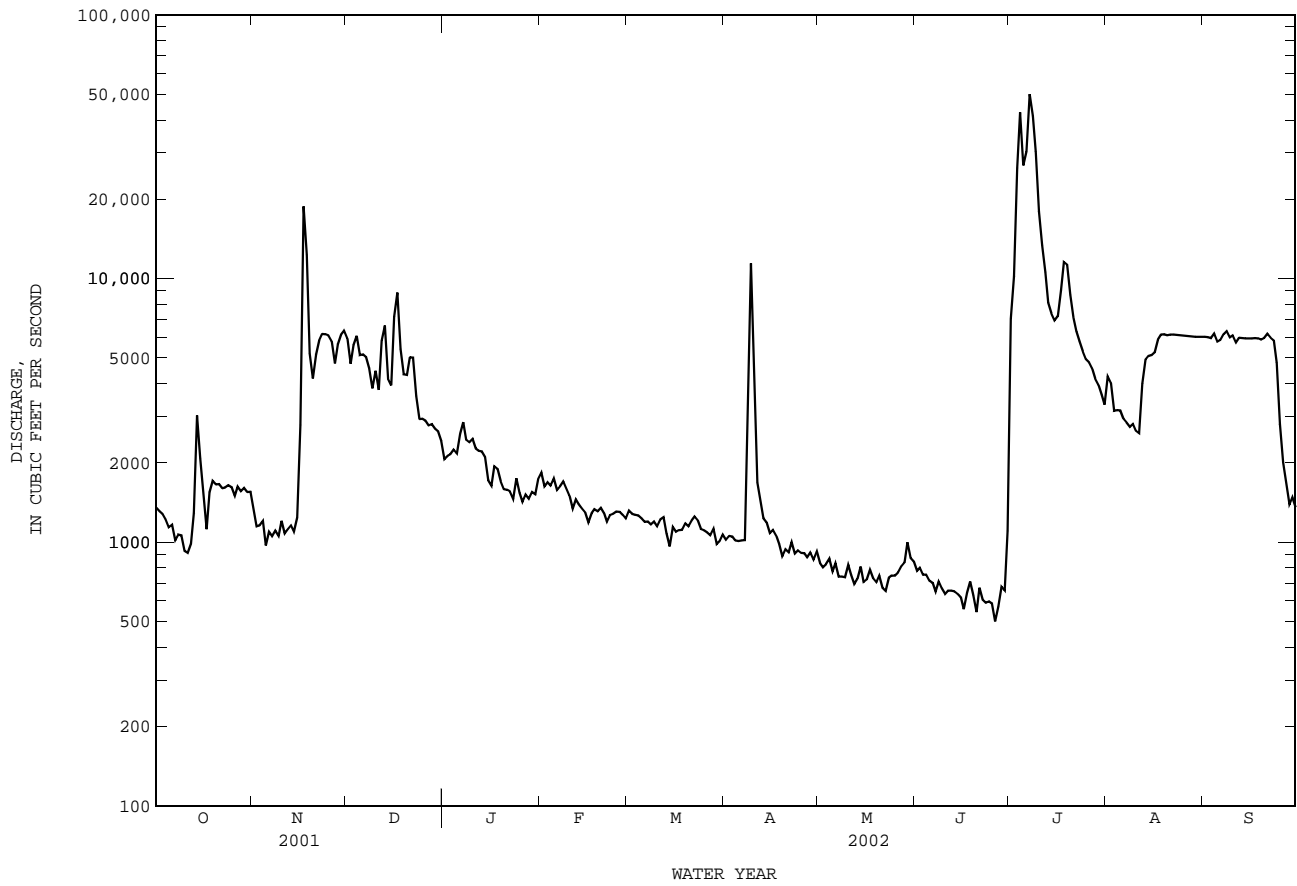
ANNUAL TOTAL	794163	1266938		
ANNUAL MEAN	2176	3471		
HIGHEST ANNUAL MEAN			2073	
LOWEST ANNUAL MEAN			3471	2002
HIGHEST DAILY MEAN	18800	Nov 17	50200	Jul 7
LOWEST DAILY MEAN	359	Aug 15	501	Jun 26
ANNUAL SEVEN-DAY MINIMUM	444	Aug 20	585	Jun 20
MAXIMUM PEAK FLOW			55000	Jul 7
MAXIMUM PEAK STAGE			a42.64	Jul 7
ANNUAL RUNOFF (AC-FT)	1575000	2513000		
10 PERCENT EXCEEDS	4380	6140		
50 PERCENT EXCEEDS	1730	1560		
90 PERCENT EXCEEDS	731	742		

e Estimated.

i From indirect measurement of peak flow.

a From floodmark.

08173900 Guadalupe River at Gonzales, TX--Continued



GUADALUPE RIVER BASIN

08174600 Peach Creek below Dilworth, TX

LOCATION.--Lat 29°28'26", long 97°18'59", Gonzales County, Hydrologic Unit 12100202, on right bank at downstream side of bridge on U.S. Highway 90-A, 1.3 mi downstream from Mitchell Creek, 3.1 mi southwest of Dilworth, 6.4 mi upstream from mouth, and 8.5 mi southeast of Gonzales.

DRAINAGE AREA.--460 mi².

PERIOD OF RECORD.--Apr. 1959 to Sept. 1979, Oct. 2000 to current year.

Water quality records.--Chemical data: Apr. 1962 to Sept. 1979.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 213.53 ft above sea level. Prior to Feb. 11, 1960 nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions above station. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1840, 35.3 ft in Jun. 1940; flood of Jun. 30, 1936 reached a stage of 32.8 ft, but may have been affected by backwater from the Guadalupe River, from information by local residents.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	2.0	2.1	8.6	5.9	3.6	3.6	8.5	2.1	519	2.5	1.4
2	3.1	2.5	14	8.2	5.6	3.7	3.6	8.0	2.1	1070	2.5	1.4
3	2.6	2.6	40	8.1	5.6	3.6	3.7	7.7	1.9	1680	2.4	1.4
4	2.5	2.1	16	7.9	5.5	3.4	3.6	7.6	1.9	1890	2.4	1.4
5	2.5	2.1	21	42	5.8	3.3	3.3	7.3	1.9	1420	2.5	1.4
6	6.0	2.0	14	195	6.4	3.4	3.2	6.4	1.8	905	2.5	1.3
7	163	2.0	11	207	6.2	3.4	3.5	6.1	1.7	2840	2.7	3.8
8	47	1.9	50	76	7.1	3.6	1770	5.7	1.7	3220	2.6	3.8
9	17	2.2	73	36	8.0	3.5	3680	5.4	1.7	1880	2.7	2.2
10	11	2.4	43	22	7.1	3.3	4880	5.0	1.6	1080	2.8	37
11	7.5	2.4	39	16	6.4	3.2	1170	4.5	1.6	762	2.7	5.3
12	6.3	2.4	231	13	5.9	3.2	141	4.3	1.7	408	2.4	2.6
13	141	2.6	324	10	5.3	3.2	73	4.1	1.7	55	2.3	1.9
14	546	2.6	148	9.4	5.0	3.2	49	3.5	1.6	6.3	2.3	1.7
15	438	2.7	58	8.1	4.8	3.3	38	3.1	1.4	7.6	2.6	1.6
16	69	3.5	271	7.6	4.7	3.4	31	3.0	1.3	156	28	1.7
17	23	38	517	7.4	4.6	3.4	26	3.0	1.2	346	11	1.6
18	12	389	313	7.1	4.5	3.6	23	2.9	1.3	396	4.5	1.6
19	7.9	86	114	6.8	4.5	4.0	21	2.6	1.2	211	4.2	1.8
20	5.6	1.5	52	7.1	4.6	4.3	19	2.3	1.2	73	2.7	2.1
21	4.5	1.5	31	7.5	4.5	4.5	17	2.1	1.4	22	2.1	1.4
22	3.8	1.5	22	7.4	4.3	6.2	16	2.3	1.5	13	1.8	1.3
23	3.3	1.6	16	7.1	4.1	6.1	15	2.3	1.3	7.8	1.7	1.2
24	3.1	1.7	14	6.9	4.0	5.9	14	2.3	1.3	5.4	1.6	1.2
25	2.7	1.7	12	6.6	4.0	5.1	13	2.3	1.4	4.4	1.5	1.2
26	2.4	1.7	11	6.2	3.8	4.7	12	2.3	1.7	3.7	1.5	1.1
27	2.3	1.7	11	6.1	3.5	4.4	11	2.3	2.4	3.3	1.5	1.1
28	2.2	1.7	9.8	6.2	3.4	4.1	10	3.3	5.3	3.0	1.4	1.1
29	2.1	2.0	9.6	6.2	---	3.9	9.9	2.8	39	2.8	1.5	1.1
30	2.0	2.4	9.3	6.2	---	4.1	9.5	2.6	474	2.7	1.4	1.1
31	2.0	---	9.0	6.4	---	3.7	---	2.3	---	2.6	1.4	---
TOTAL	1545.0	570.0	2505.8	776.1	145.1	122.3	12072.9	127.9	561.9	18995.6	105.7	88.8
MEAN	49.84	19.00	80.83	25.04	5.182	3.945	402.4	4.126	18.73	612.8	3.410	2.960
MAX	546	389	517	207	8.0	6.2	4880	8.5	474	3220	28	37
MIN	2.0	1.5	2.1	6.1	3.4	3.2	3.2	2.1	1.2	2.6	1.4	1.1
AC-FT	3060	1130	4970	1540	288	243	23950	254	1110	37680	210	176

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2002h, BY WATER YEAR (WY)

MEAN	178.5	144.1	116.7	157.6	153.7	101.0	321.1	300.0	311.8	61.09	11.67	141.2
MAX	1720	730	1114	1149	727	584	3062	1690	1867	728	121	742
(WY)	1961	1966	1977	1974	1969	1969	1977	1972	1968	2002	2001	1961
MIN	0.000	0.000	0.000	0.000	0.22	0.023	0.40	0.000	0.000	0.000	0.000	0.000
(WY)	1964	1965	1965	1967	1967	1967	1963	1963	1963	1963	1962	1960

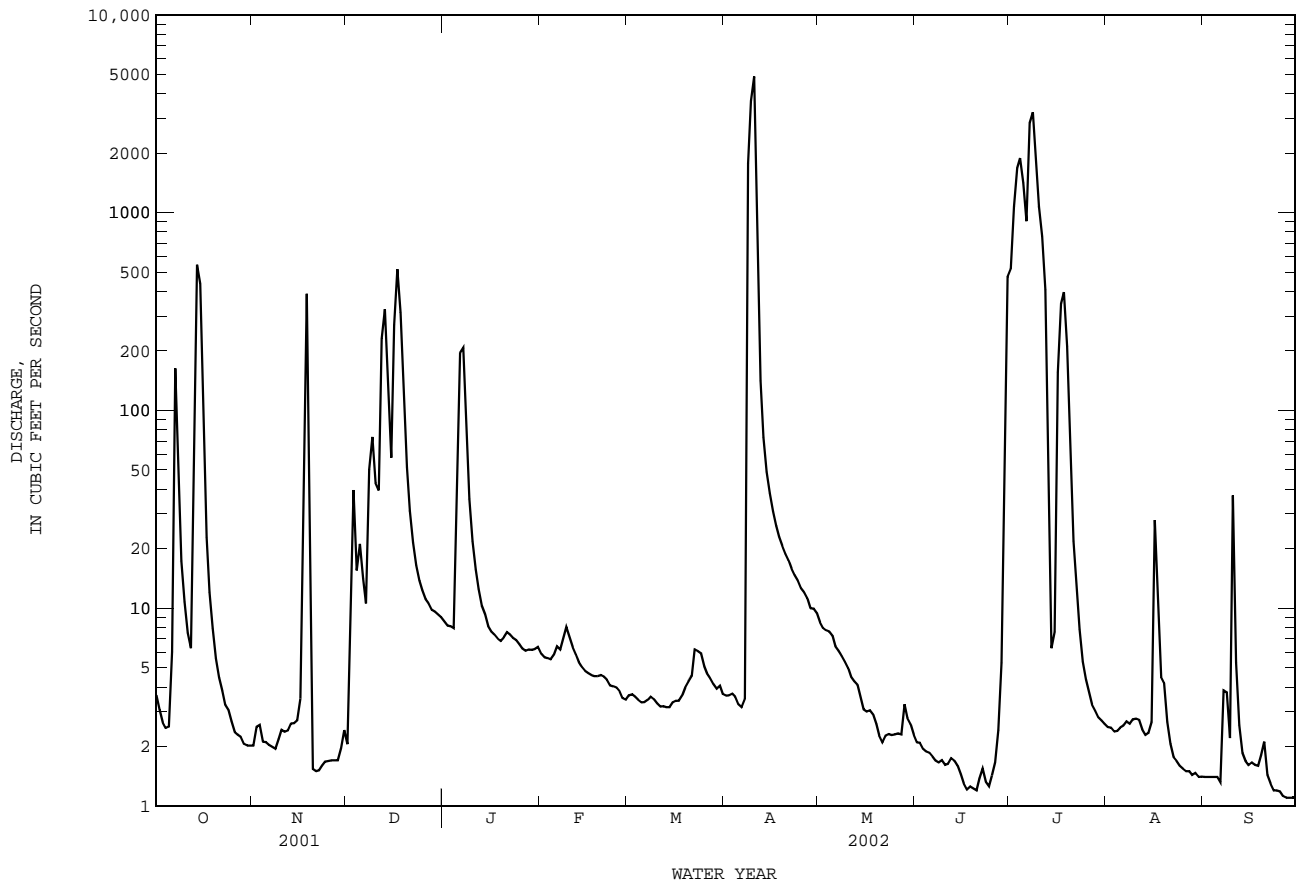
SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1959 - 2002h

ANNUAL TOTAL	36997.29	37617.1	
ANNUAL MEAN	101.4	103.1	
HIGHEST ANNUAL MEAN			166.5
LOWEST ANNUAL MEAN			503
HIGHEST DAILY MEAN	4690 Sep 1	4880 Apr 10	28700 Apr 20 1977
LOWEST DAILY MEAN	0.77 Aug 9	1.1 Sep 26	0.00 Aug 1 1959
ANNUAL SEVEN-DAY MINIMUM	0.84 Aug 8	1.1 Sep 24	0.00 Aug 1 1959
MAXIMUM PEAK FLOW		5680 Apr 10	76800 Apr 20 1977
MAXIMUM PEAK STAGE		a27.81 Apr 10	33.11 Apr 20 1977
ANNUAL RUNOFF (AC-FT)	73380	74610	120600
10 PERCENT EXCEEDS	222	97	159
50 PERCENT EXCEEDS	7.2	4.1	5.6
90 PERCENT EXCEEDS	1.3	1.5	0.00

h See PERIOD OF RECORD paragraph.

a From floodmark.

08174600 Peach Creek below Dilworth, TX--Continued



GUADALUPE RIVER BASIN

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.

PERIOD OF RECORD.--Mar. 1930 to Nov. 1934, Aug. 1959 to current year.

Water-quality records.--Chemical data: Apr. 1962 to Sept. 1999. Sediment data: Nov. 1965 to May 1966. Pesticide data: Oct 1992 to July 1999.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 178.27 ft above NGVD of 1929. 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. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation or diversions. No flow at times.

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 Oct. 1913 reached a stage of 26.0 ft, present site and datum, from information by local residents.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	6.3	8.4	17	15	11	9.8	8.3	8.1	292	8.0	1.9
2	11	6.5	235	16	16	12	10	7.6	8.9	1000	7.3	2.0
3	10	5.9	609	15	18	15	10	7.0	8.0	6240	6.6	2.2
4	9.6	6.6	675	15	16	14	9.8	6.5	6.7	4910	6.2	2.2
5	9.6	7.4	507	16	16	13	9.4	6.7	6.1	2460	5.5	2.2
6	9.9	6.6	231	16	16	12	9.4	6.3	5.6	861	5.1	2.2
7	9.4	7.1	97	64	15	12	9.9	6.2	5.2	651	4.2	4.0
8	9.7	6.8	185	65	15	12	210	5.6	4.6	742	4.0	25
9	10	7.3	371	38	17	13	784	5.6	4.6	278	3.8	43
10	10	7.1	219	27	17	14	1260	5.3	6.9	130	4.0	45
11	11	7.2	162	22	16	12	608	4.9	7.7	100	4.3	129
12	10	7.8	398	20	15	11	129	4.6	6.2	124	4.1	74
13	60	8.4	632	18	14	10	65	4.6	4.5	81	3.5	32
14	119	8.4	431	18	14	11	41	4.8	4.0	85	3.7	18
15	72	8.8	202	17	18	11	29	4.9	3.9	678	4.9	13
16	38	13	339	17	17	12	24	4.9	4.2	1090	10	9.5
17	22	40	418	16	17	13	20	5.5	4.0	848	8.4	7.8
18	16	49	260	16	16	16	18	6.4	4.4	629	6.5	7.0
19	12	28	136	17	14	14	17	5.9	3.8	643	5.0	6.5
20	9.7	19	82	16	13	22	16	6.3	4.1	325	3.8	38
21	8.8	16	55	16	13	14	15	6.6	4.1	118	3.4	150
22	8.3	14	42	16	12	13	14	6.5	3.7	62	3.1	104
23	e7.8	12	35	16	12	13	13	5.9	3.7	40	2.7	46
24	e7.3	10	31	16	13	14	12	5.9	3.5	27	2.6	20
25	e6.7	9.4	28	16	13	14	11	5.9	3.4	21	3.0	12
26	e6.6	8.9	23	15	12	13	11	5.7	3.7	17	3.0	5.8
27	e6.5	8.4	21	15	11	11	9.9	7.2	5.0	14	2.6	3.6
28	e6.4	8.2	19	15	10	11	9.6	7.5	4.3	12	2.5	2.5
29	6.3	8.0	19	15	---	10	9.3	6.5	8.9	11	2.5	1.9
30	6.3	7.1	19	15	---	10	8.4	7.3	159	8.9	2.4	1.7
31	6.3	---	18	15	---	9.5	---	7.2	---	8.2	2.2	---
TOTAL	547.2	359.2	6507.4	636	411	392.5	3402.5	190.1	310.8	22506.1	138.9	812.0
MEAN	17.65	11.97	209.9	20.52	14.68	12.66	113.4	6.132	10.36	726.0	4.481	27.07
MAX	119	49	675	65	18	22	1260	8.3	159	6240	10	150
MIN	6.3	5.9	8.4	15	10	9.5	8.4	4.6	3.4	8.2	2.2	1.7
AC-FT	1090	712	12910	1260	815	779	6750	377	616	44640	276	1610
CFSM	0.03	0.02	0.38	0.04	0.03	0.02	0.21	0.01	0.02	1.32	0.01	0.05
IN.	0.04	0.02	0.44	0.04	0.03	0.03	0.23	0.01	0.02	1.53	0.01	0.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2002h, BY WATER YEAR (WY)

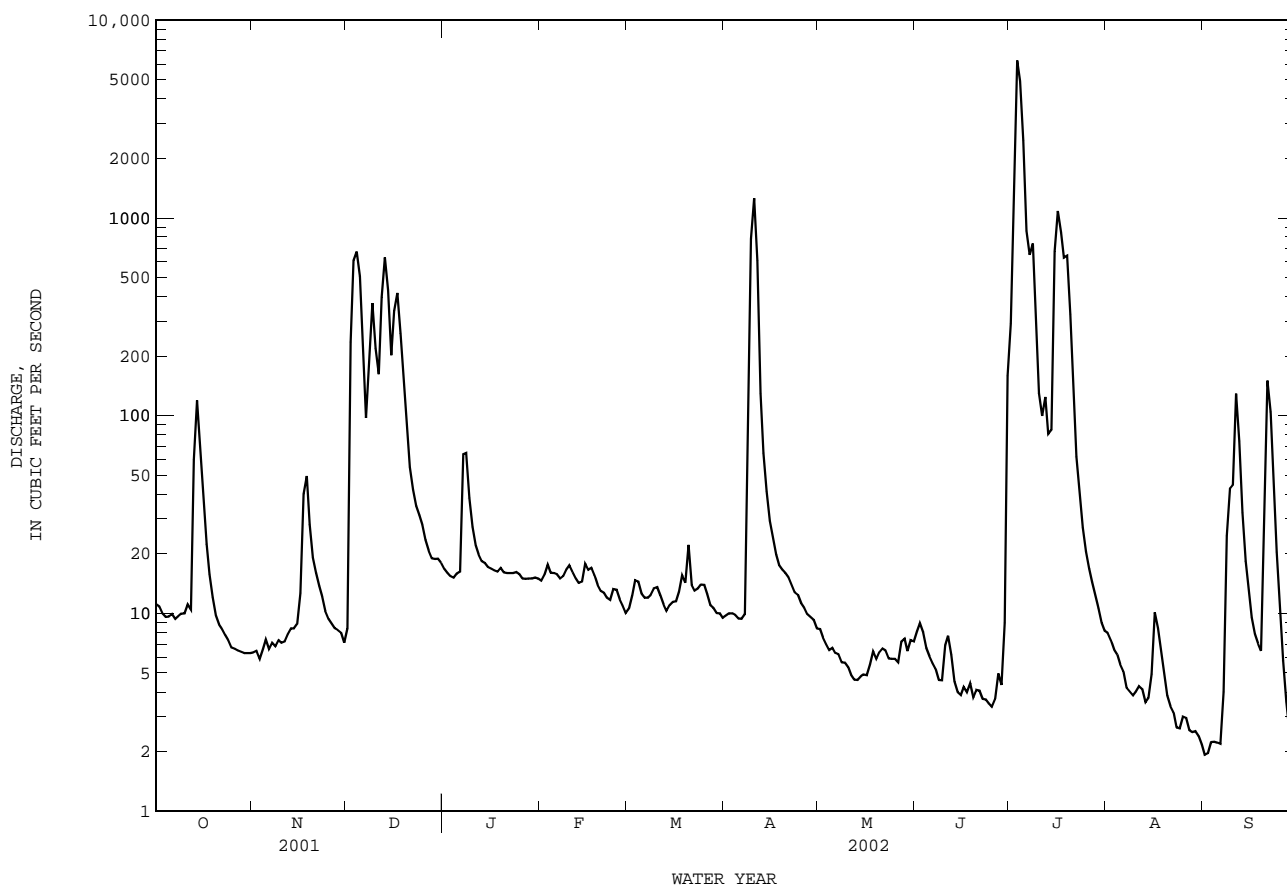
	MEAN	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
MEAN	153.7	89.01	63.63	115.3	137.5	75.23	153.9	238.2	271.9	42.57	31.37	229.0
MAX	2698	732	969	778	1485	418	1361	2062	2820	726	282	4060
(WY)	1999	1999	1977	1974	1992	1969	1977	1972	1987	2002	2001	1967
MIN	0.26	1.19	1.85	4.08	4.05	2.66	3.26	0.88	0.32	0.23	0.071	0.26
(WY)	1964	1932	1989	1967	1967	1967	1963	1963	1934	1964	1962	1959

08175000 Sandies Creek near Westhoff, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1930 - 2002h
ANNUAL TOTAL	92094.28	36213.7	135.2
ANNUAL MEAN	252.3	99.22	532
HIGHEST ANNUAL MEAN			8.71
LOWEST ANNUAL MEAN			0.00
HIGHEST DAILY MEAN	25900 Sep 1	6240 Jul 3	67900 Sep 22 1967
LOWEST DAILY MEAN	0.39 Aug 15	1.7 Sep 30	0.00 Aug 11 1932
ANNUAL SEVEN-DAY MINIMUM	0.46 Aug 15	2.1 Aug 31	0.00 Aug 18 1959
MAXIMUM PEAK FLOW		8320 Jul 3	79700 Sep 22 1967
MAXIMUM PEAK STAGE		23.22 Jul 3	32.34 Sep 22 1967
ANNUAL RUNOFF (AC-FT)	182700	71830	97910
ANNUAL RUNOFF (CFSM)	0.46	0.18	0.25
ANNUAL RUNOFF (INCHES)	6.24	2.45	3.34
10 PERCENT EXCEEDS	339	154	130
50 PERCENT EXCEEDS	16	12	9.3
90 PERCENT EXCEEDS	0.97	4.0	1.6

e Estimated

h See PERIOD OF RECORD paragraph.



GUADALUPE RIVER BASIN

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 mouth of Sandies Creek, and at river mile 100.6.

DRAINAGE AREA.--4,934 mi² of which 1,432 mi² is above Canyon Dam.

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

Water-quality records.--Chemical data: Mar. 1968 to Sept. 1985.

REVISED RECORDS.--WRD TX-68-1, TX-69-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 128.64 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in 1964, at least 10% of contributing drainage area has been regulated. Flow is affected at times by discharge from the flood-detention pools of 53 floodwater-retarding structures. These structures control runoff from 302 mi² in the Comal, San Marcos, and Plum Creek drainage basins. Many small diversions above station.

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 Texas Department of Transportation.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1310	1600	6430	2420	1720	1100	871	862	811	1860	3360	5930
2	1430	1500	6970	2150	1810	1150	845	851	779	7550	4100	5910
3	1380	1230	7660	2140	1720	1110	856	790	761	13100	4040	5880
4	1370	1220	6510	2140	1700	1170	832	796	735	16700	3250	5830
5	1410	1280	6720	2240	1660	1110	833	814	735	21300	3230	6050
6	1390	1090	5470	2230	1720	1080	811	795	681	28400	3160	5700
7	1200	1180	5090	2600	1620	1070	812	784	658	25700	2940	5680
8	1240	1140	4940	e2930	1620	1050	1400	782	718	49800	2820	6170
9	1160	1140	4910	e2490	1660	1070	7580	744	709	60800	2720	6360
10	1160	1160	4140	2390	1580	1000	12500	719	585	43600	2720	6140
11	1090	1260	4410	2320	1520	994	12500	731	677	31200	2630	6010
12	1070	1160	4390	2230	1380	1040	3740	748	652	23200	2460	5710
13	1130	1100	6470	2180	1440	1050	1720	718	578	17800	3510	5780
14	1470	1190	7620	2200	1400	1040	1390	703	709	12300	4470	5830
15	3230	1190	4760	2100	1370	881	1250	741	687	10000	4730	5940
16	2650	1170	4330	1890	e1350	953	1140	735	558	11600	4780	5850
17	1770	2660	7680	1740	1240	974	1160	753	635	12400	5010	5810
18	1320	9310	9870	1930	1280	957	1060	645	598	10700	5680	5810
19	1490	12300	6710	1940	1300	972	978	700	718	11800	6000	5770
20	1680	8770	4570	1810	1250	1010	943	785	623	12300	6090	5730
21	1650	4360	4310	1700	1260	1060	896	701	652	10900	6070	5820
22	1640	4940	4870	1680	1220	1080	924	689	674	9010	6120	6110
23	1620	5760	4900	1670	1130	1040	942	686	624	8020	6090	5930
24	1620	6180	3640	1520	1150	939	904	684	574	7250	6080	5650
25	1600	6260	2960	1760	1180	917	904	689	570	6570	6050	4430
26	1610	6170	2910	1650	1180	897	893	723	675	5820	6040	2750
27	1560	5760	2830	1550	1180	903	904	713	567	5290	6030	1960
28	1550	4630	2650	e1570	1150	888	862	732	663	4800	5990	1700
29	1560	5430	2650	1560	---	926	872	787	633	4400	5960	1480
30	1530	6070	2620	1620	---	850	858	842	944	3970	5940	1470
31	1570	---	2650	1590	---	854	---	877	---	3640	5930	---
TOTAL	47460	108210	156640	61940	39790	31135	62180	23319	20183	491780	144000	155190
MEAN	1531	3607	5053	1998	1421	1004	2073	752.2	672.8	15860	4645	5173
MAX	3230	12300	9870	2930	1810	1170	12500	877	944	60800	6120	6360
MIN	1070	1090	2620	1520	1130	850	811	645	558	1860	2460	1470
AC-FT	94140	214600	310700	122900	78920	61760	123300	46250	40030	975400	285600	307800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2002, BY WATER YEAR (WY)

MEAN	2181	1848	1872	1881	2128	1850	2219	2912	3173	1848	1235	1897
MAX	30990	8725	10500	10830	16740	10370	11100	12270	21470	15860	4645	11210
(WY)	1999	1999	1992	1992	1992	1992	1977	1972	1987	2002	2002	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

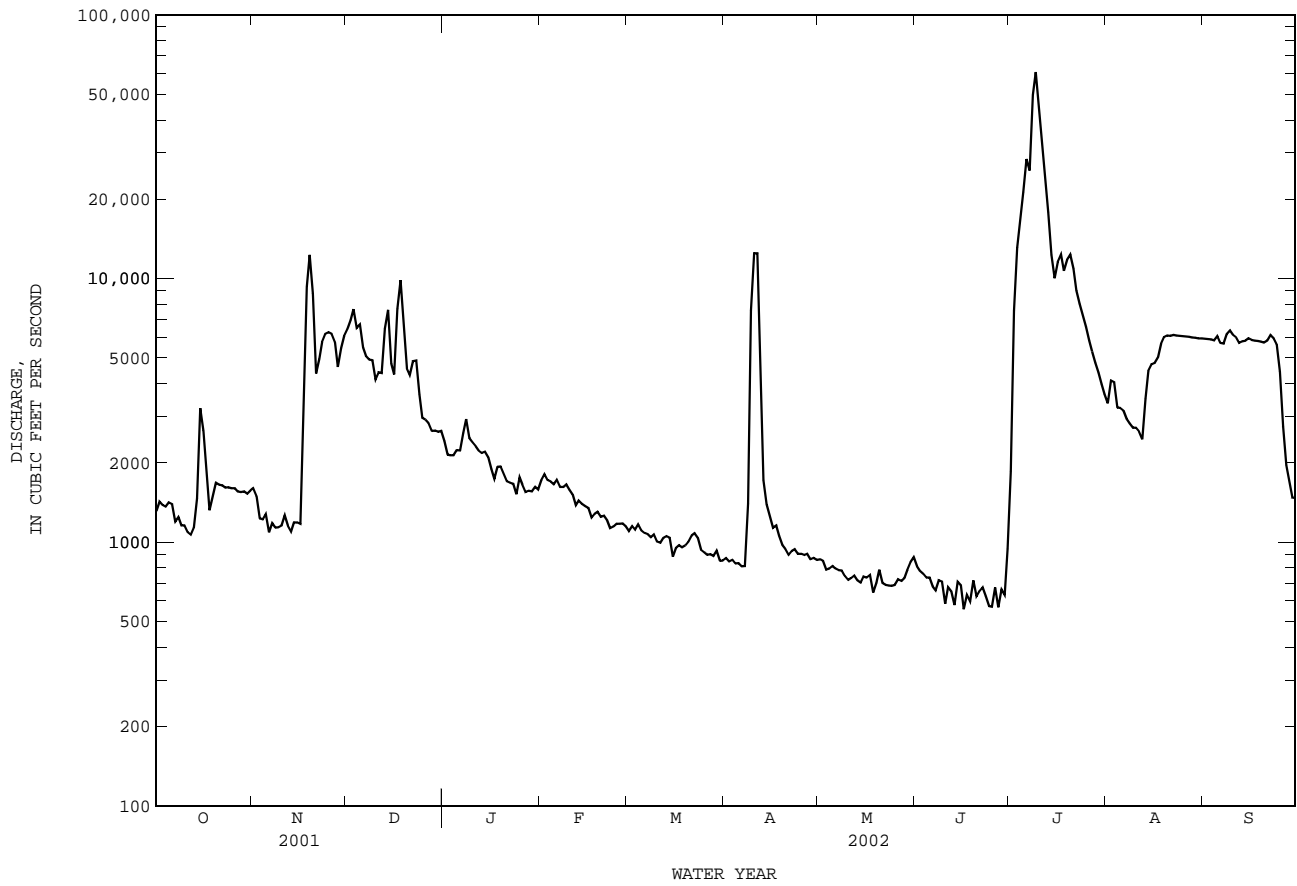
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1964 - 2002
ANNUAL TOTAL	974270	1341827	
ANNUAL MEAN	2669	3676	2115
HIGHEST ANNUAL MEAN			6885
LOWEST ANNUAL MEAN			435
HIGHEST DAILY MEAN	39800	Sep 2	60800
LOWEST DAILY MEAN	579	Aug 9	558
ANNUAL SEVEN-DAY MINIMUM	603	Aug 12	615
MAXIMUM PEAK FLOW			65100
MAXIMUM PEAK STAGE			37.01
ANNUAL RUNOFF (AC-FT)	1932000		2662000
10 PERCENT EXCEEDS	5570		6630
50 PERCENT EXCEEDS	1790		1620
90 PERCENT EXCEEDS	761		728

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08175800 Guadalupe River at Cuero, TX--Continued



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 Coleta Creek. and at mile 50.7.

PERIOD OF RECORD.--Nov. 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 data: Aug. 1945 to Aug. 1994. Biochemical data: Jan. 1968 to Aug. 1994. Pesticide data: Feb. 1974 to Aug. 1981. Sediment data: Apr. 1959, Aug. 1973 to Aug. 1994. Specific conductance: Oct. 1945 to Sept. 1981. Water temperature: Nov. 1950 to Sept. 1981.

GAGE.--Water-stage recorder. Datum of gage is 29.15 ft above NGVD of 1929. Nov. 1, 1934, to July 27, 1992, at site just upstream from pier on left bank of upstream bridge at same datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in Nov. 1934, at least 10% of contributing drainage area has been regulated. There are many diversions above station. The city of Victoria releases wastewater effluent into the river below this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1929, reached a stage of 30.2 ft, present site and datum, maximum stage since at least 1833, that of July 3, 1936.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1450	1410	6200	2620	e1730	1310	1130	1040	1030	1420	3770	6080
2	1310	1460	7380	2350	e1840	1280	1160	1060	973	4030	3730	6080
3	1390	1310	9340	2160	e1830	1320	1140	1010	933	9220	4590	6070
4	1360	1070	7250	2150	e1710	1290	1140	956	890	11700	3830	6020
5	1290	1140	6820	2210	1720	1360	1110	946	855	14400	3420	6000
6	1970	1180	6360	2260	1700	1310	1100	968	865	17700	3350	6190
7	1280	883	5440	2330	1750	1290	1100	942	753	23300	3240	5760
8	1070	1130	5240	2760	1620	1290	1640	932	752	26600	3110	6070
9	1090	1070	5170	2760	1700	1270	3560	931	823	42800	3000	6440
10	992	1030	4800	2430	1710	1280	8630	856	792	67800	2930	6510
11	1040	1110	4430	2360	1640	1230	11000	845	643	59400	2940	6240
12	953	1120	5940	2260	1550	1270	9280	864	758	42900	2770	6190
13	1260	1060	5410	2180	1490	e1350	3270	884	714	29000	2690	5830
14	1350	1040	7230	2170	1510	e1420	2010	838	637	20300	4160	5970
15	1730	1080	6590	2180	1470	1780	1660	833	838	14400	4710	6640
16	3100	3300	4660	2030	1440	1080	1540	898	776	15600	4910	6710
17	2100	2270	5310	1830	1370	1190	1430	901	605	19100	5000	6200
18	1470	4830	8180	1830	1370	1190	1390	904	704	13300	5320	6090
19	1160	9340	8530	1960	1390	1190	1310	763	628	11100	5910	6010
20	1380	10800	5920	1920	1430	1210	1240	861	829	11800	6120	6020
21	1480	6730	4640	1750	1390	1270	1160	901	657	12000	6160	5930
22	1460	4620	4700	1690	1370	1300	1140	806	724	10000	6160	6080
23	1450	5330	5060	1690	1360	1340	1120	787	745	7940	6190	6170
24	1430	5900	4760	1610	1290	1260	1140	783	660	7010	6160	5960
25	1420	6210	3370	1620	1340	1190	1090	782	597	6380	6160	5560
26	1420	6200	3090	1750	1340	1150	1090	789	593	5850	6140	4100
27	1410	6110	2970	1610	1320	1140	1080	841	777	5410	6140	2760
28	1340	5310	2840	1590	1320	1150	1070	841	578	5070	6120	2170
29	1400	5050	2680	1630	---	1150	1040	865	852	4700	6100	1910
30	1340	5690	2680	1650	---	1190	1050	949	1300	4380	6070	1690
31	1400	---	2650	1670	---	1130	---	1050	---	4120	6070	---
TOTAL	44295	104783	165640	63010	42700	38580	66820	27626	23281	528730	146970	165450
MEAN	1429	3493	5343	2033	1525	1245	2227	891.2	776.0	17060	4741	5515
MAX	3100	10800	9340	2760	1840	1420	11000	1060	1300	67800	6190	6710
MIN	953											

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2002, BY WATER YEAR (WY)

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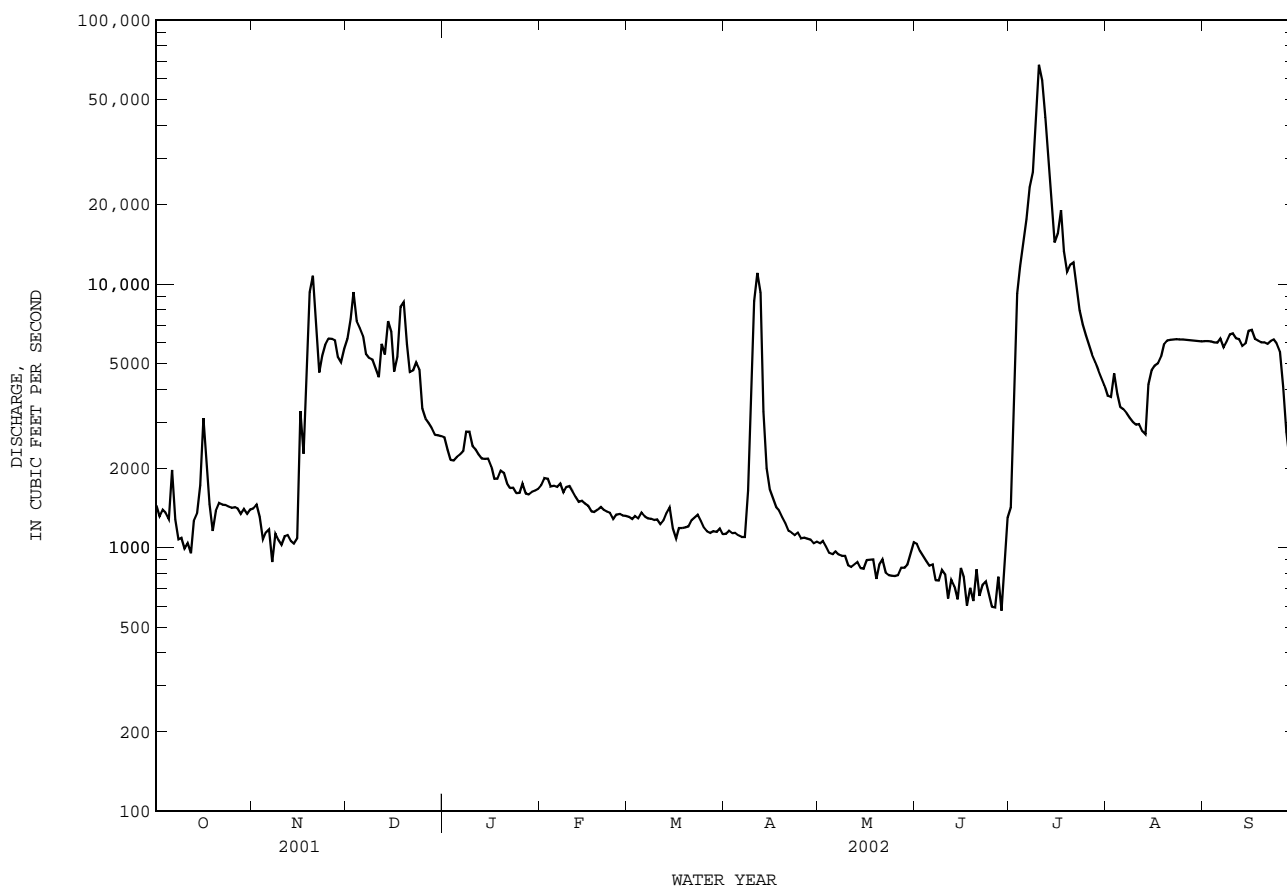
08176500 Guadalupe River at Victoria, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1935 - 2002	
ANNUAL TOTAL	980571		1417885		1932	
ANNUAL MEAN	2686		3885		6993	
HIGHEST ANNUAL MEAN					132	
LOWEST ANNUAL MEAN					307000	
HIGHEST DAILY MEAN	35800	Sep 3	67800	Jul 10	14	Oct 20 1998
LOWEST DAILY MEAN	483	Aug 25	578	Jun 28	22	Aug 20 1956
ANNUAL SEVEN-DAY MINIMUM	512	Aug 13	668	Jun 22	1466000	Sep 29 1956
MAXIMUM PEAK FLOW			71700	Jul 10	30.32	Oct 20 1998
MAXIMUM PEAK STAGE			30.32	Jul 10	a34.04	Oct 20 1998
ANNUAL RUNOFF (AC-FT)	1945000		2812000		1399000	
10 PERCENT EXCEEDS	5460		6670		3600	
50 PERCENT EXCEEDS	1870		1650		991	
90 PERCENT EXCEEDS	735		859		366	

e Estimated

i From indirect measurement of peak flow.

a From floodmark.



GUADALUPE RIVER BASIN

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 De Witt-Goliad County line, on right downstream end of bridge on U.S. Highway 183, and 2.4 mi northeast of Weser.

DRAINAGE AREA.--167 mi².

PERIOD OF RECORD.--Oct. 1984 to Sept. 1989 (daily mean discharge), Oct. 1989 to current year (peak discharges greater than base discharge).

GAGE.--Water-stage recorder. Datum of gage is 158.40 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions.

AVERAGE DISCHARGE.--5 years (water years 1985-89), 18.7 ft³/s (13,550 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,400 ft³/s June 22, 1997 (gage height, 26.68 ft), from rating curve extended above 2,840 ft³/s; minimum discharge, no flow for several days in 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jul 16	1400	1,290	12.91	Sep 15	2245	1,190	12.64
Sep 8	2030	*1,330	*13.02				

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GUADALUPE RIVER BASIN

08176900 Coleta 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 Coleta Creek Reservoir, and 26.0 mi upstream from mouth.

DRAINAGE AREA.--357 mi².

PERIOD OF RECORD.--Oct. 1978 to current year. Records equivalent for Jan. 1930 to Dec. 1933 and Oct. 1952 to Sept. 1979, published as "near Schroeder" (discontinued station 08177000).

GAGE.--Water-stage recorder. Datum of gage is 100.43 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions. No flow at times.

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 Oct. 1925, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	28	4.0	5.1	8.5	7.0	4.4	2.5	1.9	57	11	3.2
2	25	28	609	4.8	8.2	7.2	4.3	2.4	1.7	484	9.7	3.3
3	26	28	834	4.4	8.0	6.9	4.2	2.4	1.5	252	9.1	3.4
4	25	28	369	4.3	8.3	6.7	4.1	2.3	1.3	82	8.5	3.4
5	26	29	84	5.0	8.4	6.6	4.1	2.2	1.2	49	8.0	3.3
6	253	28	39	4.9	9.0	6.4	4.2	2.1	1.1	26	7.5	3.3
7	141	28	26	4.4	8.9	6.3	4.3	1.9	1.5	36	7.1	3.6
8	67	28	22	4.4	8.8	6.3	9.3	1.6	0.89	15	6.6	62
9	54	32	35	4.4	8.7	6.3	7.3	1.5	0.74	10	6.4	939
10	46	28	28	4.4	8.4	6.0	6.4	1.6	0.69	8.1	6.4	805
11	44	27	120	4.4	7.9	6.0	5.9	1.5	0.61	7.9	6.6	307
12	47	29	602	4.3	7.9	5.9	5.1	1.4	0.51	8.8	6.4	115
13	71	29	103	4.5	8.2	5.7	4.5	1.4	0.44	6.6	5.8	70
14	81	29	43	4.7	8.1	5.7	4.2	1.6	0.36	6.1	5.7	51
15	84	124	29	4.6	8.2	5.7	4.1	1.8	0.33	106	5.7	e1760
16	70	1580	166	4.9	8.3	5.6	4.1	1.8	0.38	2970	5.4	1700
17	49	602	105	5.1	8.1	5.7	4.0	2.7	0.25	2880	5.1	442
18	36	198	43	5.4	8.2	5.8	3.7	2.7	0.20	533	4.6	193
19	35	97	25	5.7	8.4	5.8	3.7	2.1	0.14	185	4.4	114
20	31	57	18	5.8	8.2	6.0	3.6	1.9	0.11	105	4.1	122
21	27	40	14	5.9	8.0	5.7	3.4	1.9	0.11	73	3.9	97
22	24	29	12	6.2	8.4	5.5	3.3	1.9	0.18	55	3.9	63
23	24	22	11	6.6	7.8	5.3	3.3	1.8	0.18	44	3.8	49
24	23	16	9.5	6.9	7.8	5.3	3.3	1.8	0.11	35	3.8	41
25	22	11	8.4	6.9	7.8	5.3	3.0	1.8	0.09	29	3.7	35
26	26	8.1	7.7	7.0	7.2	5.2	2.9	1.6	0.09	25	3.6	30
27	28	6.3	7.3	7.3	6.8	5.0	2.8	1.5	0.38	21	3.5	27
28	28	4.7	6.9	7.8	6.7	5.0	2.8	1.4	1.5	18	3.4	24
29	28	4.6	6.4	8.1	---	5.1	2.7	1.4	3.6	16	3.5	21
30	29	4.2	6.0	8.7	---	5.2	2.6	2.0	102	14	3.3	19
31	28	---	5.6	8.8	---	4.8	---	2.3	---	12	3.2	---
TOTAL	1524	3202.9	3398.8	175.7	227.2	181.0	125.6	58.8	124.09	8169.5	173.7	7109.5
MEAN	49.16	106.8	109.6	5.668	8.114	5.839	4.187	1.897	4.136	263.5	5.603	237.0
MAX	253	1580	834	8.8	9.0	7.2	9.3	2.7	102	2970	11	1760
MIN	22	4.2	4.0	4.3	6.7	4.8	2.6	1.4	0.09	6.1	3.2	3.2
AC-FT	3020	6350	6740	349	451	359	249	117	246	16200	345	14100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 2002, BY WATER YEAR (WY)

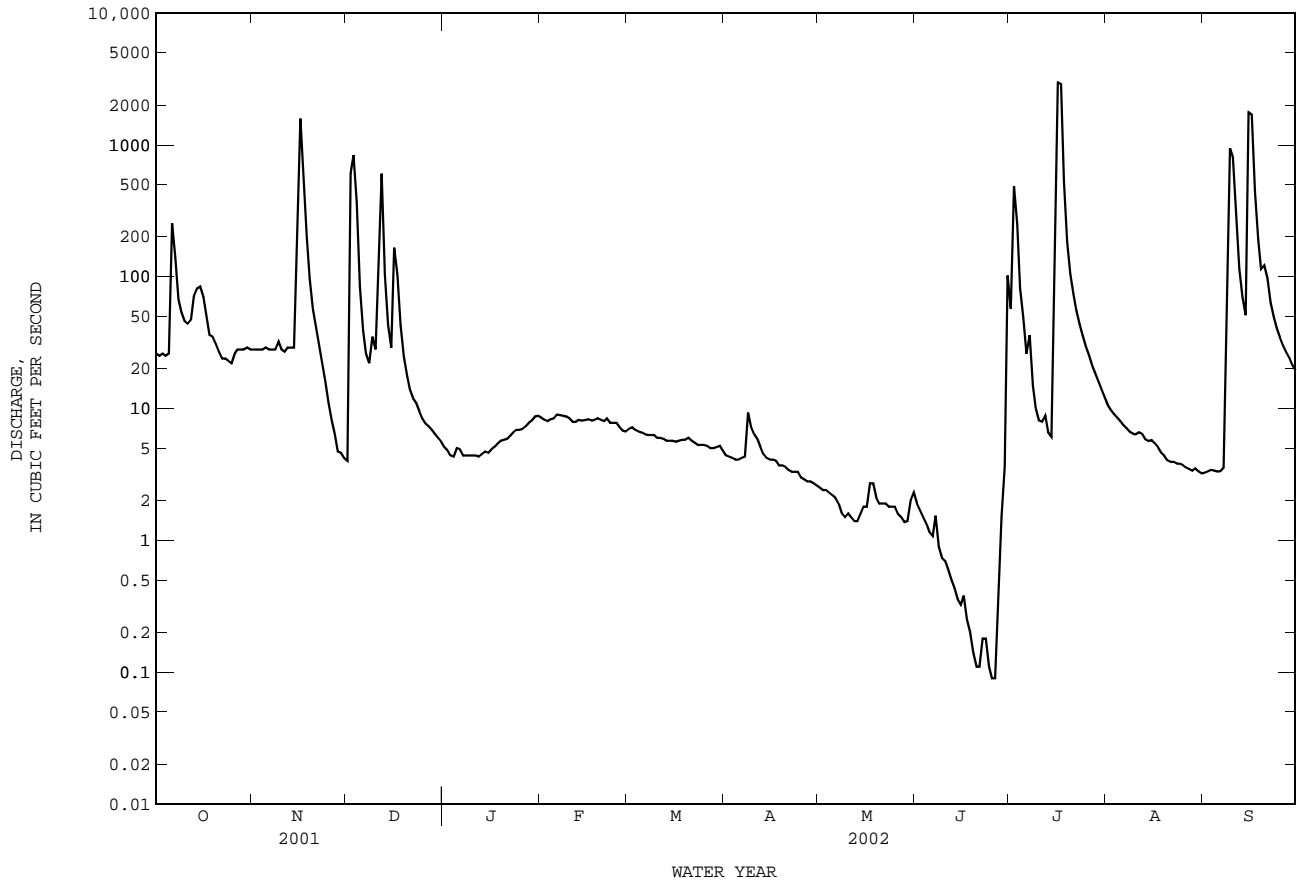
	MEAN	108.7	71.46	41.54	50.12	64.59	53.44	121.1	108.2	161.2	34.77	46.41	96.89
MAX	895	651	301	400	486	265	1021	608	1191	264	602	920	
(WY)	1999	1999	1987	1979	1992	1997	1997	1979	1997	2002	2001	1998	
MIN	0.000	0.049	0.94	2.62	2.71	2.78	1.56	0.29	0.48	0.048	0.000	0.000	
(WY)	2001	1990	1990	1990	1996	1996	1996	1996	2001	2001	1996	1989	

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR			FOR 2002 WATER YEAR			WATER YEARS 1979 - 2002		
ANNUAL TOTAL	49400.54			24470.79					
ANNUAL MEAN	135.3			67.04			79.62		
HIGHEST ANNUAL MEAN							222		
LOWEST ANNUAL MEAN							2.47		
HIGHEST DAILY MEAN	18200	Aug 31		2970	Jul 16		24600	Jun 22	1997
LOWEST DAILY MEAN	0.00	Jul 9		0.09	Jun 25		0.00	Aug 20	1989
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 9		0.12	Jun 20		0.00	Aug 20	1989
MAXIMUM PEAK FLOW				5910	Jul 16		c44500	Jun 22	1997
MAXIMUM PEAK STAGE				15.45	Jul 16		31.17	Jun 22	1997
ANNUAL RUNOFF (AC-FT)	97990			48540			57680		
10 PERCENT EXCEEDS	81			84			64		
50 PERCENT EXCEEDS	8.7			6.9			11		
90 PERCENT EXCEEDS	0.00			1.6			0.72		

e Estimated

c From rating curve extended above measurement of 26,600 ft³/s.

08176900 Coleta Creek at Arnold Road Crossing near Schroeder, TX--Continued



GUADALUPE RIVER BASIN

08177300 Perdido Creek at Farm to Market Road 622 near Fannin, TX

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 mi².

PERIOD OF RECORD.--June 1978 to Sept. 1991 (daily mean discharge), Oct. 1991 to Dec. 2001 (peak discharges greater than base discharge), Jan. 2002 to current year (daily mean discharge).

GAGE.--Water-stage recorder. Datum of gage is 134.66 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation or diversions. No flow at times.

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 Texas Department of Transportation.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	e0.38	0.00	0.15	0.25	0.17	0.12	0.25	0.17	e0.09
2	---	---	---	e0.37	0.00	0.13	0.25	0.16	0.11	0.23	0.17	e0.17
3	---	---	---	0.37	0.0	0.10	0.24	0.17	0.11	0.15	0.18	e0.08
4	---	---	---	0.36	0.0	0.12	0.24	0.17	0.08	0.12	0.20	0.00
5	---	---	---	0.66	0.02	0.14	0.24	0.15	0.05	0.10	0.19	0.00
6	---	---	---	0.35	0.03	0.15	0.25	0.12	0.07	0.10	0.16	0.00
7	---	---	---	0.32	0.02	0.15	0.26	0.13	0.11	0.09	0.13	0.00
8	---	---	---	0.33	0.02	0.15	1.2	0.12	0.05	0.09	0.08	50
9	---	---	---	0.34	0.03	0.15	0.25	0.10	0.05	0.13	0.11	273
10	---	---	---	0.32	0.02	0.14	0.24	0.12	0.05	0.12	0.21	48
11	---	---	---	e0.29	0.03	0.17	0.24	0.13	0.02	0.10	0.21	17
12	---	---	---	e0.27	0.04	0.17	0.23	0.12	0.01	0.08	0.16	3.2
13	---	---	---	e0.30	0.04	0.17	0.24	0.14	0.00	0.07	0.07	1.4
14	---	---	---	e0.25	0.04	0.17	0.23	0.13	0.00	0.06	0.19	0.91
15	---	---	---	e0.28	0.04	0.18	0.22	0.11	0.00	0.20	0.25	10
16	---	---	---	e0.24	0.04	0.17	0.23	0.11	0.00	340	0.14	28
17	---	---	---	e0.28	0.04	0.19	0.22	0.18	0.00	58	0.04	6.5
18	---	---	---	e0.25	0.06	0.20	0.21	0.14	0.00	5.1	0.01	1.8
19	---	---	---	e0.29	0.06	0.20	0.21	0.14	0.00	0.42	0.01	65
20	---	---	---	e0.23	0.06	0.21	0.20	0.13	0.00	0.24	0.00	106
21	---	---	---	e0.28	0.06	0.19	0.20	0.12	0.00	0.21	0.00	15
22	---	---	---	e0.24	0.06	0.19	0.19	0.12	0.00	0.21	0.00	3.3
23	---	---	---	e0.29	0.07	0.22	0.19	0.13	0.00	0.20	0.0	0.71
24	---	---	---	e0.25	0.08	0.23	0.19	0.13	0.00	0.20	0.01	0.45
25	---	---	---	e0.23	0.09	0.25	0.20	0.14	0.00	0.19	0.02	0.40
26	---	---	---	e0.28	0.08	0.24	0.19	0.13	0.00	0.19	0.02	0.35
27	---	---	---	e0.26	0.11	0.25	0.18	0.11	0.00	0.18	0.02	0.33
28	---	---	---	e0.30	0.11	0.25	0.19	0.10	0.00	0.17	0.03	0.30
29	---	---	---	0.10	---	0.25	0.18	0.28	0.77	0.18	0.05	0.27
30	---	---	---	0.00	---	0.25	0.17	0.18	7.5	0.17	0.05	0.25
31	---	---	---	0.00	---	0.24	---	0.14	---	0.17	0.07	---
TOTAL	---	---	---	8.71	1.25	5.77	7.53	4.32	9.10	407.72	2.95	632.51
MEAN	---	---	---	0.281	0.045	0.186	0.251	0.139	0.303	13.15	0.095	21.08
MAX	---	---	---	0.66	0.11	0.25	1.2	0.28	7.5	340	0.25	273
MIN	---	---	---	0.00	0.00	0.10	0.17	0.10	0.00	0.06	0.00	0.00
AC-FT	---	---	---	17	2.5	11	15	8.6	18	809	5.9	1250

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2002h, BY WATER YEAR (WY)

	MEAN	8.398	3.277	3.152	3.764	4.800	2.036	4.320	9.464	8.119	8.277	0.363	4.521
MAX	72.0	17.6	36.5	31.6	32.2	12.7	41.8	84.5	55.4	45.7	1.16	21.1	
(WY)	1982	1979	1987	1979	1982	1985	1991	1981	1987	1990	1989	2002	
MIN	0.000	0.000	0.000	0.040	0.045	0.19	0.23	0.11	0.000	0.002	0.027	0.000	
(WY)	1990	1990	1990	1990	2002	2002	1981	1989	1990	1989	1988	1988	

SUMMARY STATISTICS FOR 2002 WATER YEAR WATER YEARS 1978 - 2002h

ANNUAL MEAN	5.045	
HIGHEST ANNUAL MEAN	12.7	1981
LOWEST ANNUAL MEAN	0.22	1988
HIGHEST DAILY MEAN	1890	Oct 31 1981
LOWEST DAILY MEAN	0.00	Jul 16 1986
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 16 1986
MAXIMUM PEAK FLOW	c13300	Nov 15
MAXIMUM PEAK STAGE	14.50	Nov 15
ANNUAL RUNOFF (AC-FT)	3660	
10 PERCENT EXCEEDS	1.5	
50 PERCENT EXCEEDS	0.33	
90 PERCENT EXCEEDS	0.00	

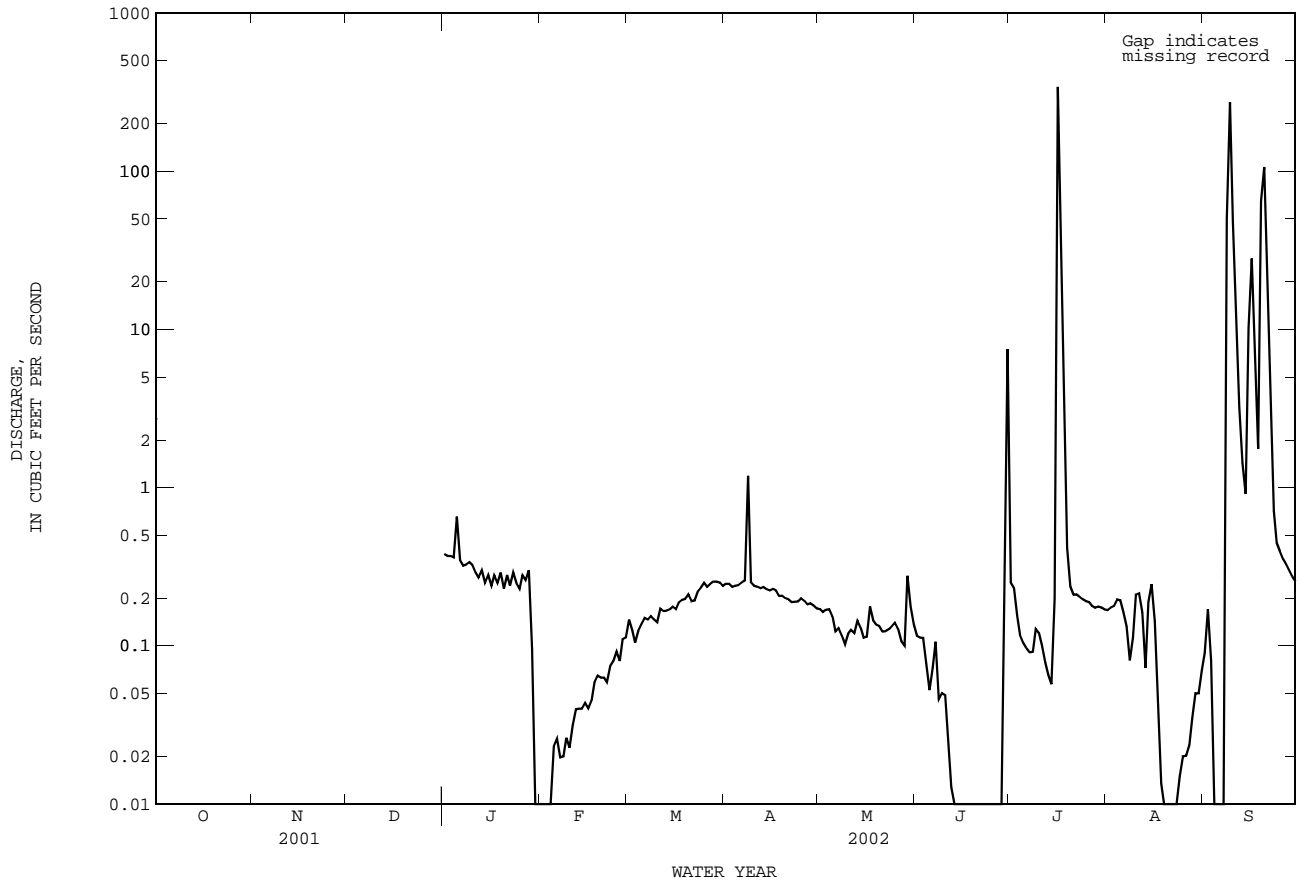
e Estimated

h See PERIOD OF RECORD paragraph.

c From rating curve extended above discharge measurement of 2,300 ft³/s.

a From floodmark.

08177300 Perdido Creek at Farm to Market Road 622 near Fannin, TX--Continued



GUADALUPE RIVER BASIN

08177400 Coletto Creek Reservoir near Victoria, TX

LOCATION.--Lat 28°43'51", long 97°09'53", Victoria County, Hydrologic Unit 12100204, on right upstream end of spillway of dam on Coletto 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.--Feb. 1980 to current year.

REVISED RECORDS.--From Feb. 1980 to Sept. 2000, total daily contents of the main reservoir, the Turkey Creek Arm, and the Sulphur Creek Arm published as station 08177400. Revised daily contents for Turkey Creek Arm are stored as station 08177240 Turkey Creek Arm of Coletto Creek Reservoir near Schroeder and revised daily contents for Sulphur Creek Arm are stored as station 08177380 Sulphur Creek Arm of Coletto Creek Reservoir near Fannin. Revised Daily contents not presented in this report.

GAGE.--Water-stage recorder. Datum of gage NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good. The reservoir system consists of the main reservoir, Turkey Creek Arm, and Sulphur Creek Arm. Figures shown below are the contents of the main reservoir only. As of July 1999, the Turkey Creek Arm and Sulphur Creek Arm stations are operated by the Guadalupe-Blanco River Authority. 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 Feb. 1980. Conservation pool storage is 35,080 acre-ft.

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-ft 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 are given in the following table:

	Coletto Creek Reservoir	Turkey Creek Arm	Sulphur Creek Arm
	Elevation	Elevation	Elevation
	(feet)	(feet)	(feet)
Top of dam.....	119.0	107.0	107.0
Emergency spillway.....	107.3	--	--
Top of spillway gates.....	99.4	102.9	102.9
Crest of spillway.....	71.0	91.9	91.9

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, 36,680 acre-ft, Aug. 31, 2001, elevation, 99.94 ft; minimum since reservoir was first filled in May 1980, 20,330 acre-ft, Aug. 20, 21, 1996, elevation, 93.27 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 33,700 acre-ft, July 16, elevation, 98.89 ft; minimum contents, 26,670 acre-ft, June 28, elevation, 96.17 ft.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

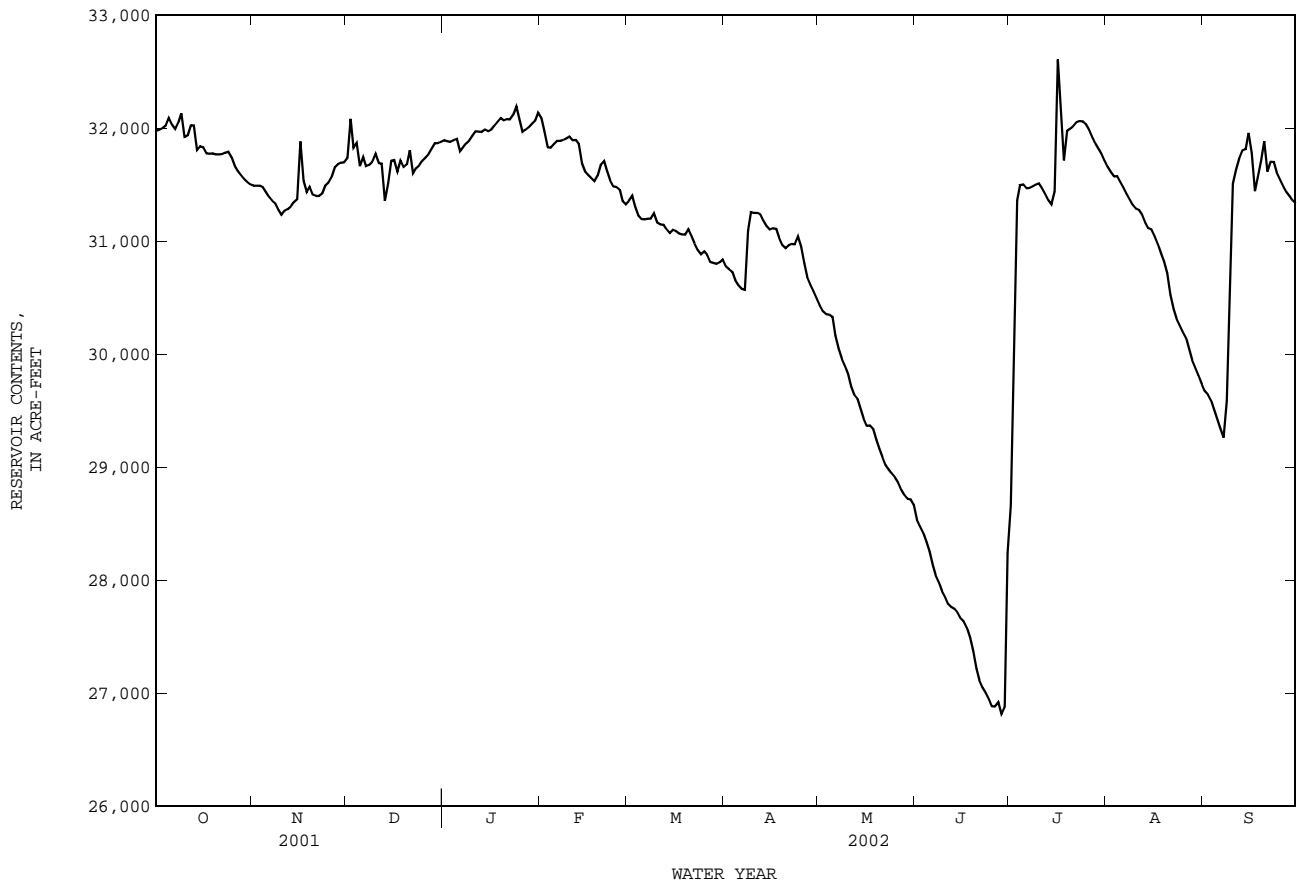
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31980	31490	31730	31890	32090	31360	30770	30430	28530	28660	31660	29670
2	31990	31490	32080	31880	31970	31400	30750	30380	28480	29890	31610	29640
3	32000	31490	31820	31880	31830	31310	30730	30350	28420	31360	31570	29590
4	32020	31480	31870	31890	31830	31230	30650	30350	28340	31490	31570	29500
5	32090	31440	31660	31900	31860	31200	30610	30330	28250	31500	31530	29420
6	32030	31390	31740	31790	31890	31190	30580	30160	28130	31470	31480	29340
7	31990	31360	31660	31830	31890	31200	30570	30050	28050	31470	31420	29260
8	32050	31330	31670	31860	31900	31200	31090	29960	27980	31480	31370	29590
9	32130	31270	31700	31890	31910	31240	31260	29900	27900	31500	31320	30770
10	31920	31230	31770	31930	31920	31160	31250	29820	27850	31510	31280	31510
11	31940	31270	31690	31970	31890	31150	31250	29710	27790	31470	31270	31630
12	32030	31280	31680	31970	31890	31140	31230	29640	27760	31420	31230	31730
13	32020	31310	31360	31970	31860	31100	31180	29600	27740	31360	31160	31800
14	31800	31350	31510	31990	31690	31070	31130	29510	27710	31320	31110	31810
15	31840	31370	31710	31970	31610	31100	31100	29430	27660	31440	31100	31960
16	31830	31880	31720	31990	31580	31090	31110	29370	27630	32610	31040	31780
17	31780	31530	31610	32020	31550	31070	31110	29370	27580	32170	30970	31440
18	31770	31430	31710	32050	31530	31060	31030	29340	27490	31710	30890	31580
19	31780	31480	31660	32090	31580	31060	30970	29240	27370	31970	30820	31710
20	31770	31410	31680	32070	31680	31100	30940	29160	27210	31990	30710	31880
21	31770	31400	31800	32080	31710	31040	30960	29090	27110	32020	30520	31610
22	31770	31400	31600	32080	31620	30980	30970	29020	27050	32050	30400	31700
23	31780	31420	31650	32120	31540	30920	30970	28980	27000	32060	30310	31700
24	31790	31490	31670	32190	31480	30880	31040	28940	26950	32060	30260	31610
25	31740	31520	31710	32070	31480	30910	30950	28910	26880	32030	30190	31550
26	31660	31570	31740	31960	31450	30880	30800	28860	26880	31990	e30140	31490
27	31620	31660	31770	31980	31350	30820	30680	28800	26920	31930	30040	31430
28	31580	31680	31820	32010	31320	30810	30610	28750	26810	31870	29950	31400
29	31550	31690	31860	32040	---	30800	30560	28720	26870	31820	29880	31360
30	31520	31690	31860	32070	---	30810	30490	28710	28240	31770	29810	31340
31	31500	---	31880	32140	---	30840	---	28660	---	31710	29730	---
MEAN	31840	31460	31720	31990	31710	31070	30910	29470	27620	31580	30850	31030
MAX	32130	31880	32080	32190	32090	31400	31260	30430	28530	32610	31660	31960
MIN	31500	31230	31360	31790	31320	30800	30490	28660	26810	28660	29730	29260
(+)	98.08	98.15	98.22	98.32	98.02	97.83	97.69	96.99	96.81	98.16	97.40	98.02
(@)	+470	+190	+190	+260	-820	-480	-350	-1830	-420	+3470	-1980	+1610
CAL YR 2001	MAX	33210	MIN	24350	(@)	+930						
WTR YR 2002	MAX	32610	MIN	26810	(@)	-630						

e Estimated

(+) Elevation, in feet, at end of month.

(@) Change in contents, in acre-feet.

08177400 Coleta Creek Reservoir near Victoria, TX--Continued



GUADALUPE RIVER BASIN

08177500 Coleta 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 Coleta 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 Sept. 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 NGVD of 1929. Prior to Jan. 17, 1955, at datum 5.0 ft higher. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since water year 1981, at least 10% of contributing drainage area has been regulated. Beginning on Mar. 6, 1980, water diverted from the Guadalupe River basin to the Coleta Creek basin upstream from Coleta Creek Reservoir for industrial use. There are no other large diversions above station. No flow at times.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--16 years (water years 1940-54, 1979-80), 92.7 ft³/s (67,160 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1939-54, 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	13	0.71	e4.5	3.2	2.7	3.0	2.7	3.7	11	0.68	0.71
2	19	13	e2590	e4.6	3.2	2.8	3.1	2.6	3.6	28	0.68	0.79
3	19	13	e1270	e4.6	3.1	2.6	3.0	2.6	3.6	12	0.72	2.7
4	19	13	e624	e4.5	5.0	2.8	2.9	2.5	3.5	7.6	0.78	1.9
5	73	22	e90	e135	4.1	5.1	2.8	2.5	3.4	6.5	0.73	e0.98
6	370	15	e169	e25	3.2	3.8	3.0	5.4	3.3	5.9	0.72	0.66
7	170	14	e75	5.1	3.4	3.3	3.1	4.0	3.2	5.7	0.73	0.66
8	23	13	e136	4.7	3.3	3.2	15	3.2	3.1	12	0.86	0.66
9	57	17	e60	4.5	3.2	3.1	5.8	3.0	3.3	8.7	0.91	0.65
10	161	15	e154	4.2	3.1	3.1	4.0	2.8	7.4	7.1	1.0	0.66
11	26	14	e184	3.9	3.1	3.7	3.6	2.7	5.3	6.1	1.1	e4.0
12	21	14	e1490	3.7	3.1	3.3	3.3	2.6	4.1	5.8	0.97	7.4
13	390	14	262	e3.6	3.1	3.1	3.1	2.9	3.5	5.7	0.90	7.4
14	29	14	20	e3.5	3.1	3.0	3.1	2.9	3.3	6.0	0.91	7.4
15	19	882	87	3.5	2.9	2.9	3.0	2.9	3.4	7.4	0.96	e1040
16	16	5180	507	3.3	2.8	2.8	3.0	1.7	3.7	6720	0.88	1440
17	15	853	296	3.3	2.9	2.8	3.0	0.66	3.5	3080	0.80	633
18	15	340	14	3.2	2.9	2.7	2.9	0.66	3.4	487	0.78	39
19	14	12	163	3.3	2.8	2.8	2.9	0.66	3.3	25	3.5	251
20	14	6.3	9.7	3.5	2.7	2.8	3.0	0.66	3.3	113	1.9	539
21	14	4.2	75	3.5	2.7	2.8	3.0	e3.2	3.9	6.0	1.1	98
22	14	3.1	112	3.4	2.5	2.8	3.0	3.2	4.0	2.6	0.87	5.0
23	13	2.2	7.6	3.6	2.5	2.9	2.9	3.2	3.8	1.7	0.76	2.1
24	13	1.5	5.9	3.7	2.5	3.1	2.8	3.3	3.6	1.4	0.71	1.4
25	13	1.1	5.3	76	2.5	3.1	2.7	3.4	3.6	1.1	0.68	0.96
26	13	0.83	e4.8	5.7	2.5	3.0	2.7	3.4	3.7	0.93	0.68	0.75
27	13	0.71	4.4	4.1	2.6	3.0	2.7	3.3	4.1	0.82	0.67	0.67
28	13	0.71	4.3	3.5	2.5	3.0	2.7	3.3	4.3	0.74	0.71	0.65
29	13	0.77	4.5	3.5	---	3.0	2.7	3.9	15	0.71	0.72	0.62
30	13	0.69	4.5	3.4	---	3.3	2.7	4.1	32	0.69	0.73	0.60
31	13	---	4.5	3.2	---	3.2	---	3.8	---	0.68	0.71	---
TOTAL	1634	7493.11	8434.21	345.1	84.5	95.6	104.5	87.74	152.9	10577.87	28.85	4089.32
MEAN	52.71	249.8	272.1	11.13	3.018	3.084	3.483	2.830	5.097	341.2	0.931	136.3
MAX	390	5180	2590	135	5.0	5.1	15	5.4	32	6720	3.5	1440
MIN	13	0.69	0.71	3.2	2.5	2.6	2.7	0.66	3.1	0.68	0.67	0.60
AC-FT	3240	14860	16730	685	168	190	207	174	303	20980	57	8110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2002z, BY WATER YEAR (WY)

MEAN	187.9	94.44	75.82	36.40	101.3	88.13	184.4	135.0	238.1	66.55	25.24	118.6
MAX	1313	949	739	347	961	545	1817	940	1426	397	370	1202
(WY)	1999	1999	2002	1992	1992	1997	1997	1993	1993	1990	2001	2001
MIN	1.61	1.90	2.01	1.93	1.98	2.05	2.07	2.09	0.043	0.009	0.92	1.56
(WY)	1996	1997	1997	1996	1996	1996	1996	1996	2001	2001	2002	1989

08177500 Coleta Creek near Victoria, TX--Continued

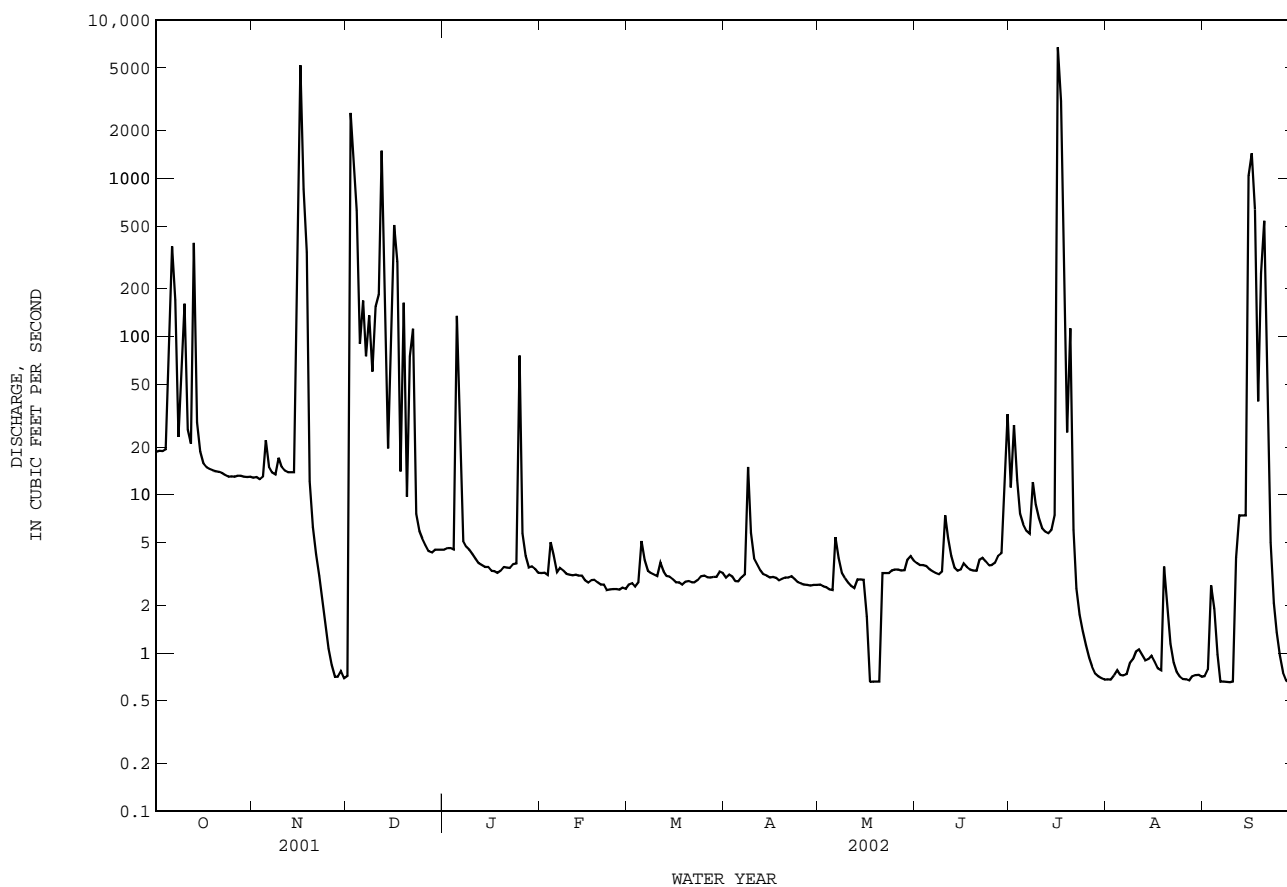
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1981 - 2002z	
ANNUAL TOTAL	73558.32	33127.70	112.2	
ANNUAL MEAN	201.5	90.76	302	1997
HIGHEST ANNUAL MEAN			1.98	1996
LOWEST ANNUAL MEAN			27500	Apr 4 1997
HIGHEST DAILY MEAN	15300 Sep 1	6720 Jul 16	0.00	May 6 1981
LOWEST DAILY MEAN	0.00 Jun 19	0.60 Sep 30	0.00	Jul 5 2001
ANNUAL SEVEN-DAY MINIMUM	0.00 Jul 5	0.70 Jul 28	c50100	Apr 4 1997
MAXIMUM PEAK FLOW		11500 Dec 2	a32.05	Apr 4 1997
MAXIMUM PEAK STAGE		17.97 Dec 2	81300	
ANNUAL RUNOFF (AC-FT)	145900	65710	29	
10 PERCENT EXCEEDS	217	75	4.9	
50 PERCENT EXCEEDS	4.1	3.3	2.0	
90 PERCENT EXCEEDS	0.00	0.75		

e Estimated

z Period of regulated streamflow.

c From rating curve extended above discharge measurements of 32,200 ft³/s and 36,300 ft³/s.

a From floodmark.



GUADALUPE RIVER BASIN

08177520 Guadalupe River near Bloomington, TX

LOCATION.--Lat 28°39'43", long 96°57'55", Victoria County, Hydrologic Unit 12100204, on left bank at Dupont pump station, 1.8 mi upstream from Dalton Bridge, about 10.5 mi west of Bloomington, and at mile 28.2.

DRAINAGE AREA.--5,816 mi².

PERIOD OF RECORD.--Feb. 1999 to current year (daily mean stage).

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair. Interruptions in the record were due to the malfunction of the instrument. Since installation of gage in Jan. 1999, at least 10% of contributing drainage area has been regulated. There are many diversions above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 27.67 ft, July 10, 2002; minimum gage height, 8.52 ft, Aug. 3-5, 7-9, 11, 2000.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 20, 1998, reached a stage of 33.92 ft, from National Weather Service floodmark.

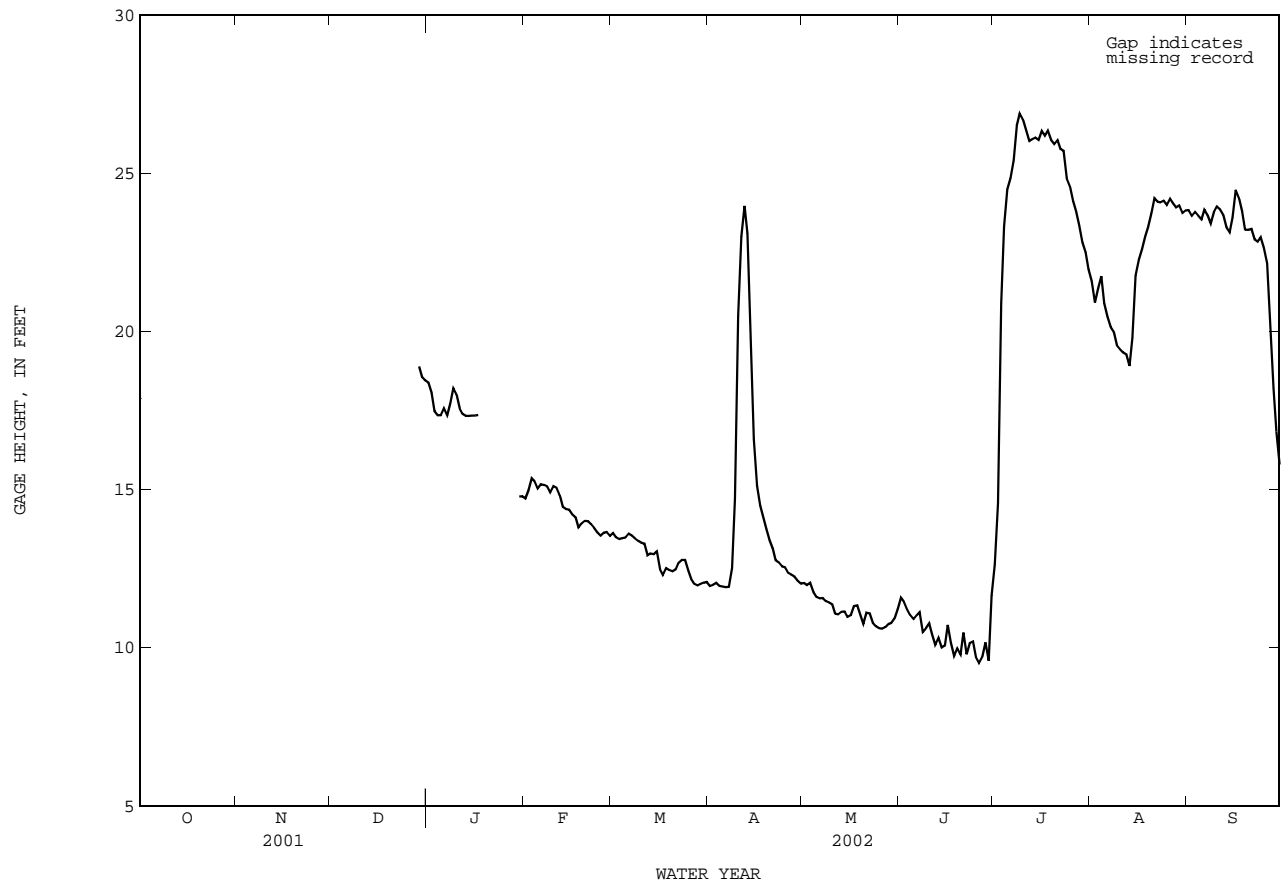
EXTREMES FOR CURRENT YEAR.--Maximum gage height, 27.26 ft, July 10; minimum gage height, 9.34 ft, June 29.

GAGE HEIGHT FROM DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	18.38	14.72	13.63	11.94	12.05	11.58	12.64	21.58	23.84
2	---	---	---	18.06	14.98	13.48	11.99	11.98	11.46	14.55	20.91	23.66
3	---	---	---	17.48	15.36	13.43	12.05	12.04	11.22	20.87	21.36	23.77
4	---	---	---	17.35	15.26	13.47	11.96	11.77	11.03	23.32	21.74	23.65
5	---	---	---	17.35	15.04	13.49	11.94	11.60	10.90	24.48	20.88	23.54
6	---	---	---	17.57	15.17	13.61	11.92	11.56	11.02	24.83	20.47	23.84
7	---	---	---	17.35	15.14	13.55	11.93	11.58	11.12	25.41	20.14	23.67
8	---	---	---	17.71	15.10	13.47	12.52	11.47	10.50	26.52	19.98	23.41
9	---	---	---	18.21	14.91	13.39	14.71	11.43	10.61	26.89	19.55	23.78
10	---	---	---	18.01	15.10	13.32	20.49	11.37	10.76	26.70	19.44	23.95
11	---	---	---	17.57	15.06	13.29	23.00	11.08	10.42	26.37	19.33	23.86
12	---	---	---	17.39	14.81	---	23.97	11.06	10.08	26.01	19.27	23.69
13	---	---	---	17.33	14.46	12.98	23.10	11.14	10.31	26.07	18.91	23.29
14	---	---	---	17.33	14.38	12.96	19.83	11.14	10.01	26.12	19.80	23.14
15	---	---	---	17.34	14.37	13.05	16.58	10.97	10.07	26.05	21.77	23.60
16	---	---	---	17.34	14.21	12.48	15.13	11.02	10.72	26.34	22.26	24.47
17	---	---	---	17.36	14.12	12.30	14.48	11.32	10.15	26.18	22.59	24.22
18	---	---	---	---	13.80	12.52	14.15	11.34	9.73	26.33	23.00	23.78
19	---	---	---	---	13.93	12.46	13.76	11.03	9.98	26.05	23.29	23.22
20	---	---	---	---	14.01	12.41	13.41	10.75	9.80	25.92	23.72	23.20
21	---	---	---	---	14.00	12.47	13.14	11.11	10.49	26.04	24.21	23.24
22	---	---	---	---	13.91	12.69	12.77	11.08	9.79	25.77	24.09	22.90
23	---	---	---	---	13.79	12.78	12.70	10.78	10.15	25.71	24.08	22.83
24	---	---	---	---	13.64	12.78	12.57	10.68	10.20	24.84	24.13	22.97
25	---	---	---	---	13.55	12.44	12.55	10.62	9.71	24.58	24.00	22.63
26	---	---	---	---	13.63	12.18	12.36	10.61	9.52	24.11	24.18	22.16
27	---	---	---	---	13.66	12.02	12.31	10.66	9.71	23.80	24.04	20.45
28	---	---	---	---	13.53	11.97	12.25	10.75	10.16	23.34	23.92	18.20
29	---	---	18.89	---	---	12.02	12.12	10.79	9.59	22.81	23.98	16.84
30	---	---	18.57	---	---	12.06	12.02	10.93	11.65	22.49	23.74	15.80
31	---	---	18.45	14.79	---	12.08	---	11.23	---	21.95	23.83	---
MEAN	---	---	---	---	14.42	---	14.46	11.19	10.41	24.29	22.07	22.72
MAX	---	---	---	---	15.36	---	23.97	12.05	11.65	26.89	24.21	24.47
MIN	---	---	---	---	13.53	---	11.92	10.61	9.52	12.64	18.91	15.80

e Estimated

08177520 Guadalupe River near Bloomington, TX--Continued



GUADALUPE RIVER BASIN

08177700 Olmos Creek at Dresden Drive, San Antonio, TX

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 Sept. 1981 (daily mean discharge), Oct. 1982 to July 2001 (peak discharges greater than base discharge), Aug. 2001 to current year (daily mean discharge).

Water-quality records.--Chemical data: Nov. 1968 to Apr. 1995, Oct. 1997 to June 1999. Biochemical data: Nov. 1968 to Apr. 1995, Oct. 1997 to June 1999. Pesticide data: Nov. 1968 to Apr. 1995, Oct. 1997 to June 1999. Sediment data: Oct. 1972 to Sept. 1973.

GAGE.--Water-stage recorder. Datum of gage is 720.00 ft above NGVD of 1929. Satellite telemeter at station.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in Sept. and Nov. 1947 reached a stage of 8.5 ft, from information by local resident. Maximum stage since 1935, that of Sept. 13, 1978.

DISCHARGE FROM ADR/DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.07	0.00	0.07	5.6	8.0	0.00	0.00	e4000	0.17	0.00
2	0.00	0.00	22	0.00	0.12	5.3	7.8	0.00	0.02	e1000	0.24	0.00
3	0.00	0.00	4.9	0.00	0.17	3.5	7.0	0.00	0.00	e400	0.17	0.00
4	0.12	0.00	0.25	0.00	0.17	3.4	6.5	0.00	0.02	e160	0.11	0.00
5	0.02	0.00	1.2	4.1	6.3	3.8	6.2	0.04	0.00	e220	0.07	0.00
6	0.00	0.00	0.10	0.00	0.86	4.6	11	0.08	0.00	e80	0.07	0.00
7	0.00	0.00	0.03	0.00	0.09	5.0	113	0.00	0.03	e38	0.14	206
8	0.00	0.00	16	0.00	0.09	5.4	33	0.00	0.00	e18	0.07	122
9	0.13	60	0.36	0.00	0.12	5.5	0.96	0.00	0.04	16	0.07	261
10	0.06	0.00	0.01	0.00	0.10	5.5	0.32	0.00	0.02	1.8	0.04	7.0
11	0.08	0.00	6.4	0.00	0.12	6.1	0.12	0.00	0.03	0.73	0.05	0.33
12	0.08	0.00	0.52	0.01	0.32	6.4	0.00	0.00	0.00	1.2	0.03	0.47
13	436	0.00	0.45	0.00	0.39	6.1	0.00	1.4	0.00	1.5	0.00	0.02
14	0.48	0.95	0.02	0.00	0.67	5.6	0.00	0.0	0.00	1.7	0.00	0.00
15	0.00	896	27	0.00	1.1	5.7	0.00	0.0	0.00	51	0.00	6.2
16	0.00	25	0.50	0.00	1.3	5.6	200	0.00	0.00	8.0	0.00	0.70
17	0.10	0.89	0.09	0.00	1.2	7.2	8.7	19	0.01	12	0.01	0.46
18	0.02	0.54	0.0	0.02	1.8	7.7	0.06	0.02	0.00	1.2	0.03	0.00
19	0.00	1.1	0.00	0.00	2.5	73	0.05	0.00	0.00	0.12	0.01	255
20	0.00	0.45	0.00	0.00	2.2	14	0.02	0.00	0.08	0.05	0.01	4.2
21	0.00	0.00	0.00	0.00	2.1	8.9	0.00	0.00	0.00	0.00	0.04	0.09
22	0.00	0.00	0.00	0.01	2.2	8.3	0.00	0.00	0.00	0.00	0.03	0.02
23	0.00	0.00	0.00	0.07	2.5	8.5	0.00	0.0	0.00	0.00	0.03	0.01
24	0.00	0.00	0.00	0.30	2.7	8.2	0.00	0.0	0.00	0.43	0.06	0.0
25	0.00	0.00	0.00	0.00	2.9	7.9	0.00	0.01	0.00	0.00	0.05	0.00
26	0.00	0.00	0.04	0.02	2.9	7.4	0.00	184	0.25	0.04	0.07	0.06
27	0.00	0.00	0.00	0.07	3.1	7.2	0.00	0.49	0.92	0.03	0.07	0.09
28	0.00	6.6	0.00	0.09	3.1	7.1	0.00	0.00	0.00	0.05	0.12	0.00
29	0.00	1.7	0.00	0.17	---	7.1	0.00	0.00	0.0	0.13	9.6	0.00
30	0.00	0.00	0.00	0.17	---	18	0.05	0.00	263	1.9	0.18	0.00
31	0.00	---	0.00	0.15	---	9.2	---	0.00	---	0.18	0.0	---
TOTAL	437.09	993.23	79.94	5.18	41.19	282.8	402.78	205.04	264.42	6014.06	11.54	863.65
MEAN	14.10	33.11	2.579	0.167	1.471	9.123	13.43	6.614	8.814	194.0	0.372	28.79
MAX	436	896	27	4.1	6.3	73	200	184	263	4000	9.6	261
MIN	0.00	0.00	0.00	0.00	0.07	3.4	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	867	1970	159	10	82	561	799	407	524	11930	23	1710

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2002h, BY WATER YEAR (WY)

	MEAN	5.384	5.887	1.505	1.398	1.678	1.758	6.315	10.62	6.475	13.31	3.221	10.13
MAX	24.0	33.1	3.86	6.30	8.96	9.13	17.1	52.8	28.4	173	23.5	56.8	
(WY)	1977	2002	1972	1979	1975	2002	1973	1972	1973	2002	1974	1973	
MIN	0.063	0.046	0.038	0.027	0.023	0.030	0.46	0.50	0.042	0.024	0.020	0.083	
(WY)	1969	1976	1978	1971	1976	1976	1971	1971	1980	1974	1977	1975	

SUMMARY STATISTICS

FOR 2002 WATER YEAR

WATER YEARS 1968 - 2002h

ANNUAL TOTAL	9600.92		
ANNUAL MEAN	26.30	5.791	
HIGHEST ANNUAL MEAN		24.6	2002
LOWEST ANNUAL MEAN		1.03	1971
HIGHEST DAILY MEAN	4000	Jul	1 2002
LOWEST DAILY MEAN	0.00	Oct	1 1968
ANNUAL SEVEN-DAY MINIMUM	0.00	Oct	17 1968
MAXIMUM PEAK FLOW	c20100	Jul	1 2002
MAXIMUM PEAK STAGE	a14.54	Jul	1 2002
ANNUAL RUNOFF (AC-FT)	19040		
10 PERCENT EXCEEDS	8.6		3.9
50 PERCENT EXCEEDS	0.04		0.23
90 PERCENT EXCEEDS	0.00		0.02

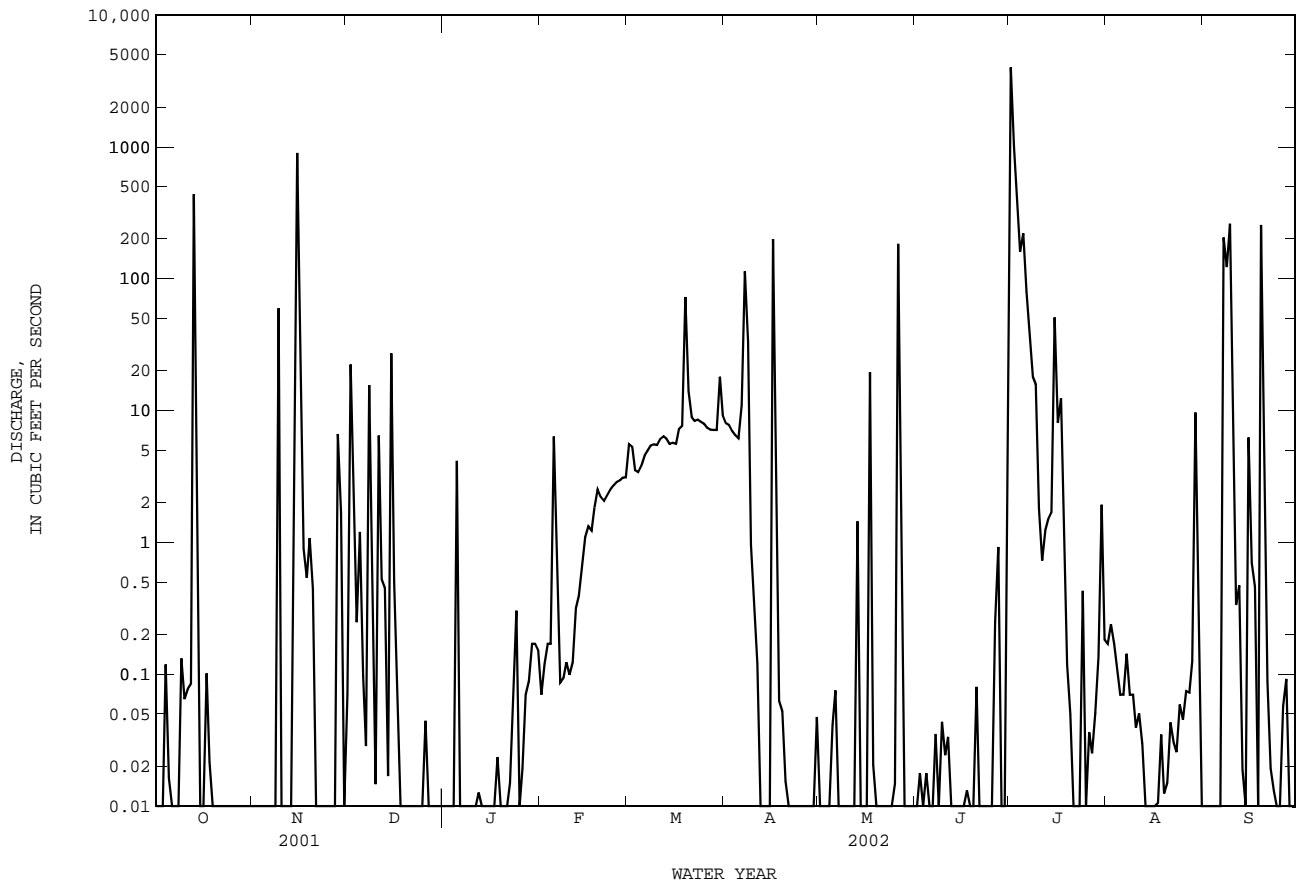
e Estimated

h See PERIOD OF RECORD paragraph.

c From rating curve extended above indirect measurement of 7,450 ft³/s.

a From floodmark.

08177700 Olmos Creek at Dresden Drive, San Antonio, TX--Continued



GUADALUPE RIVER BASIN

08178000 San Antonio River at San Antonio, TX

LOCATION.--Lat 29°24'34", long 98°29'41", Bexar County, Hydrologic Unit 12100301, on right bank 50 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.

PERIOD OF RECORD.--Dec. 1895 to June 1906 (periodic discharge measurements), Jan. 1915 to Nov. 1929, Feb. 1939 to Sept. 1997 (daily mean discharge), Oct. 1997 to Sept. 1999 (annual peak discharge), Oct. 1999 to current year (daily mean stage).

Water-quality records.--Chemical data: Dec. 1991 to Aug. 1992, Jan. 1996 to Aug. 1996. Biochemical data: Dec. 1991 to Aug. 1992, Jan. 1996 to Aug. 1996. Pesticide data: Dec. 1991 to Aug. 1992, Jan. 1996 to Aug. 1996.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 605.26 ft above NGVD of 1929. 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 datum 7.00 ft higher. Apr. 25, 1967, to May 13, 1969, water-stage recorder at site 307 ft downstream at same datum. May 14, 1969, to Apr. 26, 2000, site on left bank, 193 ft downstream from South Alamo Street bridge.

REMARKS.--Records good. Interruptions in the record were due to malfunction of the instrument. Since 1926, at least 10% of contributing drainage area has been regulated. Springs emerge intermittently from the Edwards and associated limestones along the Balcones Fault Zone upstream from station. Ground-water discharge into river is discussed by Petit and George, Texas Board of Water Engineers Bulletin 5608, vol. 1 (1956, p. 45).

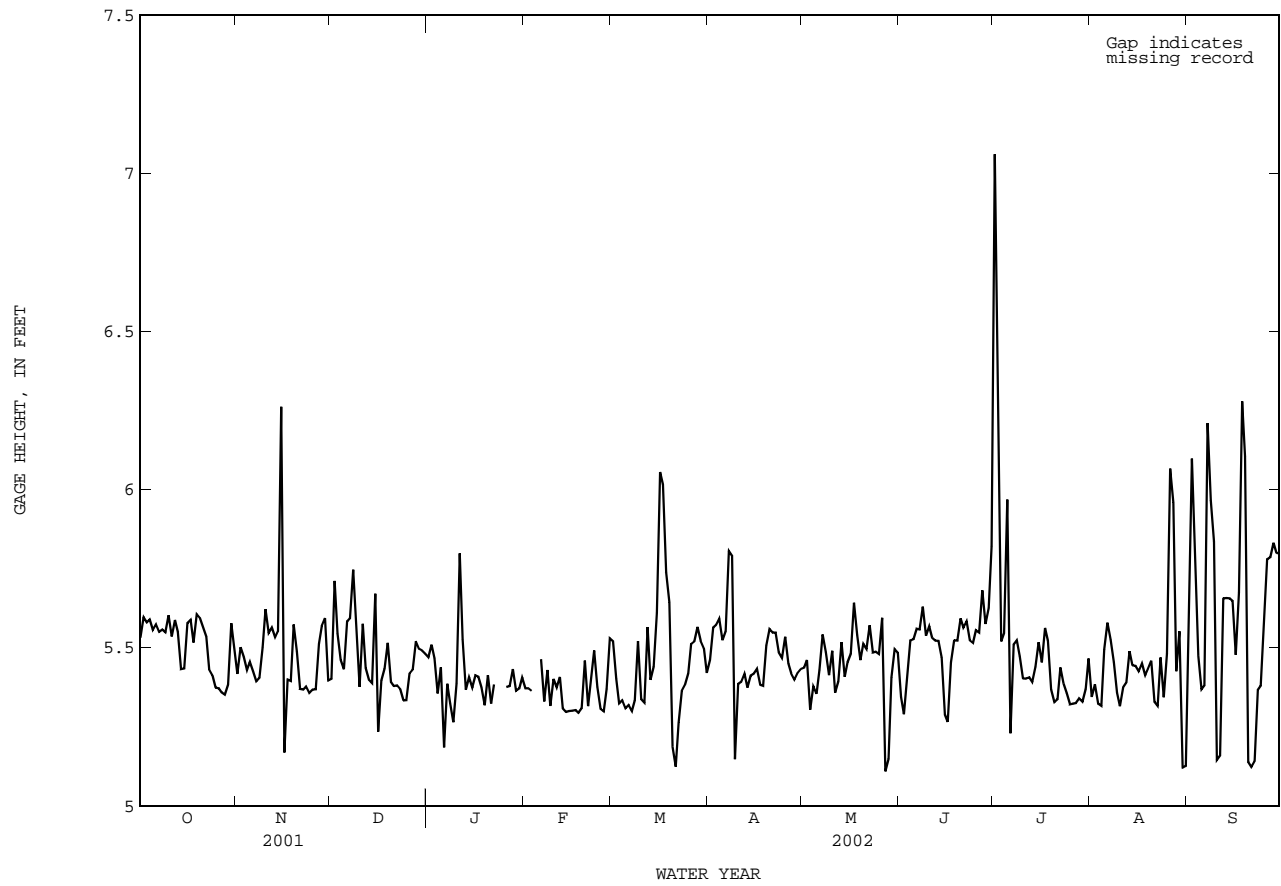
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 5, 1819, equaled or exceeded that of Sept. 10, 1921, from San Fernando Cathedral archives and old spanish records.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 12.79 ft, July 1; minimum gage height, 5.08 ft, Mar. 20.

GAGE HEIGHT FROM DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.53	5.42	5.40	5.47	5.37	5.52	5.46	5.44	5.34	7.06	5.34	5.62
2	5.60	5.50	5.71	5.51	5.37	5.40	5.56	5.46	5.29	6.08	5.38	6.10
3	5.58	5.47	5.54	5.47	5.36	5.32	5.57	5.30	5.41	5.52	5.32	5.79
4	5.59	5.43	5.46	5.36	---	5.33	5.59	5.38	5.52	5.55	5.32	5.47
5	5.56	5.45	5.43	5.44	---	5.31	5.52	5.36	5.53	5.97	5.50	5.37
6	5.57	5.43	5.58	5.18	5.46	5.32	5.55	5.43	5.56	5.23	5.58	5.38
7	5.55	5.39	5.59	5.39	5.33	5.30	5.81	5.54	5.56	5.51	5.53	6.21
8	5.56	5.41	5.75	5.32	5.43	5.33	5.79	5.49	5.63	5.52	5.46	5.97
9	5.55	5.50	5.58	5.26	5.32	5.52	5.15	5.41	5.54	5.47	5.36	5.84
10	5.60	5.62	5.38	5.39	5.40	5.34	5.39	5.49	5.57	5.40	5.32	5.14
11	5.54	5.55	5.58	5.80	5.38	5.33	5.39	5.36	5.53	5.40	5.37	5.16
12	5.59	5.56	5.44	5.53	5.41	5.56	5.42	5.39	5.52	5.41	5.39	5.66
13	5.55	5.53	5.40	5.37	5.31	5.40	5.37	5.52	5.52	5.39	5.49	5.66
14	5.43	5.55	5.39	5.41	5.30	5.44	5.41	5.41	5.47	5.44	5.45	5.66
15	5.43	6.26	5.67	5.37	5.30	5.61	5.42	5.45	5.29	5.52	5.44	5.65
16	5.58	5.17	5.23	5.41	5.30	6.05	5.43	5.48	5.27	5.45	5.43	5.48
17	5.59	5.40	5.40	5.41	5.30	6.02	5.38	5.64	5.45	5.56	5.45	5.67
18	5.52	5.39	5.43	5.37	5.29	5.74	5.38	5.54	5.52	5.52	5.41	6.28
19	5.61	5.57	5.52	5.32	5.31	5.64	5.51	5.46	5.52	5.37	5.43	6.10
20	5.59	5.49	5.39	5.41	5.46	5.19	5.56	5.51	5.59	5.33	5.46	5.14
21	5.56	5.37	5.38	5.32	5.32	5.12	5.55	5.50	5.56	5.34	5.33	5.12
22	5.54	5.37	5.38	5.38	5.40	5.26	5.55	5.57	5.58	5.44	5.32	5.14
23	5.43	5.38	5.37	---	5.49	5.36	5.49	5.49	5.52	5.39	5.47	5.37
24	5.41	5.36	5.33	---	5.38	5.38	5.47	5.49	5.52	5.36	5.34	5.38
25	5.37	5.37	5.34	---	5.31	5.42	5.53	5.48	5.56	5.32	5.48	5.57
26	5.37	5.37	5.42	5.38	5.30	5.51	5.45	5.59	5.55	5.32	6.07	5.78
27	5.36	5.51	5.43	5.38	5.37	5.52	5.42	5.11	5.68	5.33	5.96	5.79
28	5.35	5.57	5.52	5.43	5.53	5.57	5.40	5.15	5.58	5.34	5.43	5.83
29	5.38	5.59	5.50	5.36	---	5.52	5.42	5.41	5.63	5.33	5.55	5.80
30	5.58	5.40	5.49	5.37	---	5.50	5.43	5.50	5.82	5.37	5.12	5.80
31	5.50	---	5.48	5.41	---	5.42	---	5.48	---	5.47	5.13	---
MEAN	5.52	5.48	5.47	---	---	5.46	5.48	5.45	5.52	5.51	5.44	5.63
MAX	5.61	6.26	5.75	---	---	6.05	5.81	5.64	5.82	7.06	6.07	6.28
MIN	5.35	5.17	5.23	---	---	5.12	5.15	5.11	5.27	5.23	5.12	5.12

08178000 San Antonio River at San Antonio, TX--Continued



GUADALUPE RIVER BASIN

08178050 San Antonio River at Mitchell Street, 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. At low-flow, flow of river comes from intermittent spring flow and from artesian wells.

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

Water-quality records.--Chemical data: Dec. 1991 to June 1999. Biochemical data: Dec. 1991 to June 1999. Pesticide data: Dec. 1991 to June 1999.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 585.07 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in Oct. 1992, at least 10% of contributing drainage area has been regulated. Springs emerge intermittently from the Edwards and associated limestones along the Balcones Fault Zone upstream from station. Ground-water discharge into river is discussed by Petit and George, Texas Board of Water Engineers Bulletin 5608, vol. 1 (1956, p. 45).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 5, 1819, equaled or exceeded that of Sept. 10, 1921, from San Fernando Cathedral archives and old spanish records.

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	29	75	91	67	54	30	26	12	1840	122	56
2	27	29	314	92	68	50	31	23	11	1870	118	59
3	25	28	153	90	68	47	31	16	8.4	1800	112	70
4	27	28	89	87	66	45	33	16	9.9	1710	109	66
5	27	28	77	169	111	45	32	14	10	1960	101	56
6	28	26	83	85	86	44	39	9.9	9.2	1770	105	57
7	25	25	80	86	70	43	284	8.6	12	903	101	932
8	26	21	354	84	72	43	820	10	20	98	98	925
9	22	261	109	80	69	49	48	31	9.5	184	97	864
10	26	35	90	48	68	45	49	e12	11	143	98	363
11	24	31	155	94	65	35	52	e12	11	117	101	102
12	24	32	111	89	64	48	49	e11	9.1	119	94	108
13	865	31	97	81	61	41	48	e12	11	119	94	112
14	124	36	96	82	60	38	48	e13	13	135	90	114
15	38	908	514	77	60	e19	44	e11	8.3	342	88	174
16	39	1060	160	80	59	33	102	e9.0	8.4	180	84	139
17	44	838	104	80	59	33	379	e90	9.7	398	84	121
18	40	81	102	78	58	38	47	11	8.5	234	81	124
19	40	91	106	76	58	236	44	5.7	11	154	78	647
20	43	80	101	79	59	191	41	6.4	12	152	78	551
21	40	66	99	76	52	34	43	6.0	9.9	155	71	136
22	39	67	100	78	51	33	50	8.5	11	157	68	128
23	39	70	99	78	57	39	43	11	8.6	153	86	128
24	37	68	97	83	52	38	40	12	10	151	64	127
25	32	69	98	76	47	31	37	12	11	145	35	117
26	33	62	99	75	43	32	38	485	13	142	57	122
27	32	73	94	75	42	32	38	17	11	141	61	117
28	31	203	98	73	47	35	36	9.8	13	140	58	120
29	28	108	92	70	---	37	32	e8.1	30	132	210	113
30	27	74	92	69	---	48	28	e9.0	382	130	62	112
31	36	---	91	70	---	37	---	e13	---	133	61	---
TOTAL	1913	4558	4029	2551	1739	1573	2636	939.0	714.5	15807	2766	6860
MEAN	61.71	151.9	130.0	82.29	62.11	50.74	87.87	30.29	23.82	509.9	89.23	228.7
MAX	865	1060	514	169	111	236	820	485	382	1960	210	932
MIN	22	21	75	48	42	19	28	5.7	8.3	98	35	56
AC-FT	3790	9040	7990	5060	3450	3120	5230	1860	1420	31350	5490	13610

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

	MEAN	81.82	92.30	73.21	66.55	65.89	70.58	60.99	87.70	74.01	77.47	45.16	59.67
MAX	229	217	209	185	209	172	149	369	228	507	119	229	
(WY)	1999	2001	1993	1993	1993	1993	1993	1993	1993	2002	2001	2002	
MIN	4.96	10.9	13.5	6.41	19.0	12.8	14.0	8.96	12.0	9.04	5.82	12.5	
(WY)	1997	2000	1997	1997	1996	1996	1996	1998	1998	1998	1997	1999	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1993 - 2002

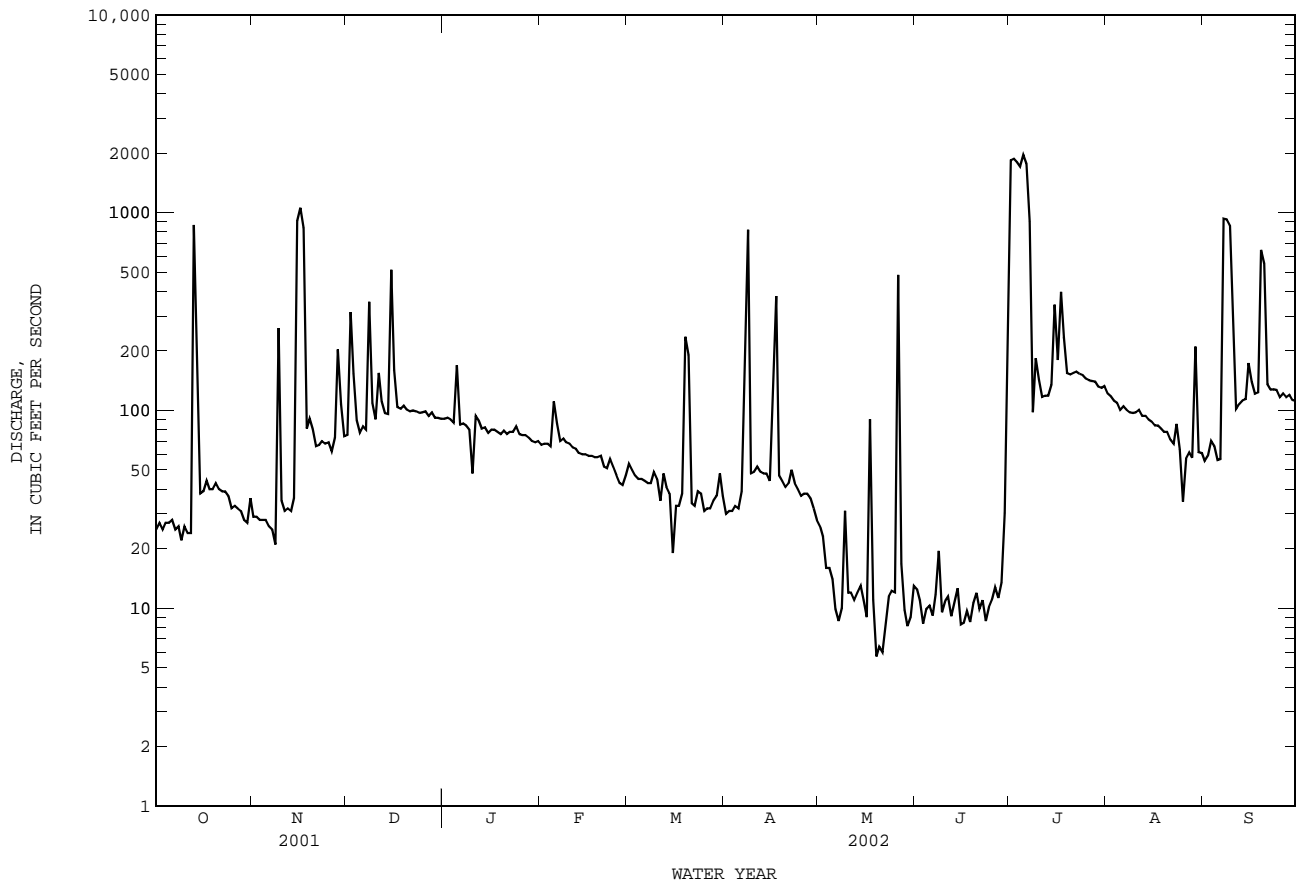
ANNUAL TOTAL	31981.4	46085.5	
ANNUAL MEAN	87.62	126.3	71.32
HIGHEST ANNUAL MEAN			172
LOWEST ANNUAL MEAN			16.4
HIGHEST DAILY MEAN	1310	Aug 30	1960 Jul 5
LOWEST DAILY MEAN	2.1	Jun 14	5.7 May 19
ANNUAL SEVEN-DAY MINIMUM	8.4	Jun 8	8.7 May 18
MAXIMUM PEAK FLOW			6430 Jul 1
MAXIMUM PEAK STAGE			a8.73 Jul 1
ANNUAL RUNOFF (AC-FT)	63440	91410	51660
10 PERCENT EXCEEDS	116	171	160
50 PERCENT EXCEEDS	66	62	28
90 PERCENT EXCEEDS	13	12	7.5

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08178050 San Antonio River at Mitchell Street, San Antonio, TX--Continued



GUADALUPE RIVER BASIN

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. At low-flow, flow of river comes from intermittent springflow and from artesian wells.

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

Water-quality records.--Chemical data: Dec. 1986 to Sept. 2000. Biochemical data: Mar. 1987 to Sept. 1998. Pesticide data: Dec. 1992 to Sept. 1998. Specific conductance: Dec. 1986 to Aug. 1988, Mar. 1993 to Sept. 2000. pH: Dec. 1986 to Aug. 1988, Mar. 1993 to Sept. 2000. Water temperature: Dec. 1986 to Aug. 1988, Mar. 1993 to Sept. 2000. Dissolved oxygen: Dec. 1986 to Aug. 1988, Mar. 1993 to Sept. 2000.

GAGE.--Water-stage recorder. Datum of gage is 488.11 ft above NGVD of 1929. Dec. 20, 1986, to Aug. 15, 1989, at site 0.2 mi downstream at Camino Coahuilteca crossing at same datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in water year 1987, at least 10% of contributing drainage area has been regulated.

DISCHARGE FROM THE DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	39	109	113	181	164	58	58	16	6340	134	78
2	40	36	e405	116	184	160	53	56	14	2110	131	80
3	42	36	e205	114	183	153	54	47	13	1980	126	84
4	41	37	114	120	181	151	53	44	14	1730	124	87
5	45	35	99	195	258	152	56	42	17	2530	116	81
6	42	33	102	118	224	154	58	36	16	1200	122	77
7	38	32	96	113	187	169	325	34	18	749	117	1210
8	39	32	504	110	185	168	1090	32	40	167	115	2030
9	37	601	150	108	183	158	131	16	26	219	115	1930
10	33	41	117	83	180	156	91	16	26	220	115	528
11	41	34	223	106	178	149	91	16	30	157	119	202
12	32	31	162	114	178	149	86	13	25	156	114	184
13	835	34	122	108	174	153	86	39	23	156	114	180
14	163	38	117	108	172	148	85	24	27	229	111	178
15	54	1450	512	99	170	128	80	15	23	593	109	308
16	53	853	213	104	169	123	86	12	19	278	107	234
17	53	570	134	106	169	143	286	236	21	446	102	194
18	55	150	121	103	169	145	109	45	e22	274	102	194
19	48	171	124	101	169	356	79	17	e21	172	102	705
20	53	162	120	102	170	366	82	15	e19	171	103	465
21	51	93	119	101	161	155	79	46	e17	166	101	159
22	49	90	120	104	157	132	85	17	e16	166	97	150
23	50	91	118	105	163	137	81	17	e14	167	101	146
24	48	90	116	112	158	138	43	5.5	e12	161	94	147
25	40	89	117	104	153	137	66	12	e11	157	78	142
26	41	86	118	98	145	131	77	664	e8.6	154	76	145
27	40	90	114	100	148	132	76	42	e8.7	153	82	141
28	40	293	117	99	149	136	71	15	13	152	87	145
29	38	198	114	99	---	98	71	13	79	146	363	142
30	35	99	113	148	---	68	60	14	679	143	104	140
31	41	---	113	189	---	78	---	18	---	144	84	---
TOTAL	2260	5634	5028	3500	4898	4787	3748	1676.5	1288.3	21586	3565	10486
MEAN	72.90	187.8	162.2	112.9	174.9	154.4	124.9	54.08	42.94	696.3	115.0	349.5
MAX	835	1450	512	195	258	366	1090	664	679	6340	363	2030
MIN	32	31	96	83	145	68	43	5.5	8.6	143	76	77
AC-FT	4480	11180	9970	6940	9720	9500	7430	3330	2560	42820	7070	20800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2002, BY WATER YEAR (WY)

	MEAN	149.7	111.0	134.1	107.2	131.6	119.3	121.6	183.5	161.6	173.9	81.58	105.1
MAX	1041	355	479	268	483	420	340	803	641	692	263	343	
(WY)	1999	2001	1992	1993	1992	1992	1992	1992	1993	1990	1992	2002	
MIN	10.5	15.2	19.6	12.2	29.3	18.2	25.8	12.5	15.6	12.0	15.1	25.6	
(WY)	1997	2000	1991	1997	1996	1996	1996	1998	1998	1998	2000	1989	

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1987 - 2002

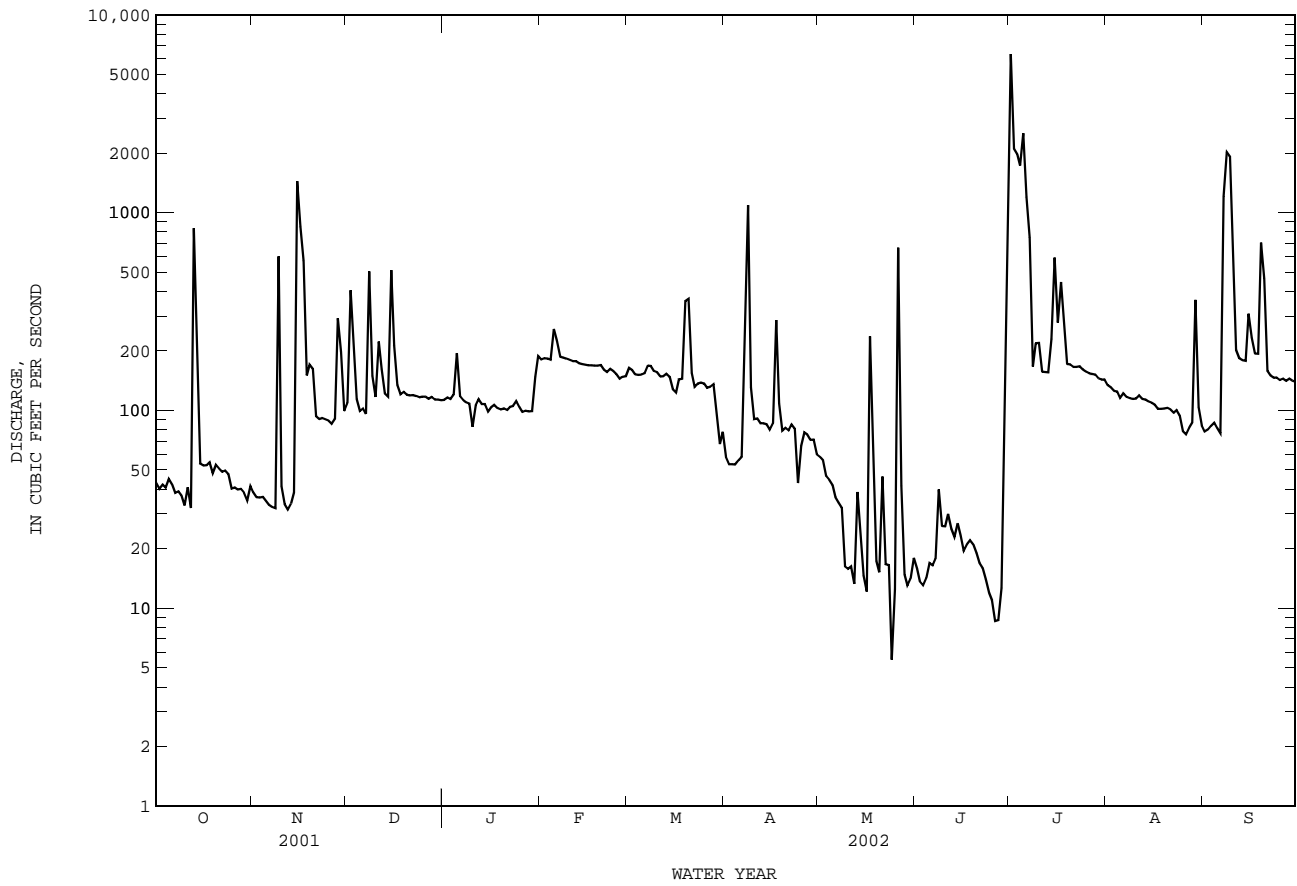
ANNUAL TOTAL	45640.7	68456.8	
ANNUAL MEAN	125.0	187.6	131.6
HIGHEST ANNUAL MEAN			337
LOWEST ANNUAL MEAN			30.6
HIGHEST DAILY MEAN	2290	Aug 30	16900
LOWEST DAILY MEAN	2.7	Aug 15	1.8
ANNUAL SEVEN-DAY MINIMUM	10	Aug 14	4.8
MAXIMUM PEAK FLOW			37200
MAXIMUM PEAK STAGE			a26.94
ANNUAL RUNOFF (AC-FT)	90530	135800	95350
10 PERCENT EXCEEDS	188	245	261
50 PERCENT EXCEEDS	82	110	43
90 PERCENT EXCEEDS	21	23	14

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08178565 San Antonio River at Loop 410 at San Antonio, TX--Continued



GUADALUPE RIVER BASIN

08178585 Salado Creek at Wilderness Road at San Antonio, TX

LOCATION.--Lat 29°37'50", long 98°33'55", Bexar County, Hydrologic Unit 12100301, on right bank, upstream side of Wilderness Road, within Camp Bullis Military Reservation, 3.1 mi upstream of State Highway 1604.

DRAINAGE AREA.--23.0 mi².

PERIOD OF RECORD.--Oct. 1997 to current year.

Water-quality records.--Chemical data: Feb. 1998 to Sept. 1999. Biochemical data: Feb. 1998 to Sept. 1999. Pesticide data: Feb. 1998 to Sept. 1999.

GAGE.--Water-stage recorder. Elevation of gage is 1,030 ft above NGVD of 1929, from topographic map. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of the gage in Oct. 1997, at least 10% of contributing drainage area has been regulated. No flow at times.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.28	0.15	e0.19	0.76	0.70	0.32	0.00	0.00	0.00	328	2.0	0.00
2	0.28	0.14	e0.15	0.75	0.71	0.28	0.00	0.00	0.00	587	0.97	0.00
3	0.25	0.13	e3.8	0.73	0.72	0.23	0.00	0.00	0.00	520	0.48	0.00
4	0.21	0.12	e0.75	0.76	0.68	0.21	0.00	0.00	0.00	422	0.29	0.00
5	0.20	0.12	e0.36	0.91	0.70	0.19	0.00	0.00	0.00	446	0.24	0.00
6	0.20	0.10	e0.23	0.80	0.67	0.17	0.00	0.00	0.00	353	0.22	0.00
7	0.18	0.11	e0.18	0.77	0.66	0.12	0.02	0.00	0.00	323	0.19	0.00
8	0.18	0.11	e0.15	0.79	0.66	0.08	1.0	0.00	0.00	312	0.20	0.06
9	0.18	0.11	e3.6	0.75	0.65	0.02	0.17	0.00	0.00	304	0.20	e0.12
10	0.17	0.11	e1.1	0.64	0.65	0.00	0.12	0.00	0.00	293	0.20	e0.40
11	0.15	0.10	e2.8	0.71	0.64	0.00	0.10	0.00	0.00	280	0.20	e0.60
12	0.15	0.10	e2.6	0.66	0.66	0.00	0.09	0.00	0.00	268	0.18	e0.30
13	7.9	0.10	e1.9	0.64	0.65	0.00	0.07	0.00	0.00	259	0.18	e0.15
14	0.35	0.11	e1.7	0.61	0.65	0.00	0.05	0.00	0.00	250	0.17	e0.14
15	0.26	28	1.5	0.62	0.64	0.00	0.04	0.00	0.00	243	0.17	e0.16
16	0.24	2.3	1.3	0.65	0.58	0.00	0.07	0.00	0.00	232	0.16	e0.14
17	0.25	1.3	1.2	0.66	0.47	0.00	0.15	0.00	0.00	224	0.14	e0.20
18	0.24	1.4	1.1	0.63	0.46	0.00	0.05	0.00	0.00	211	0.12	e0.17
19	0.25	1.4	0.99	0.61	0.50	0.00	0.0	0.00	0.00	199	0.10	e0.6
20	0.23	e1.0	0.89	0.63	0.46	0.00	0.00	0.00	0.00	179	0.07	e1.4
21	0.22	e0.45	0.85	0.65	0.44	0.00	0.00	0.00	0.00	107	0.04	e0.48
22	0.20	e0.26	0.80	0.69	0.42	0.00	0.00	0.00	0.00	62	0.01	e0.25
23	0.19	e0.17	0.72	0.60	0.40	0.00	0.00	0.00	0.00	41	0.00	e0.16
24	0.18	e0.14	0.69	0.64	0.38	0.00	0.00	0.00	0.00	30	0.00	e0.13
25	0.16	e0.12	0.66	0.67	0.36	0.00	0.00	0.00	0.00	27	0.00	e0.13
26	0.16	e0.11	0.62	0.73	0.30	0.00	0.00	3.4	0.00	24	0.00	e0.12
27	0.15	e0.11	0.62	0.70	0.29	0.00	0.00	0.04	0.00	21	0.00	e0.11
28	0.15	e0.13	0.59	0.74	0.30	0.00	0.00	0.00	0.00	18	0.00	e0.11
29	0.16	e2.0	0.59	0.74	---	0.00	0.00	0.00	0.00	14	0.00	e0.11
30	0.15	e0.30	0.61	0.70	---	0.00	0.00	0.00	16	9.7	0.00	e0.10
31	0.15	---	0.67	0.75	---	0.00	---	0.00	---	4.4	0.00	---
TOTAL	14.02	40.80	33.91	21.69	15.40	1.62	1.93	3.44	16.00	6591.1	6.53	11.54
MEAN	0.452	1.360	1.094	0.700	0.550	0.052	0.064	0.111	0.533	212.6	0.211	0.385
MAX	7.9	28	3.8	0.91	0.72	0.32	1.0	3.4	16	587	2.0	6.0
MIN	0.15	0.10	0.15	0.60	0.29	0.00	0.00	0.00	0.00	4.4	0.00	0.00
AC-FT	28	81	67	43	31	3.2	3.8	6.8	32	13070	13	23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2002, BY WATER YEAR (WY)

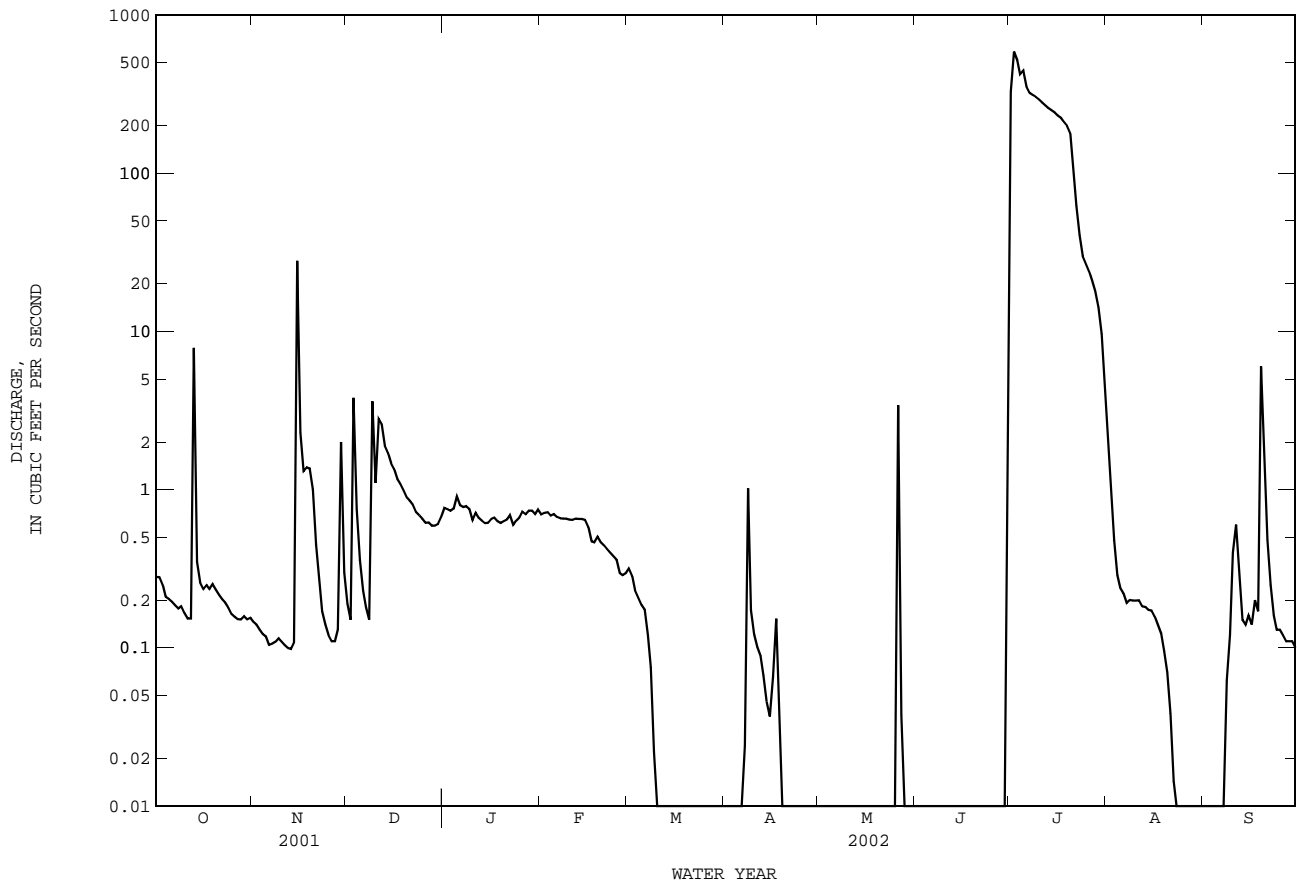
	1998	1999	2000	2001	2002
MEAN	29.12	4.057	0.312	0.352	0.275
MAX	116	11.0	1.09	0.76	0.55
(WY)	1999	1999	2002	2001	1998
MIN	0.000	0.000	0.000	0.000	0.000
(WY)	2000	2000	1998	1999	1999

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1998 - 2002

ANNUAL TOTAL	1304.83	6757.98	8.237	2002
ANNUAL MEAN	3.575	18.52	18.5	2000
HIGHEST ANNUAL MEAN			0.005	
LOWEST ANNUAL MEAN				
HIGHEST DAILY MEAN	214	Sep 1	587	Jul 2
LOWEST DAILY MEAN	0.00	Jun 18	0.00	Mar 10
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 8	0.00	Mar 10
MAXIMUM PEAK FLOW			3440	Jul 1
MAXIMUM PEAK STAGE			12.81	Jul 1
ANNUAL RUNOFF (AC-FT)	2590		13400	
10 PERCENT EXCEEDS	2.1		3.7	
50 PERCENT EXCEEDS	0.38		0.17	
90 PERCENT EXCEEDS	0.00		0.00	

e Estimated

08178585 Salado Creek at Wilderness Road at San Antonio, TX--Continued



08178627 Elm Waterhole Creek Tributary at San Antonio, TX

LOCATION.--Lat 29°38'48", long 98°24'23", Bexar County, Hydrologic Unit 12100301, on right bank upstream side of Evans Road, 0.4 mi upstream of Elm Waterhole Creek, 5.21 mi upstream of State Highway 1604.

PERIOD OF RECORD.--

CHEMICAL DATA: Apr. 2001 to current year.

BIOCHEMICAL DATA: Apr. 2001 to current year.

PESTICIDE DATA: Apr. 2001 to current year.

INSTRUMENTATION.--Water-stage recorder. Discharge-activated automatic sampler. Tipping bucket raingage at site. Satellite telemeter at station.

REMARKS.--Water-quality samples and associated discharge and precipitation data were collected for selected storm events.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	SPE- CIFIC CON- DUCT- ANCE	PH WATER WHOLE FIELD (STAND- ARD	STORM WATER FLOW	ELAPSED TIME OF STORM	PRECIP- ITATION DURA- TION OF STORM	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL)	E COLI, MTEC MF WATER	FECAL STREP, KF STRP MF, WATER	PRECIP- ITATION TOTAL	HARD- NESS TOTAL	CALCIUM DIS- SOLVED	MAGNE- SIUM, DIS- SOLVED	
		(US/CM) (00095)	(UNITS) (00400)	(MGD) (81395)	(HOURS) (00135)	(MIN) (00117)	(MG/L) (00340)	(COL/ 100 ML) (31633)	(COL/ 100 ML) (31673)	INCHES/ STORM	AS CACO3	(MG/L AS CA)	(MG/L AS MG)	
NOV 15...	1630	--	--	--	--	--	--	E3800k	5200	--	--	--	--	
NOV 15-15	1700	139	7.2	--	1.0	--	110	--	--	--	--	--	--	
APR 07...	2125	--	--	--	--	--	--	<80000k	E34000k	--	--	--	--	
APR 07-07	2125	139	7.2	--	.50	--	70	--	--	--	--	--	--	
JUL 01...	1300	--	--	--	--	--	--	4600	7700	--	--	--	--	
JUL 01-01	1330	105	8.0	3.5	3.0	750	30	--	--	2.1	76	28.6	1.23	
JUL 01-02	2000	124	7.9	40.6	7.0	210	50	--	--	3.0	63	23.5	1.04	
Date		SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	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	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE	NITRO- GEN, NITRATE DIS- SOLVED	NITRO- GEN, NITRITE DIS- SOLVED	NITRO- GEN, NO2+NO3 DIS- SOLVED	
		(00930)	(00931)	(00932)	(00935)	(00945)	(00940)	(00950)	(00955)	(70300)	(00530)	(00618)	(00613)	(00631)
NOV 15...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV 15-15	--	--	--	--	--	--	--	--	--	--	.32	.010	.331	
APR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 07-07	--	--	--	--	--	--	--	--	--	--	.39	.012	.403	
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-01	2.54	.1	6	3.43	6.5	4.21	<.1	9.38	117	72	.41	.012	.42	
JUL 01-02	1.52	.1	5	3.63	3.2	2.20	E.1	9.75	100	298	.42	.012	.43	
Date		NITRO- GEN, AMMONIA DIS- SOLVED	NITRO- GEN, TOTAL	NITRO- GEN,AM- MONIA + ORGANIC DIS.	NITRO- GEN,AM- MONIA + ORGANIC TOTAL	PHOS- PHORUS TOTAL	PHOS- PHORUS DIS- SOLVED	ORTHO- PHOS- PHATE, DIS- SOLVED	PHOS- PHATE, ORTHO, DIS- SOLVED	CARBON, ORGANIC TOTAL	CYANIDE TOTAL	PHENOLS TOTAL	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC	ALUM- INUM, DIS- SOLVED
		(MG/L AS N) (00608)	(MG/L AS N) (00600)	(MG/L AS N) (00623)	(MG/L AS N) (00625)	(MG/L AS P) (00665)	(MG/L AS P) (00666)	(MG/L AS P) (00671)	(MG/L AS P) (00660)	(MG/L AS C) (00680)	(MG/L AS CN) (00720)	(UG/L) (32730)	(MG/L) (00556)	(UG/L AS AL) (01106)
NOV 15...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV 15-15	.052	--	--	--	--	--	--	.026	.080	50.8	<.01	<16	<7	7
APR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 07-07	.112	--	--	--	--	--	--	.031	.095	30.3	<.01	E4	<7	8
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-01	<.04	1.2	.42	.75	.100	.022	E.01	--	--	--	--	--	<7	5
JUL 01-02	<.04	2.0	.59	1.5	.25	.024	E.01	--	--	--	--	--	<7	6

08178627 Elm Waterhole Creek Tributary at San Antonio, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA- NESE, DIS-SOLVED (UG/L AS MN) (01056)
NOV 15...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV 15-15	.06	5	<.06	--	<.04	--	.21	--	.9	--	19	<.08	1.3
APR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 07-07	.13	5	<.06	--	<.04	3.0	.24	--	1.4	--	11	<.08	2.9
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-01	.10	12	<.06	<.1	<.04	E.5	.20	<10	1.4	<10	3	<.08	1.8
JUL 01-02	.14	11	<.06	E.1	<.04	--	.19	M	1.4	E8	5	.40	3.8
Date	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER, FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC (UG/L) (46342)	ALDRIN, TOTAL (UG/L) (39330)	ALPHA BHC DIS-SOLVED (UG/L) (34253)
NOV 15...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV 15-15	--	.2	--	.58	<1	--	1	.04	--	--	--	<.001	--
APR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 07-07	--	.3	--	.46	<1	--	2	.09	--	--	--	<.001	--
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-01	E.01	.7	2.1	.57	<1	<20	2	.14	<.006	<.021	<.004	--	<.005
JUL 01-02	.03	1.1	4.4	.88	<1	--	--	.07	<.006	<.021	<.004	--	<.005
Date	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L) (39350)	CHLOR- PYRIFOS DIS-SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS-SOLVED (UG/L) (39572)
NOV 15...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV 15-15	--	--	--	--	--	--	<.1	--	--	--	--	--	--
APR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 07-07	--	--	--	--	--	--	<.1	--	--	--	--	--	--
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-01	.011	<.050	<.010	<.002	<.041	<.020	--	<.005	<.006	<.018	<.003	E.012	<.010
JUL 01-02	.009	<.050	<.010	<.002	<.041	<.020	--	<.005	<.006	<.018	<.003	<.006	<.005

08178627 Elm Waterhole Creek Tributary at San Antonio, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	DI-ELDRIN	DI-ELDRIN	DISUL-FOTON	ENDRIN	EPTC	ETHAL-FLUR-ALIN	ETHO-PROP	FONOFOS	HEPTA-CHLOR,	HEPTA-CHLOR	LINDANE	LINDANE	LIN-URON
	DIS-	DIS-	WATER	WATER	WATER	WAT FLT	FLTRD	WATER	HEPTA-	EPOXIDE	TOTAL	DIS-	WATER
	TOTAL	SOLVED	FLTRD	UNFLTRD	FLTRD	0.7 U	0.7 U	DISS	TOTAL	TOTAL	TOTAL	SOLVED	FLTRD
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
	(39380)	(39381)	(82677)	(39390)	(82668)	(82663)	(82672)	(04095)	(39410)	(39420)	(39340)	(39341)	(82666)
NOV 15...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV 15-15	<.001	--	--	<.002	--	--	--	--	<.002	<.001	<.0007	--	--
APR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 07-07	<.001	--	--	<.002	--	--	--	--	<.002	<.001	<.0007	--	--
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-01	--	<.005	<.02	--	<.002	<.009	<.005	<.003	--	--	--	<.004	<.035
JUL 01-02	--	<.005	<.02	--	<.002	<.009	<.005	<.003	--	--	--	<.004	<.035
Date	MALA-THION,	METO-LACHLOR	METRI-BUZIN	MOL-INATE	NAPROP-AMIDE	P,P'	PARA-THION,	METHYL	PEB-ULATE	PENDI-METH-	PHORATE	PRO-METON,	PROPA-CHLOR,
	DIS-	WATER	WATER	WATER	WATER	DDE	DIS-	PARA-	WATER	ALIN	WATER	WATER,	WATER,
	SOLVED	DISSOLV	DISSOLV	GF, REC	FLTRD	GF, REC	SOLVED	THION,	WAT FLT	WAT FLT	FLTRD	REC	CHLOR,
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	0.7 U	0.7 U	(UG/L)	0.7 U	GF, REC	GF, REC	GF, REC	(UG/L)	WATER,
	(39532)	(39415)	(82630)	(82671)	FLTRD	FLTRD	(UG/L)	0.7 U	(UG/L)	(UG/L)	(UG/L)	(UG/L)	WATER,
	(39532)	(39415)	(82630)	(82671)	(82684)	(82684)	(34653)	(39542)	(82667)	(82669)	(82683)	(82664)	WATER,
NOV 15...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV 15-15	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 07-07	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-01	<.027	.016	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01	<.010
JUL 01-02	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01	<.010
Date	PRO-PANIL	PRO-PARGITE	PRON-AMIDE	SI-MAZINE,	TEBU-THIURON	TER-BACIL	TER-BUFOS	THIO-BENCARB	TOX-APHENE,	TRIAL-LATE	TRI-FLUR-ALIN		
	WATER	WATER	WATER	WATER,	WATER	WATER	WATER	WATER		WATER	WAT FLT		
	FLTRD	FLTRD	FLTRD	DISS,	FLTRD	FLTRD	FLTRD	FLTRD		FLTRD	FLTRD		
	0.7 U	0.7 U	0.7 U	REC	0.7 U	0.7 U	0.7 U	0.7 U		0.7 U	0.7 U		
	GF, REC	GF, REC	GF, REC	REC	GF, REC	GF, REC	GF, REC	GF, REC		GF, REC	GF, REC		
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)		(UG/L)	(UG/L)		
	(82679)	(82685)	(82676)	(04035)	(82670)	(82665)	(82675)	(82681)	(39400)	(82678)	(82661)		
NOV 15...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV 15-15	--	--	--	--	--	--	--	--	<1	--	--	--	--
APR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR 07-07	--	--	--	--	--	--	--	--	<1	--	--	--	--
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-01	<.011	<.02	<.004	.010	<.02	<.034	<.02	<.005	--	<.002	<.009	--	--
JUL 01-02	<.011	<.02	<.004	.009	<.02	<.034	<.02	<.005	--	<.002	<.009	--	--

Remark codes used in this report:

< -- Less than

E -- Estimated value

M -- Presence verified, not quantified

Value qualifier codes used in this report:

k -- Counts outside acceptable range

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GUADALUPE RIVER BASIN

08178700 Salado Creek at Loop 410 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.

PERIOD OF RECORD.--Sept. 1960 to current year. Prior to Oct. 2000, published as "(Upper Station) at San Antonio".

Water-quality records.--Chemical data: Nov. 1968 to May 1999. Biochemical data: Nov. 1968 to May 1999. Pesticide data: Nov. 1971 to Sept. 1973.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 684.60 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Flow is affected at times by discharge from the flood-detention pools of eleven floodwater-retarding structures. These structures control runoff from 74.6 mi² above this station. Some diversions for irrigation upstream from gage. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1853, 23 to 24 ft in Oct. 1913. Flood in Sept. 1921 reached a stage of 18 ft, and flood of Sept. 27, 1946, reached a stage of 18.2 ft.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.23	0.14	0.28	0.18	0.21	0.17	0.13	0.09	0.01	5800	0.16	0.12
2	0.24	0.17	15	0.18	0.18	0.16	0.17	0.08	0.0	6570	0.15	0.12
3	0.23	0.14	20	0.18	0.18	0.13	0.21	0.06	0.0	2680	0.14	0.12
4	0.35	0.13	3.0	0.24	0.23	0.14	0.21	0.06	0.0	1380	0.14	0.13
5	0.33	0.13	0.67	0.36	0.50	0.19	0.16	0.07	0.0	2190	0.14	0.13
6	0.20	0.13	0.34	0.28	0.37	0.21	0.25	0.05	0.0	492	0.14	0.13
7	0.24	0.13	0.24	0.43	0.22	0.15	9.0	0.05	0.0	228	0.14	70
8	0.18	0.13	17	0.18	0.21	0.16	85	0.06	0.0	181	0.13	119
9	0.23	10	6.9	0.21	0.21	0.13	4.6	0.07	0.0	178	0.13	96
10	0.17	0.74	1.4	0.18	0.16	0.10	0.56	0.06	0.0	152	0.13	31
11	0.18	0.18	3.5	0.16	0.17	0.13	0.21	0.02	0.0	134	0.13	2.2
12	0.19	0.14	3.1	0.16	0.24	0.14	0.15	0.0	0.0	118	0.14	0.47
13	245	0.13	0.87	0.16	0.19	0.15	0.14	0.25	0.0	120	0.14	0.29
14	19	0.14	0.58	0.17	0.17	0.16	0.14	0.06	0.0	111	0.15	0.22
15	2.0	1440	49	0.16	0.18	0.14	0.14	0.05	0.0	110	0.15	0.26
16	0.54	715	28	0.17	0.15	0.14	188	0.05	0.0	110	0.14	0.26
17	0.36	57	2.8	0.29	0.17	0.13	183	0.31	0.0	143	0.13	0.35
18	0.23	8.9	1.1	0.27	0.18	0.09	4.0	0.07	0.0	117	0.12	0.28
19	0.20	2.0	0.64	0.24	0.18	1.3	0.68	0.04	0.0	78	0.11	359
20	0.19	1.4	0.45	0.21	0.14	6.7	0.26	0.04	0.0	69	0.10	43
21	0.17	0.66	0.40	0.32	0.15	0.35	0.16	0.04	0.0	51	0.11	3.5
22	0.17	0.39	0.33	0.32	0.12	0.12	0.12	0.02	0.0	17	0.13	0.81
23	0.17	0.29	0.32	0.38	0.13	0.11	0.10	0.0	0.0	2.6	0.14	0.40
24	0.16	0.21	0.32	0.22	0.15	0.13	0.10	0.0	0.0	1.0	0.14	0.29
25	0.15	0.18	0.26	0.18	0.16	0.16	0.11	0.01	0.0	0.67	0.13	0.28
26	0.15	0.18	0.46	0.32	0.15	0.12	0.11	8.8	0.0	0.42	0.12	0.22
27	0.14	0.17	0.33	0.21	0.14	0.12	0.11	4.9	0.0	0.36	0.13	0.19
28	0.15	2.1	0.26	0.23	0.15	0.14	0.10	0.26	0.0	0.32	0.14	0.15
29	0.15	5.4	0.16	0.22	---	0.19	0.11	0.13	0.0	0.30	9.6	0.14
30	0.15	0.56	0.17	0.28	---	0.13	0.09	0.07	1.2	0.26	1.3	0.14
31	0.16	---	0.18	0.29	---	0.10	---	0.04	---	0.18	0.13	---
TOTAL	272.01	2246.87	158.06	7.38	5.39	12.29	478.12	15.81	1.21	21035.11	14.78	729.20
MEAN	8.775	74.90	5.099	0.238	0.193	0.396	15.94	0.510	0.040	678.6	0.477	24.31
MAX	245	1440	49	0.43	0.50	6.7	188	8.8	1.2	6570	9.6	359
MIN	0.14	0.13	0.16	0.16	0.12	0.09	0.09	0.00	0.00	0.18	0.10	0.12
AC-FT	540	4460	314	15	11	24	948	31	2.4	41720	29	1450

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	24.91	8.716	7.878	7.250	5.048	5.087	9.033	34.78	20.55	23.91	3.794	12.16
MAX	771	77.0	155	173	71.0	93.7	116	576	151	679	49.5	187
(WY)	1999	2001	1992	1968	1992	1992	1991	1993	1987	2002	2001	1973
MIN	0.001	0.006	0.000	0.000	0.013	0.000	0.000	0.000	0.006	0.000	0.000	0.000
(WY)	1992	2000	1962	1996	1996	1962	1984	1961	1984	1984	1986	1960

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

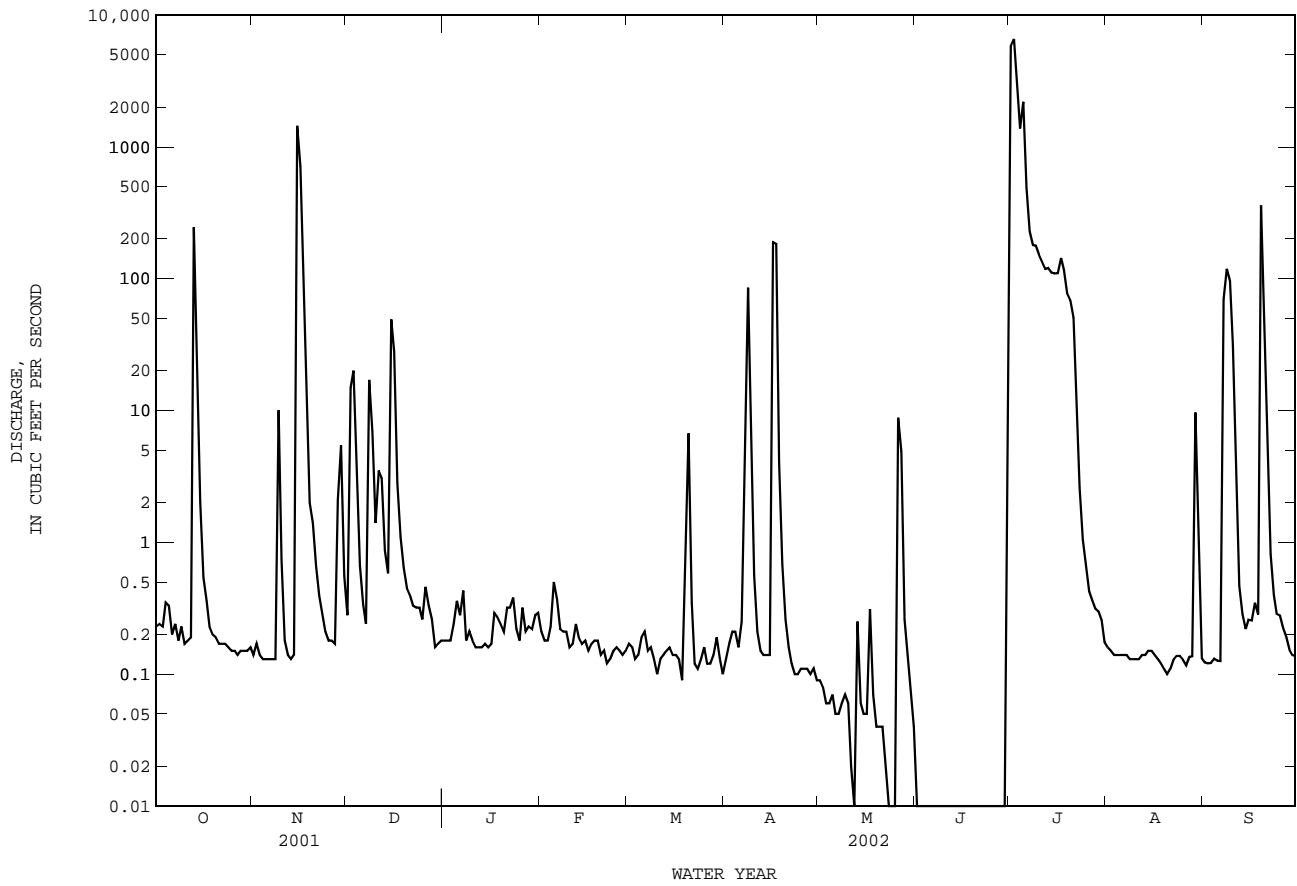
WATER YEARS 1960 - 2002

ANNUAL TOTAL	6543.50	24976.23	
ANNUAL MEAN	17.93	68.43	13.69
HIGHEST ANNUAL MEAN			68.4
LOWEST ANNUAL MEAN			0.27
HIGHEST DAILY MEAN	1440	Nov 15	6570 Jul 2
LOWEST DAILY MEAN	0.00	Jun 3	0.00 May 12
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 3	0.00 Jun 2
MAXIMUM PEAK FLOW			43800 Jul 1
MAXIMUM PEAK STAGE			19.19 Jul 1
ANNUAL RUNOFF (AC-FT)	12980	49540	9920
10 PERCENT EXCEEDS	6.1	23	7.9
50 PERCENT EXCEEDS	0.17	0.18	0.61
90 PERCENT EXCEEDS	0.00	0.04	0.00

i From indirect measurement of peak flow.

a From floodmark.

08178700 Salado Creek at Loop 410 at San Antonio, TX--Continued



GUADALUPE RIVER BASIN

08178800 Salado Creek at Loop 13 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.--Sept. 1960 to current year. Prior to Oct. 2000, published as "(Lower Station) at San Antonio".

GAGE.--Water-stage recorder. Datum of gage is 526.95 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow is affected at times by discharge from the flood-detention pools of eleven floodwater-retarding structures. These structures control runoff from 74.6 mi² above this station. Several small diversions above station. Most of low flow comes from artesian wells and springs within the city of San Antonio.

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.

DISCHARGE From DCP (PT), CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	7.7	27	15	12	9.9	8.5	8.5	5.8	e3030	17	16
2	7.9	8.8	139	14	12	11	9.2	7.5	5.5	e5840	16	13
3	8.9	9.8	160	14	12	9.9	7.8	8.7	5.2	2470	15	11
4	8.6	9.4	56	14	12	9.6	7.3	8.1	3.6	1760	16	11
5	9.2	8.8	29	21	17	9.8	8.7	7.6	5.2	2330	15	12
6	9.9	7.8	22	21	38	10	8.5	8.2	5.0	840	14	9.0
7	7.4	8.9	19	19	23	10	29	7.7	4.6	374	14	604
8	7.9	8.9	162	19	18	9.5	761	7.0	9.4	295	14	827
9	8.9	207	89	17	15	9.8	100	7.0	6.6	273	14	789
10	9.0	59	28	16	13	8.4	29	7.6	3.4	304	14	359
11	9.6	21	24	15	12	9.4	17	7.6	3.1	226	19	72
12	10	15	59	14	12	9.2	14	7.3	4.6	206	16	40
13	499	13	28	14	12	9.1	12	7.0	4.0	189	16	30
14	124	16	21	14	12	9.7	11	17	3.0	249	12	25
15	40	182	60	15	12	9.1	12	11	2.0	336	11	37
16	18	2200	201	15	11	8.8	12	8.2	3.4	194	13	46
17	14	267	49	14	11	9.6	403	37	3.1	222	13	37
18	13	98	30	14	12	9.6	78	29	2.1	352	11	27
19	12	59	25	14	11	30	27	11	2.8	156	10	138
20	11	62	23	14	11	194	18	7.8	2.0	124	11	841
21	10	45	20	14	10	37	15	6.8	2.9	106	10	88
22	11	37	19	14	11	15	12	5.4	2.3	79	8.5	50
23	11	33	18	14	11	12	12	5.4	4.2	48	9.8	37
24	10	29	17	14	13	12	11	5.9	3.5	32	10	32
25	10	26	16	14	11	11	10	5.9	2.3	26	8.6	29
26	9.2	25	16	15	8.9	10	11	148	3.7	23	8.9	27
27	9.2	23	16	15	9.5	9.6	11	77	4.4	20	9.3	25
28	8.9	37	16	14	11	9.2	9.7	20	3.5	19	8.3	23
29	8.2	75	16	14	---	9.4	9.4	9.3	9.5	19	210	20
30	9.5	47	16	13	---	9.5	9.5	7.5	47	19	169	20
31	9.3	---	17	13	---	8.7	---	6.6	---	18	29	---
TOTAL	942.9	3646.1	1438	467	373.4	539.8	1683.6	518.6	167.7	20179	762.4	4295.0
MEAN	30.42	121.5	46.39	15.06	13.34	17.41	56.12	16.73	5.590	650.9	24.59	143.2
MAX	499	2200	201	21	38	194	761	148	47	5840	210	841
MIN	7.4	7.7	16	13	8.9	8.4	7.3	5.4	2.0	18	8.3	9.0
AC-FT	1870	7230	2850	926	741	1070	3340	1030	333	40030	1510	8520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

	MEAN	64.29	41.73	40.07	39.83	39.29	33.89	41.22	75.35	66.24	47.18	27.50	44.79
MAX	1161	147	376	379	285	206	188	358	349	651	176	400	
(WY)	1999	2001	1992	1968	1992	1992	1977	1972	1987	2002	1974	1973	
MIN	2.86	3.76	6.11	3.88	5.27	7.70	7.80	3.88	1.64	0.55	0.56	2.32	
(WY)	1997	2000	2000	1997	1996	1996	1984	1998	1967	1998	2000	1999	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1960 - 2002

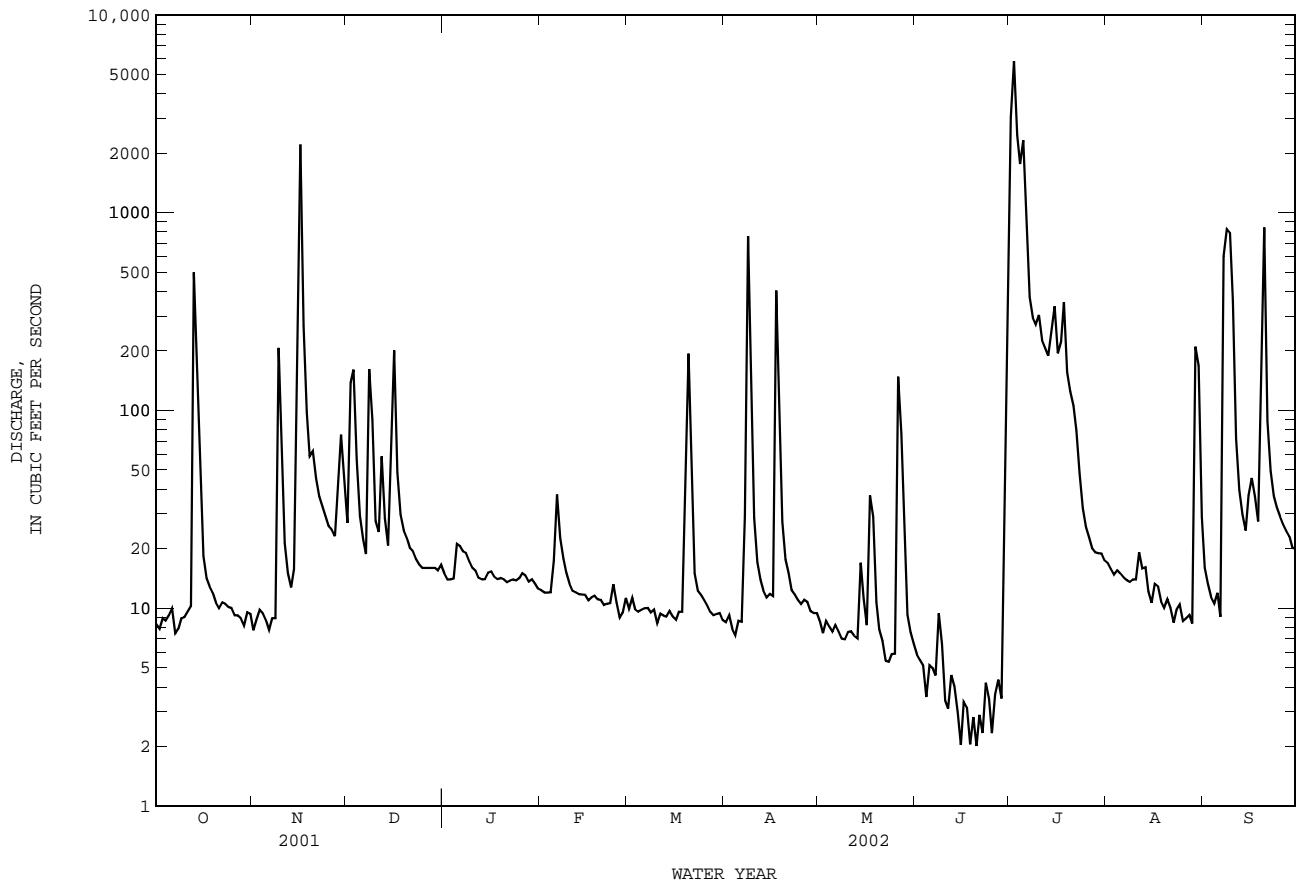
ANNUAL TOTAL	18434.16	35013.5		
ANNUAL MEAN	50.50	95.93	46.88	
HIGHEST ANNUAL MEAN			149	1992
LOWEST ANNUAL MEAN			9.96	1996
HIGHEST DAILY MEAN	2200	Nov 16	5840	Jul 2
LOWEST DAILY MEAN	0.82	Aug 22	2.0	Jun 15
ANNUAL SEVEN-DAY MINIMUM	1.1	Aug 18	2.6	Jun 15
MAXIMUM PEAK FLOW			16300	Jul 2
MAXIMUM PEAK STAGE			28.83	Jul 2
ANNUAL RUNOFF (AC-FT)	36560	69450	33960	
10 PERCENT EXCEEDS	83	158	58	
50 PERCENT EXCEEDS	11	14	19	
90 PERCENT EXCEEDS	3.4	7.2	5.5	

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08178800 Salado Creek at Loop 13 at San Antonio, TX--Continued



08178800 Salado Creek at Loop 13 at San Antonio, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Nov. 1968 to current year.
 BIOCHEMICAL DATA: Nov. 1968 to Sept. 1998, Nov. 2000 to current year.
 BIOLOGICAL DATA: May 1989 to Sept. 1995.
 PESTICIDE DATA: Nov. 1968 to Sept. 1998, Nov. 2000 to current year.
 SEDIMENT DATA: Oct. 1968 to Sept. 1973, Apr. 1996 to Sept. 1997, Nov. 2000 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Jan. 1987 to July 2000.
 pH: Jan. 1987 to July 2000.
 WATER TEMPERATURE: Jan. 1987 to July 2000.
 DISSOLVED OXYGEN: Jan. 1987 to July 2000.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,290 microsiemens/cm, Aug. 23, 1994; minimum, 39 microsiemens/cm, Nov. 9, 1990.
 pH: Maximum, 9.0 units, Apr. 26, 27, 1997; minimum, 7.0 units, Aug. 24, 1999.
 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.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L) AS SO4 (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) AS CL (00940)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L) AS N (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L) AS N (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L) AS N (00631)
OCT 30...	1340	10	795	7.4	19.0	6.5	71	--i	59.9	54.6	--	<.008	.48
NOV 27...	1010	24	821	7.8	17.0	6.3	67	280	70.6	56.6	--	E.005	.67
DEC 20...	1240	22	550	7.5	13.0	9.2	88	180	49.0	34.9	--	E.004	.50
JAN 17...	1200	14	920	7.7	15.0	9.4	96	280	69.9	61.5	--	E.006	.89
FEB 12...	1220	12	840	8.0	11.5	12.6	118	260	67.8	64.2	--	<.008	.67
APR 23...	1000	12	630	7.9	23.0	4.5	54	200	54.0	44.0	.64	.022	.66
MAY 30...	1100	8.3	448	7.5	23.5	4.4	54	150	31.7	28.3	.61	.008	.62
JUN 26...	1100	4.1	856	7.8	--e	--e	--	270	63.4	72.2	--	<.008	.08
JUL 31...	1230	18	779	7.9	31.0	5.3	73	280	58.1	51.4	--	E.007	.59
AUG 27...	1200	10	838	7.9	28.0	4.8	61	280	67.7	71.5	--	<.008	.40
SEP 25...	1250	30	668	7.8	23.0	6.7	77	210	55.7	41.9	.37	.026	.40
Date		NITRO-GEN, AMMONIA DIS-SOLVED (MG/L) AS N (00608)	NITRO-GEN, TOTAL (MG/L) AS N (00600)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L) AS N (00625)	PHOS-PHORUS TOTAL (MG/L) AS P (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L) AS P (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L) AS PO4 (00660)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER REC FLTRD (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, SOLVED (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)
OCT 30...	<.04	.89	--	.41	.071	.04	.117	1.4	53	<.002	<.004	<.002	<.005
NOV 27...	<.04	1.1	--	.47	.081	.05	.147	1.6	25	--	--	--	--
DEC 20...	<.04	.92	--	.42	.096	.04	.110	.59	10	<.002	<.004	<.002	<.005
JAN 17...	<.04	1.3	--	.38	.018	<.02	--	.72	19	--	--	--	--
FEB 12...	<.04	.98	--	.30	.012	<.02	--	.36	11	<.006	<.006	<.004	<.005
APR 23...	.05	1.0	.30	.35	.127	.08	.254	.45	14	<.006	<.006	<.010	<.005
MAY 30...	E.03	1.0	--	.40	.134	.08	.258	.29	13	<.006	<.006	<.004	<.005
JUN 26...	<.04	.39	--	.32	.057	.03	.101	.44	40	<.006	<.006	<.004	<.005
JUL 31...	E.03	.96	--	.37	.077	.05	.147	18.0	370	<.006	<.006	<.004	<.005
AUG 27...	<.04	.71	--	.31	.042	.02	.058	.54	20	<.006	<.006	<.004	<.005
SEP 25...	<.04	.76	--	.36	.098	<.02	--	1.8	22	--	--	--	--

WATER-QUALITY DATA. WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

WATER-QUALITY DATA. WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

[illegible]

GUADALUPE RIVER BASIN

08178800 Salado Creek at Loop 13 at San Antonio, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)
OCT 30...	<.007	<.006	<.002	<.010	<.011	.03	<.010	<.011	<.02	<.004	.023	.21	<.034
NOV 27...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC 20...	<.007	<.006	<.002	<.010	<.011	.02	<.010	<.011	<.02	<.004	<.011	.13	<.034
JAN 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	<.010	<.006	<.004	<.022	<.011	.06	<.010	<.011	<.02	<.004	.009	.16	--u
APR 23...	<.010	<.006	<.004	<.022	<.011	.05	<.010	<.011	<.02	<.004	.018	E.14	<.034
MAY 30...	<.010	<.006	<.004	<.022	<.011	.09	<.010	<.011	<.02	<.004	<.005	E.13	<.034
JUN 26...	<.010	<.006	<.004	<.022	<.011	.07	<.010	<.011	<.02	<.004	<.006	.42	<.034
JUL 31...	<.010	<.006	<.004	<.022	<.011	.03	<.010	<.011	<.02	<.004	<.005	E.12	<.034
AUG 27...	<.010	<.006	<.004	<.022	<.011	.17	<.010	<.011	<.02	<.004	<.005	.18	E.028
SEP 25...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT 30...	<.02	<.005	<.002	<.009
NOV 27...	--	--	--	--
DEC 20...	<.02	<.005	<.002	<.009
JAN 17...	--	--	--	--
FEB 12...	<.02	<.005	<.002	<.009
APR 23...	<.02	<.005	<.002	<.009
MAY 30...	<.02	<.005	<.002	<.009
JUN 26...	<.02	<.005	<.002	<.009
JUL 31...	<.02	<.005	<.002	<.009
AUG 27...	<.02	<.005	<.002	<.009
SEP 25...	--	--	--	--

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:

n -- Below the NDV

Null value qualifier codes used in this report:

e -- Required equipment not functional/avail
i -- Required sample type not received
u -- Unable to determine-matrix interference

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GUADALUPE RIVER BASIN

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.--328 mi².

PERIOD OF RECORD.--Oct. 1982 to current year.

Water-quality records.--Chemical data: Jan. 1983 to Sept. 1993. Biochemical data: Jan. 1983 to Sept. 1993. Pesticide data: Jan. 1983 to Sept. 1993.

REVISIONS.--The drainage area reported since water year 1983 has been revised from 427 mi² to 328 mi².

GAGE.--Water-stage recorder. Datum of gage is 1,189.46 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. There are several small diversions upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1880, 46.62 ft Aug. 2, 1978.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	59	179	123	95	66	62	41	35	174	411	146
2	59	59	181	120	92	66	59	40	38	e21000	384	143
3	58	59	189	113	90	63	55	40	35	e17400	363	139
4	57	58	180	113	89	62	53	40	34	e34100	343	136
5	56	57	171	122	91	61	53	39	33	e104000	324	134
6	56	57	169	111	97	61	54	37	33	e25300	322	130
7	56	57	166	109	96	62	60	36	33	e10400	312	980
8	56	57	176	107	92	62	68	35	32	e5180	301	1320
9	56	56	171	107	88	62	69	34	29	e2740	306	985
10	57	56	169	107	85	60	64	33	28	2080	312	846
11	63	55	166	106	81	59	58	31	27	1760	320	678
12	94	55	159	103	80	59	56	30	26	1370	288	528
13	210	55	154	102	79	58	54	29	25	1640	267	442
14	171	56	148	101	77	58	58	29	22	1680	253	386
15	128	1450	147	99	78	60	60	30	21	1510	241	345
16	108	864	152	99	77	59	68	30	20	1710	230	323
17	96	1000	151	100	76	59	71	31	20	1470	221	307
18	89	477	144	101	76	59	65	83	18	1300	214	291
19	85	377	140	98	76	64	59	60	17	1130	210	309
20	81	393	136	96	77	66	55	49	16	1010	202	285
21	77	357	136	94	76	67	53	42	16	913	195	252
22	74	316	131	94	73	63	52	38	15	835	188	235
23	72	290	128	94	71	60	51	36	14	768	183	222
24	71	264	127	96	70	59	e50	34	14	718	177	213
25	68	240	127	95	69	58	e49	33	15	668	171	206
26	66	228	124	94	66	57	e48	35	14	617	170	201
27	64	213	123	94	66	56	e47	32	15	569	165	194
28	62	199	122	94	66	55	e46	32	15	535	160	185
29	61	200	120	94	---	55	45	33	15	499	162	179
30	60	189	118	93	---	63	43	34	269	473	159	174
31	60	---	116	95	---	63	---	33	---	444	149	---
TOTAL	2432	7853	4620	3174	2249	1882	1685	1159	944	243993	7703	10914
MEAN	78.45	261.8	149.0	102.4	80.32	60.71	56.17	37.39	31.47	7871	248.5	363.8
MAX	210	1450	189	123	97	67	71	83	269	104000	411	1320
MIN	56	55	116	93	66	55	43	29	14	174	149	130
AC-FT	4820	15580	9160	6300	4460	3730	3340	2300	1870	484000	15280	21650

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2002, BY WATER YEAR (WY)

	MEAN	115.8	133.4	160.9	131.6	135.5	159.7	126.0	159.8	302.6	506.9	65.95	86.83
MAX	630	723	1278	638	922	985	547	696	2785	7871	248	364	
(WY)	1987	2001	1992	1992	1992	1992	1992	1987	1987	2002	2002	2002	
MIN	25.7	27.2	27.0	28.4	27.0	24.3	17.7	14.6	8.77	2.36	2.00	1.28	
(WY)	1985	2000	1994	1990	2000	2000	2000	1996	1996	1996	1996	2000	

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1983 - 2002

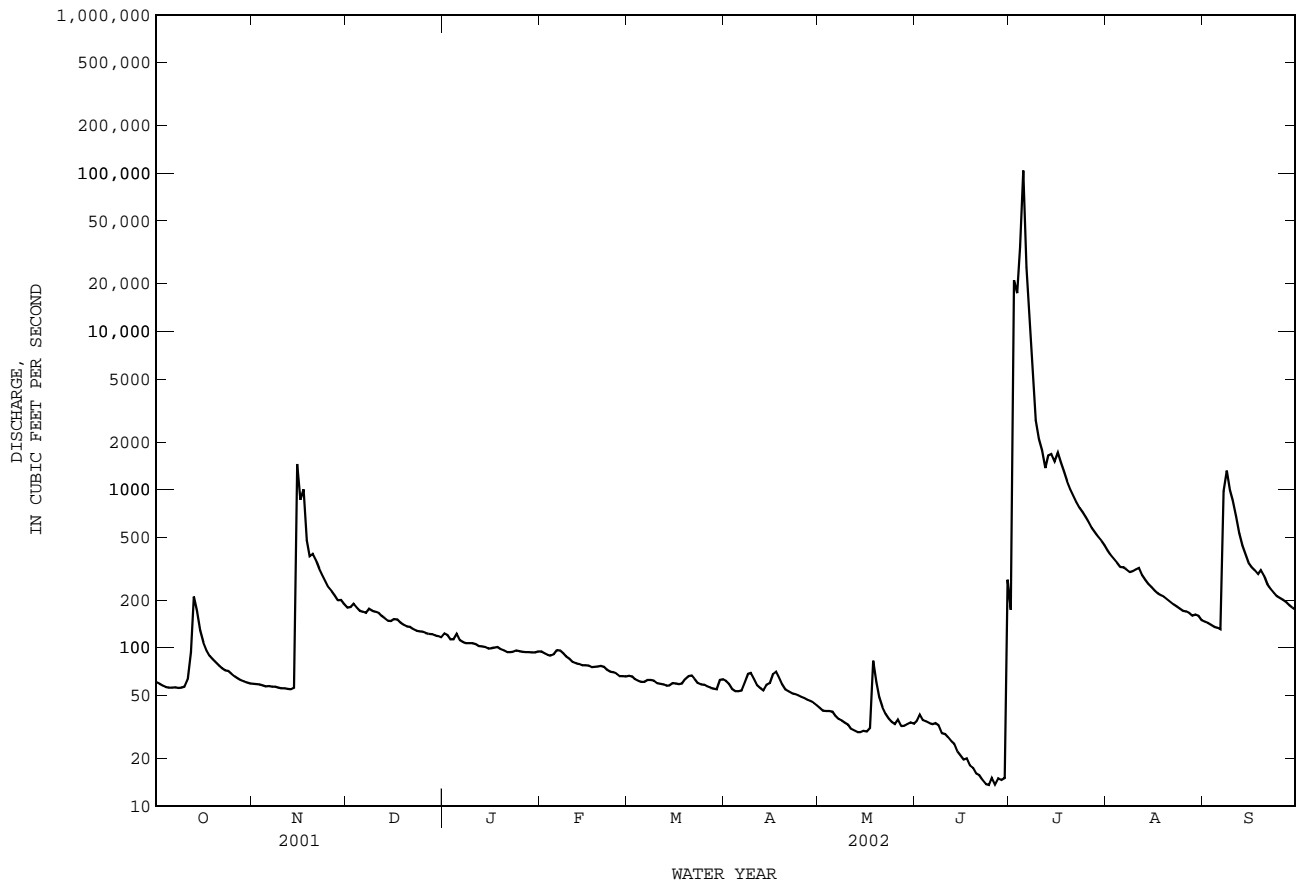
ANNUAL TOTAL	62468.6	288608	
ANNUAL MEAN	171.1	790.7	174.2
HIGHEST ANNUAL MEAN			791
LOWEST ANNUAL MEAN			20.3
HIGHEST DAILY MEAN	1750	Sep 6	104000
LOWEST DAILY MEAN	7.6	Aug 25	14
ANNUAL SEVEN-DAY MINIMUM	8.6	Aug 12	15
MAXIMUM PEAK FLOW			i159000
MAXIMUM PEAK STAGE			a38.91
INSTANTANEOUS LOW FLOW			12
ANNUAL RUNOFF (AC-FT)	123900	572500	126200
10 PERCENT EXCEEDS	293	511	278
50 PERCENT EXCEEDS	158	91	62
90 PERCENT EXCEEDS	25	33	18

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08178880 Medina River at Bandera, TX--Continued



SAN ANTONIO RIVER BASIN

08179500 Medina Lake near San Antonio, TX

LOCATION.--Lat 29°32'24", long 98°56'01", Medina County, Hydrologic Unit 12100302, at gate-operating platform, 576 ft from the left end of Medina Dam on Medina River, 4.2 mi upstream from Medina diversion dam, 13 mi north of Castroville, 28 mi west of San Antonio, and 70.4 mi from mouth.

DRAINAGE AREA.--634 mi².

PERIOD OF RECORD.--May. 1913 to Sept. 1994, Aug. 1997 to current year. Prior to Oct. 1965, end of month contents only from records provided by Bexar-Medina-Atascosa Counties Water Control and Improvement District No. 1.
Water-quality records.--Chemical data: Oct. 1969 to Sept. 1984.

REVISED RECORDS.--WSP 1923: 1953(M), Drainage area.

GAGE.--Water stage recorder. Datum of the gage is NGVD of 1929. Prior to Oct. 1999, datum of gage was 7.81 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records good. The lake is formed by a gravity-type concrete dam, 1,580 ft long. The dam was completed and storage began May 7, 1913. The uncontrolled spillway is a cut through natural rock 880 ft long, with a 3-foot wide cutoff wall, located near right end of dam. The dam and lake are owned and operated by Bexar-Medina-Atascosa Counties Water Control and Improvement District No. 1. Water is released downstream to Medina Diversion Lake where it is diverted into Medina Canal by the Water District. Capacity table based on survey made by the Texas Water Development Board, July 1995. Conservation pool storage is 254,843 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	1,076.2
Crest of spillways.....	1,064.2
Water-supply outlet pipe (invert).....	958.7
Lowest gated outlet (invert).....	912.2

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 322,700 acre-ft July 5, 2002, elevation, 1074.6 ft; minimum contents, 780 acre-ft Apr. 11, 1948, elevation, 936.2 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 322,700 acre-ft, July 5, elevation, 1,074.65 ft; minimum contents, 214,000 acre-ft, June 29, 30, elevation, 1,057.14 ft.

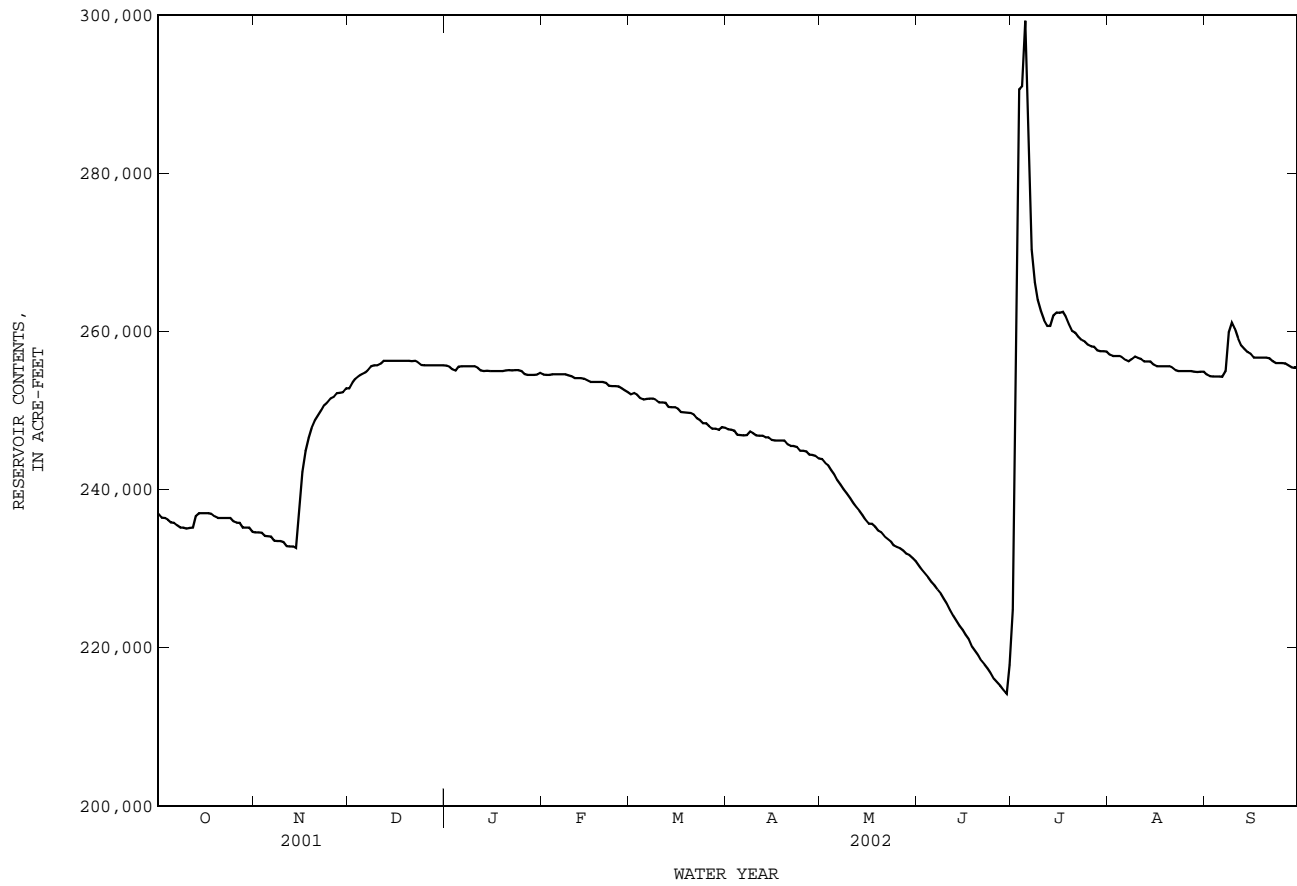
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	237000	234600	252800	255700	254500	252000	247600	243900	230400	224800	257100	254500
2	236400	234600	253500	255500	254500	252200	247600	243400	229800	259700	256900	254300
3	236400	234600	254000	255200	254500	252000	247500	243100	229400	290600	256900	254300
4	236200	234100	254300	255000	254600	251600	246900	242500	228900	291000	256900	254300
5	235900	234100	254600	255600	254600	251400	246900	241900	228300	299300	256700	254300
6	235800	234100	254800	255600	254600	251500	246900	241200	227900	288000	256400	254300
7	235500	233500	255100	255600	254600	251500	246900	240600	227300	270400	256200	255000
8	235200	233500	255600	255600	254600	251500	247300	240000	226900	266200	256500	259900
9	235200	233500	255700	255600	254500	251300	247100	239500	226200	264000	256800	261200
10	235100	233400	255700	255600	254300	251000	246900	238900	225500	262600	256600	260400
11	235100	232800	255900	255400	254100	251000	246800	238400	224800	261400	256500	259200
12	235200	232800	256300	255100	254100	251000	246800	237800	224100	260700	256200	258200
13	236600	232800	256300	255000	254100	250500	246600	237300	223400	260700	256200	257800
14	237000	232600	256300	255000	254000	250400	246600	236700	222800	262000	256200	257400
15	237000	237400	256300	255000	253800	250400	246300	236200	222300	262400	255800	257200
16	237000	242200	256300	255000	253600	250200	246200	235700	221600	262400	255600	256700
17	237000	244900	256300	255000	253600	249800	246200	235700	221100	262500	255600	256700
18	236900	246600	256300	255000	253600	249800	246200	235300	220200	261800	255600	256700
19	236600	247800	256300	255000	253600	249700	246200	234800	219600	260900	255600	256700
20	236400	248700	256300	255100	253600	249700	245700	234600	219000	260100	255600	256700
21	236400	249400	256200	255100	253500	249500	245500	234100	218400	259800	255400	256600
22	236400	250000	256300	255100	253100	249000	245500	233800	217900	259300	255100	256200
23	236400	250600	256100	255100	253100	248800	245400	233500	217400	258900	255000	256000
24	236400	251000	255800	255100	253100	248400	244900	232900	216700	258700	255000	256000
25	236000	251500	255700	255000	253000	248400	244900	232700	216100	258300	255000	256000
26	235800	251700	255700	254600	252800	248000	244800	232600	215600	258100	255000	256000
27	235800	252200	255700	254500	252500	247700	244400	232300	215200	258100	255000	255700
28	235200	252200	255700	254500	252300	247700	244400	231900	214700	257600	254900	255500
29	235200	252300	255700	254500	---	247500	244200	231700	214100	257500	254900	255400
30	235200	252800	255700	254500	---	247900	244000	231300	217800	257500	254900	255400
31	234700	---	255700	254800	---	247800	---	231000	---	257500	254900	---
TOTAL	7317000	7252300	7923000	7908400	7106800	7749200	7383200	7335300	6663400	8172800	7931000	7694600
MEAN	236000	241700	255600	255100	253800	250000	246100	236600	222100	263600	255800	256500
MAX	237000	252800	256300	255700	254600	252200	247600	243900	230400	299300	257100	261200
MIN	234700	232600	252800	254500	252300	247500	244000	231000	214100	224800	254900	254300
(+)	1060.8	1063.8	1064.2	1064.1	1063.8	1063.0	1062.4	1060.2	1057.8	1064.6	1064.2	1064.3
(@)	-2300	+18100	+2900	-900	-2500	-4500	-3800	-13000	-13200	+39700	-2600	+500
CAL YR 2001	MAX 256300	MIN 188400	(@)	+67300								
WTR YR 2002	MAX 299300	MIN 214100	(@)	+18400								

(+) Elevation, in feet, at end of month.

(@) Change in contents, in acre-feet.

08179500 Medina Lake near San Antonio, TX--Continued



GUADALUPE RIVER BASIN

08179520 Medina River below Medina Lake near San Antonio, TX
(Partial-record station)

LOCATION.--Lat 29°32'02", long 98°56'06", Medina County, Hydrologic Unit 12100302, on left bank, 0.4 mi downstream from Bexar-Medina-Atascosa Counties Water Control and Improvement District No.1 Medina Dam, 0.2 mi upstream of County Road 271, 1.0 mi southwest of Mico, 7.2 mi north west of Rio Medina, and at river mile 70.

DRAINAGE AREA.--635 mi².

PERIOD OF RECORD.--Apr. 2001 to July 2002 (daily mean discharges below 250 ft³/s).

GAGE.--Water-stage recorder. Datum of gage is 1010 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in Apr. 2001, at least 10% of the contributing drainage area has been regulated.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	63	112	172	137	81
2	---	---	---	---	---	---	---	63	102	170	137	80
3	---	---	---	---	---	---	---	63	92	165	137	79
4	---	---	---	---	---	---	---	65	83	164	137	73
5	---	---	---	---	---	---	---	65	78	164	137	83
6	---	---	---	---	---	---	---	66	75	164	146	71
7	---	---	---	---	---	---	---	68	73	163	154	69
8	---	---	---	---	---	---	---	77	70	164	154	69
9	---	---	---	---	---	---	---	69	70	164	155	68
10	---	---	---	---	---	---	---	68	71	164	157	67
11	---	---	---	---	---	---	---	68	79	163	155	66
12	---	---	---	---	---	---	---	69	118	163	155	66
13	---	---	---	---	---	---	---	69	142	161	155	66
14	---	---	---	---	---	---	---	69	174	157	155	66
15	---	---	---	---	---	---	---	73	176	156	155	66
16	---	---	---	---	---	---	---	80	174	155	155	66
17	---	---	---	---	---	---	---	98	173	155	155	66
18	---	---	---	---	---	---	---	119	173	155	155	66
19	---	---	---	---	---	---	---	145	173	155	154	66
20	---	---	---	---	---	---	e53	165	175	156	154	66
21	---	---	---	---	---	---	54	205	174	155	153	66
22	---	---	---	---	---	---	54	195	170	155	153	66
23	---	---	---	---	---	---	56	178	168	155	153	66
24	---	---	---	---	---	---	59	171	172	155	153	65
25	---	---	---	---	---	---	61	171	172	154	153	65
26	---	---	---	---	---	---	62	173	172	145	156	65
27	---	---	---	---	---	---	62	157	172	139	162	64
28	---	---	---	---	---	---	62	135	174	138	156	64
29	---	---	---	---	---	---	62	126	173	138	157	64
30	---	---	---	---	---	---	62	117	173	137	160	64
31	---	---	---	---	---	---	---	116	---	137	119	---
TOTAL	---	---	---	---	---	---	---	3366	4103	4838	4674	2049
MEAN	---	---	---	---	---	---	---	108.6	136.8	156.1	150.8	68.30
MAX	---	---	---	---	---	---	---	205	176	172	162	83
MIN	---	---	---	---	---	---	---	63	70	137	119	64
AC-FT	---	---	---	---	---	---	---	6680	8140	9600	9270	4060

e Estimated

08179520 Medina River below Medina Lake near San Antonio, TX--Continued
(Partial-record station)

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	66	79	119	69	62	61	93	160	179	---	---
2	64	66	80	111	66	62	62	129	160	---	---	---
3	64	66	80	104	64	61	61	198	160	---	---	---
4	64	66	81	103	64	61	61	240	160	---	---	---
5	64	66	82	128	64	62	61	240	159	---	---	---
6	63	66	85	126	64	62	62	214	178	---	---	---
7	63	66	90	123	63	62	62	194	197	---	---	---
8	64	65	126	118	63	62	62	184	205	---	---	---
9	64	65	141	116	63	62	62	174	231	---	---	---
10	64	65	141	116	63	61	62	173	231	---	---	---
11	64	66	160	116	62	62	62	172	231	---	---	---
12	64	66	204	104	62	61	62	172	235	---	---	---
13	71	66	e231	99	62	61	62	171	233	---	---	---
14	64	66	222	97	62	61	62	171	209	---	---	---
15	e65	78	223	91	62	76	62	172	186	---	---	---
16	64	73	e235	89	62	95	62	172	186	---	---	---
17	e61	76	e232	89	62	95	62	157	186	---	---	---
18	64	77	225	88	62	95	62	121	186	---	---	---
19	65	77	218	89	62	96	62	98	186	---	---	---
20	66	77	201	81	62	95	62	98	186	---	---	---
21	66	77	191	80	62	95	62	98	185	---	---	---
22	66	78	194	78	62	95	62	98	185	---	---	---
23	66	79	188	78	62	95	62	98	185	---	---	---
24	66	78	174	86	62	95	62	98	185	---	---	---
25	66	79	163	75	62	95	62	98	184	---	---	---
26	66	79	156	72	62	82	62	98	184	---	---	---
27	65	79	150	70	62	60	62	98	184	---	---	---
28	65	78	147	69	62	61	62	98	184	---	---	---
29	65	78	144	70	---	61	61	97	184	---	---	---
30	65	78	133	71	---	63	74	122	188	---	---	---
31	66	---	126	76	---	61	---	160	---	---	---	---
TOTAL	2008	2162	4902	2932	1759	2277	1867	4506	5713	---	---	---
MEAN	64.77	72.07	158.1	94.58	62.82	73.45	62.23	145.4	190.4	---	---	---
MAX	71	79	235	128	69	96	74	240	235	---	---	---
MIN	61	65	79	69	62	60	61	93	159	---	---	---
AC-FT	3980	4290	9720	5820	3490	4520	3700	8940	11330	---	---	---

e Estimated

GUADALUPE RIVER BASIN

08180000 Medina Canal near Riomedina, TX

LOCATION.--Lat 29°30'19", long 98°54'11", Medina County, Hydrologic Unit 12100302, on left bank of canal, 350 ft downstream from county road bridge, 1,900 ft downstream from head of canal and Medina Diversion Dam, 4.6 mi downstream from Medina Dam, 4.7 mi north of Riomedina, and 25.0 mi northwest of San Antonio.

PERIOD OF RECORD.--Mar. 1922 to May 1934, July 1957 to Sept. 1993, Feb. 2001 to current year.

REVISED RECORDS.--WSP 568: 1922. WSP 1712: 1922(M), 1924, 1926.

GAGE.--Water-stage recorder. Datum of gage is 910 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair. Station is above all diversions from canal. Canal diverts water from right end of Medina Diversion Dam 1,900 ft upstream from gage. Water is used for irrigation downstream near LaCoste and Natalia. Prior to Nov. 1984, double-barrel flume 54 ft downstream from gage. No flow at times.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	64	21	0.00	34	57	43	135	157	67	34	130
2	51	64	21	0.00	34	58	43	148	152	11	35	126
3	52	65	21	0.00	35	57	42	158	152	12	34	125
4	52	66	21	0.00	35	56	53	167	152	11	33	100
5	51	64	21	0.00	34	56	60	176	152	81	32	49
6	50	83	20	0.00	33	56	59	162	160	8.5	31	64
7	25	89	20	0.00	33	56	58	155	167	0.00	41	40
8	11	84	21	0.00	14	55	21	158	167	0.00	42	0.0
9	11	84	21	0.00	0.02	55	0.00	159	176	0.00	50	0.09
10	11	82	20	0.00	26	55	0.00	159	163	0.00	60	0.00
11	21	79	20	14	80	55	0.00	157	173	0.00	60	0.00
12	29	79	20	38	61	54	0.00	157	196	0.00	89	0.00
13	29	76	20	39	60	54	0.00	156	204	0.00	111	0.00
14	28	57	20	22	58	54	0.00	155	207	0.00	113	0.00
15	28	15	20	21	44	79	0.00	156	204	0.00	112	0.00
16	18	15	20	25	31	102	0.00	157	197	0.00	109	0.00
17	11	14	7.5	25	31	100	0.00	114	195	0.00	105	0.00
18	11	15	0.00	28	31	90	0.00	66	198	0.00	105	0.00
19	11	15	0.00	33	36	87	0.00	55	193	0.00	107	0.00
20	19	6.6	0.00	33	79	53	0.00	61	193	0.00	108	0.00
21	22	0.00	0.00	43	105	39	0.00	89	192	0.00	111	0.00
22	22	0.00	0.00	59	84	41	24	112	188	0.00	111	0.00
23	22	0.00	0.00	58	61	41	62	116	185	0.00	111	0.00
24	24	0.00	0.00	58	60	42	75	114	183	0.00	112	0.00
25	34	0.00	0.00	57	60	43	95	112	182	0.00	113	0.00
26	49	0.00	0.00	57	60	41	77	121	181	0.00	112	0.00
27	48	0.00	0.00	58	58	41	58	127	179	0.00	119	40
28	48	9.1	0.00	55	58	41	57	123	178	0.00	125	70
29	59	21	0.00	35	---	42	79	150	177	21	125	69
30	64	21	0.00	35	---	44	113	160	179	34	128	33
31	65	---	0.00	35	---	44	---	162	---	34	130	---
TOTAL	1037	1167.70	334.50	828.00	1335.02	1748	1019.00	4197	5382	279.50	2708	846.09
MEAN	33.45	38.92	10.79	26.71	47.68	56.39	33.97	135.4	179.4	9.016	87.35	28.20
MAX	65	89	21	59	105	102	113	176	207	81	130	130
MIN	11	0.00	0.00	0.00	0.02	39	0.00	55	152	0.00	31	0.00
AC-FT	2060	2320	663	1640	2650	3470	2020	8320	10680	554	5370	1680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2002h, BY WATER YEAR (WY)

MEAN	38.41	23.87	19.21	18.14	20.59	35.20	43.52	53.38	83.25	79.40	76.86	47.23
MAX	105	65.3	61.5	65.6	83.0	95.4	131	157	179	179	149	132
(WY)	1990	1989	1989	1971	1971	1971	1972	1971	2002	1978	1989	1989
MIN	1.77	0.000	0.000	0.000	2.04	0.000	2.82	3.33	14.2	9.02	16.8	0.000
(WY)	1974	1990	1985	1985	1968	2001	1992	1975	1986	2002	1971	1925

SUMMARY STATISTICS

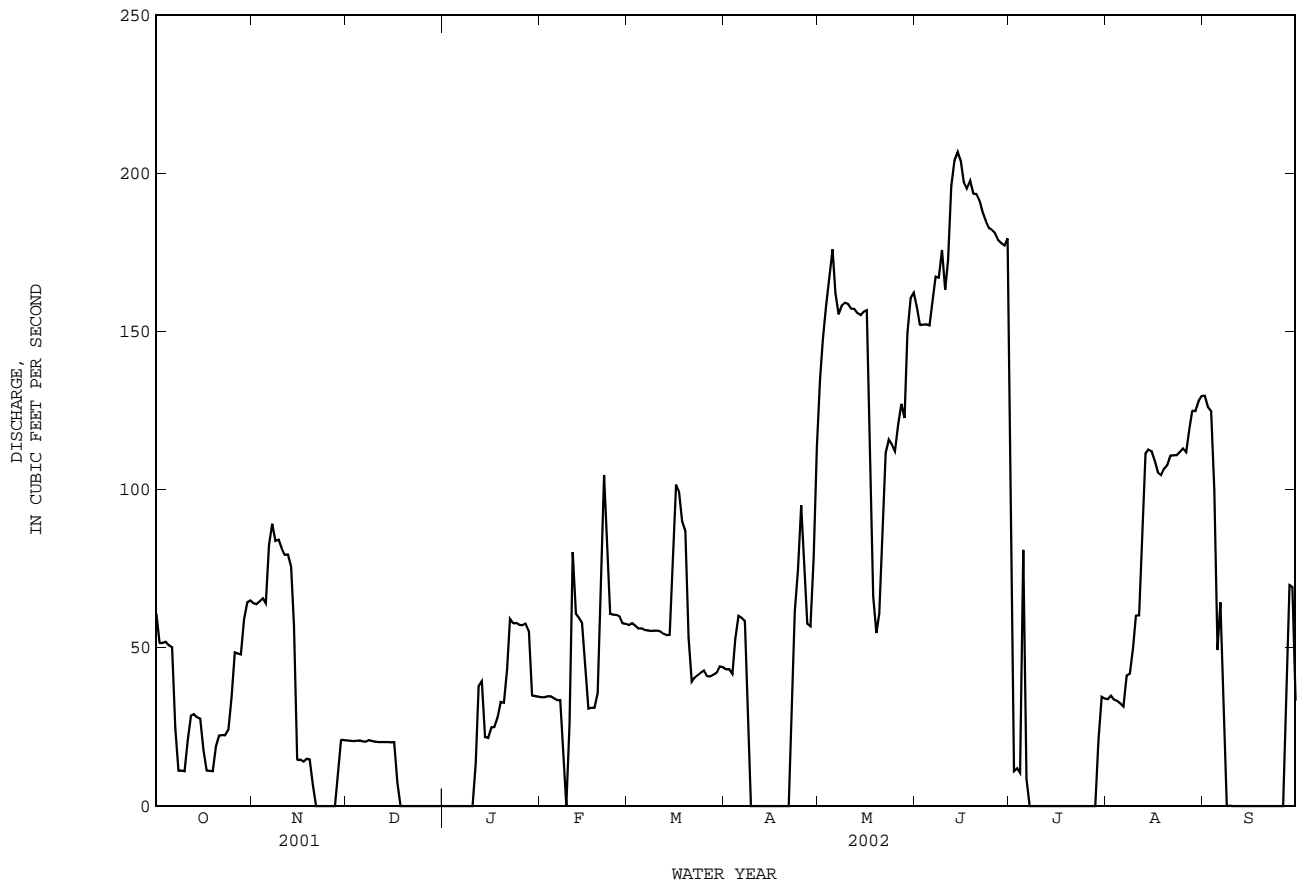
FOR 2002 WATER YEAR

WATER YEARS 1922 - 2002h

ANNUAL TOTAL	20881.81		
ANNUAL MEAN	57.21	45.17	
HIGHEST ANNUAL MEAN		95.2	1989
LOWEST ANNUAL MEAN		14.8	1926
HIGHEST DAILY MEAN	207	216	May 6 1971
LOWEST DAILY MEAN	0.00	0.00	Nov 1 1922
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	Nov 1 1922
MAXIMUM PEAK FLOW	434	434	Jul 5 2002
MAXIMUM PEAK STAGE	12.61	12.61	Jul 5 2002
ANNUAL RUNOFF (AC-FT)	41420	32720	
10 PERCENT EXCEEDS	157	113	
50 PERCENT EXCEEDS	42	33	
90 PERCENT EXCEEDS	0.00	0.00	

h See PERIOD OF RECORD paragraph.

08180000 Medina Canal near Riomedina, TX--Continued



GUADALUPE RIVER BASIN

08180010 Diversion Lake near Riomedina, TX

LOCATION.--Lat 29°30'36", long 98°54'04", Medina County, Hydrologic Unit 12100302, on right wing wall of dam, 0.90 mi north of county road 2615, 4.2 mi downstream of Medina dam, 6.1 mi north of Riomedina, and 66.2 mi from mouth.

DRAINAGE AREA.--649 mi².

PERIOD OF RECORD.--Feb. 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily contents, which are fair. The lake is formed by a gravity-type dam, 440 ft. long, built on a radius of 700 ft. It is an overflow type, open spillway, with the spillway in the center of the crest. The dam was completed and impoundment began around May 1912. On the west end of the dam are headgates and control valves for the intakes to Medina Canal. The dam and lake are owned and operated by Bexar-Medina-Atascosa Counties Water Control and Improvement District No. 1. Water is diverted to Medina Canal by the Water District for downstream irrigation. Capacity table based on volumetric survey by the Texas Water Development Board, Jul. 1995. Conservation pool storage is 2,560 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.	921.6
Crest of spillway	919.0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents 6,570 acre-ft, July 5, 2002, elevation 933.34 ft; minimum contents, 1,760 acre-ft, June 12, 13, 2001, elevation, 913.56 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 6,570 acre-ft, July 5, elevation, 933.34 ft; minimum contents, 2,060 acre-ft, May 2, elevation, 915.76 ft.

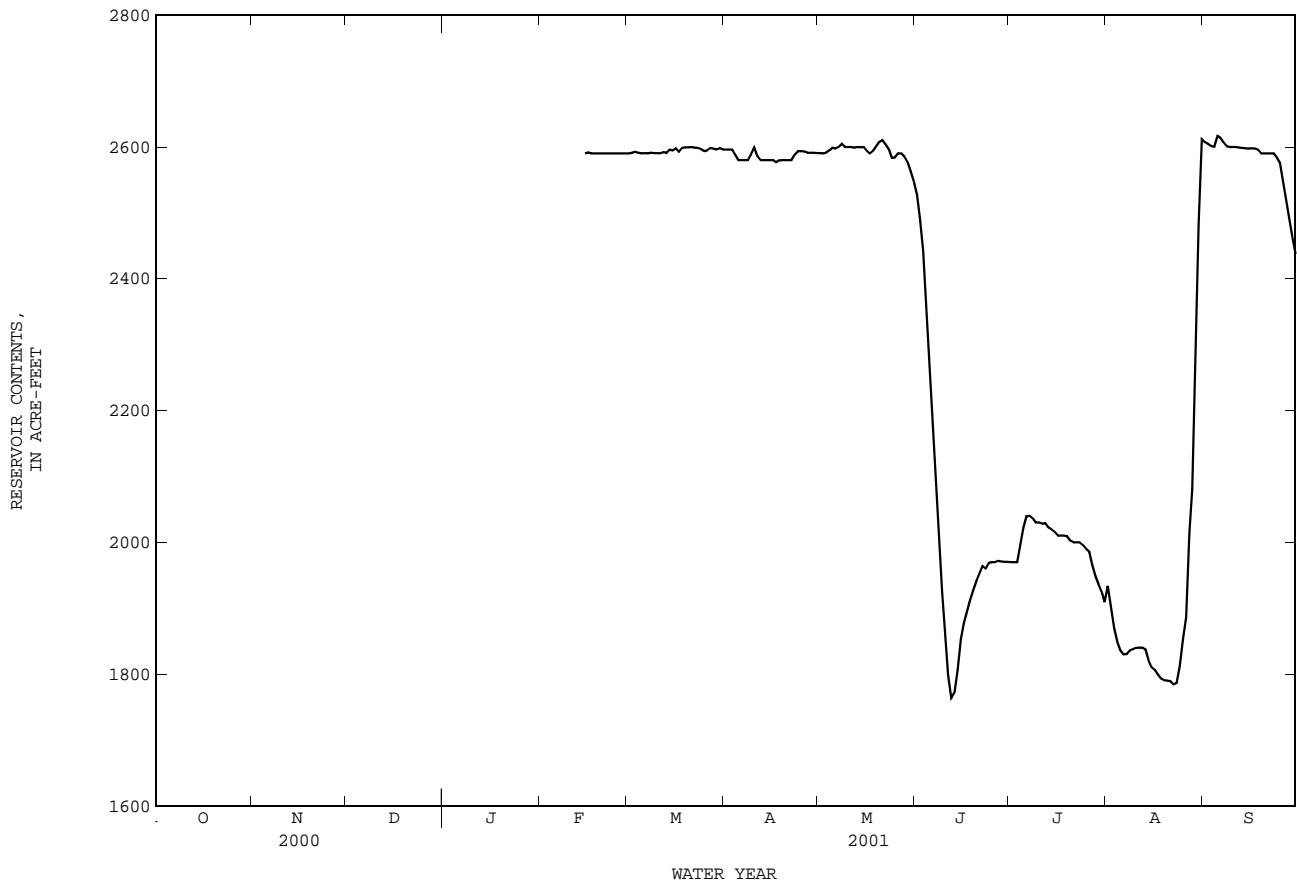
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	2590	2600	2590	2530	1970	1930	2610
2	---	---	---	---	---	2590	2600	2590	2490	1970	1900	2600
3	---	---	---	---	---	2590	2600	2590	2440	1970	1870	2600
4	---	---	---	---	---	2590	2590	2590	2380	1990	1850	2600
5	---	---	---	---	---	2590	2580	2600	2320	2020	1840	2620
6	---	---	---	---	---	2590	2580	2600	2230	2040	1830	2610
7	---	---	---	---	---	2590	2580	2600	2130	2040	1830	2610
8	---	---	---	---	---	2590	2580	2600	2020	2040	1840	2600
9	---	---	---	---	---	2590	2590	2600	1930	2030	1840	2600
10	---	---	---	---	---	2590	2600	2600	1860	2030	1840	2600
11	---	---	---	---	---	2590	2590	2600	1800	2030	1840	2600
12	---	---	---	---	---	2590	2580	2600	1760	2030	1840	2600
13	---	---	---	---	---	2590	2580	2600	1770	2020	1840	2600
14	---	---	---	---	---	2600	2580	2600	1810	2020	1820	2600
15	---	---	---	---	e2590	2590	2580	2600	1850	2020	1810	2600
16	---	---	---	---	2590	2600	2580	2590	1880	2010	1810	2600
17	---	---	---	---	2590	2590	2580	2590	1900	2010	1800	2600
18	---	---	---	---	2590	2600	2580	2590	1910	2010	1790	2600
19	---	---	---	---	2590	2600	2580	2600	1930	2010	1790	2590
20	---	---	---	---	2590	2600	2580	2610	1940	2000	1790	2590
21	---	---	---	---	2590	2600	2580	2610	1950	2000	1790	2590
22	---	---	---	---	2590	2600	2580	2600	1960	2000	1780	2590
23	---	---	---	---	2590	2600	2590	2600	1960	2000	1790	2590
24	---	---	---	---	2590	2600	2590	2580	1970	2000	1810	2580
25	---	---	---	---	2590	2590	2590	2580	1970	1990	1850	2580
26	---	---	---	---	e2590	2590	2590	2590	1970	1990	1890	2550
27	---	---	---	---	e2590	2600	2590	2590	1970	1970	2010	2520
28	---	---	---	---	2590	2600	2590	2590	1970	1950	2080	2490
29	---	---	---	---	---	2600	2590	2580	1970	1940	2230	2460
30	---	---	---	---	---	2600	2590	2560	1970	1920	2480	2440
31	---	---	---	---	---	2600	---	2550	---	1910	2610	---
TOTAL	---	---	---	---	---	80430	77590	80370	60540	61930	59020	77420
MEAN	---	---	---	---	---	2590	2590	2590	2020	2000	1900	2580
MAX	---	---	---	---	---	2600	2600	2610	2530	2040	2610	2620
MIN	---	---	---	---	---	2590	2580	2550	1760	1910	1780	2440
(+)					919.2	919.2	919.2	918.9	915.1	914.6	919.3	918.2
(@)						+10	-10	-40	-580	-60	+700	-170

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

e Estimated

08180010 Diversion Lake near Riomedina, TX--Continued



GUADALUPE RIVER BASIN

08180010 Diversion Lake near Riomedina, TX--Continued

RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

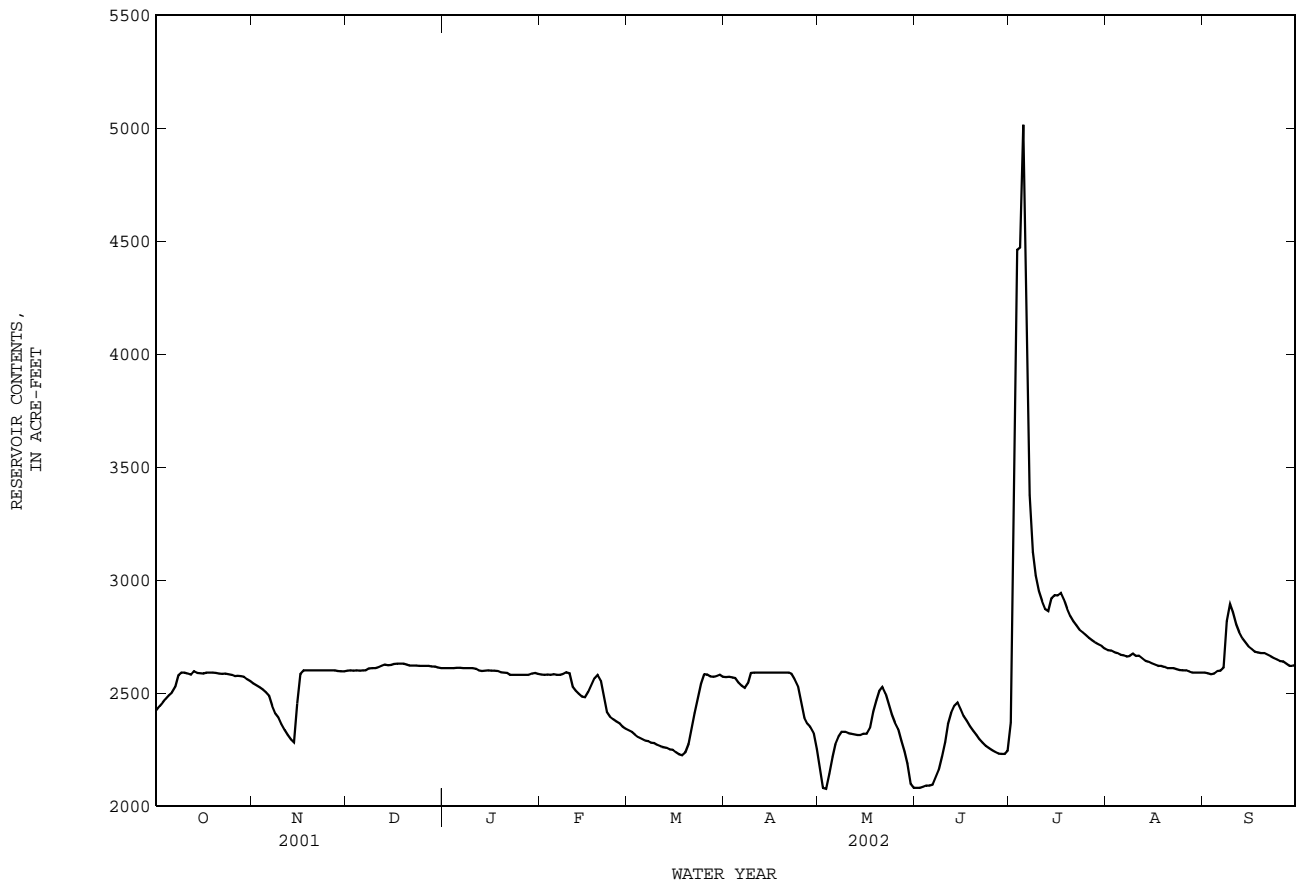
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2420	2540	2600	2610	2580	2330	2570	2160	2080	2370	2690	2590
2	2440	2530	2600	2610	2580	2330	2570	2080	2080	3140	2690	2590
3	2460	2520	2600	2610	2580	2320	2570	2080	2080	4460	2680	2580
4	2470	2510	2600	2610	2580	2300	2570	2140	2090	4470	2680	2590
5	2490	2500	2600	2610	2580	2300	2550	2220	2090	5010	2670	2600
6	2500	2490	2600	2610	2580	2290	2530	2270	2090	4390	2670	2600
7	2530	2440	2600	2610	2580	2290	2520	2310	2120	3380	2660	2610
8	2580	2410	2610	2610	2590	2280	2540	2330	2160	3120	2660	2820
9	2590	2390	2610	2610	2590	2280	2590	2330	2220	3020	2670	2890
10	2590	2360	2610	2610	2590	2270	2590	2320	2280	2950	2660	2860
11	2590	2340	2610	2610	2530	2260	2590	2320	2360	2910	2670	2810
12	2580	2310	2620	2600	2510	2260	2590	2320	2410	2870	2650	2770
13	2600	2290	2630	2600	2500	2260	2590	2310	2440	2860	2640	2740
14	2590	2280	2620	2600	2480	2250	2590	2310	2460	2920	2640	2720
15	2590	2450	2620	2600	2480	2250	2590	2320	2430	2930	2630	2710
16	2590	2580	2630	2600	2510	2240	2590	2320	2400	2930	2630	2690
17	2590	2600	2630	2600	2540	2230	2590	2340	2380	2940	2620	2680
18	2590	2600	2630	2600	2570	2230	2590	2420	2350	2910	2620	2680
19	2590	2600	2630	2590	2580	2240	2590	2470	2330	2870	2620	2680
20	2590	2600	2630	2590	2550	2270	2590	2510	2310	2840	2610	2680
21	2590	2600	2620	2590	2480	2340	2590	2530	2290	2820	2610	2670
22	2580	2600	2620	2580	2420	2410	2580	2500	2280	e2800	2610	2660
23	2590	2600	2620	2580	2390	2480	2560	2450	2270	e2780	2610	2650
24	2580	2600	2620	2580	2380	2540	2530	2410	2260	2770	2600	2650
25	2580	2600	2620	2580	2370	2580	2460	2370	2250	2760	2600	2640
26	2580	2600	2620	2580	2370	2580	2390	2340	2240	2740	2600	2640
27	2580	2600	2620	2580	2350	2570	2370	2290	2230	2730	2590	2630
28	2570	2600	2620	2580	2340	2570	2350	2240	2230	2720	2590	2620
29	2570	2600	2620	2590	---	2570	2320	2190	2230	2710	2590	2620
30	2560	2600	2610	2590	---	2580	2250	2100	2250	2710	2590	2620
31	2550	---	2610	2580	---	2570	---	2080	---	2700	2590	---
TOTAL	79300	75340	81080	80500	70180	73270	75900	71380	67690	95530	81640	80290
MEAN	2560	2510	2620	2600	2510	2360	2530	2300	2260	3080	2630	2680
MAX	2600	2600	2630	2610	2590	2580	2590	2530	2460	5010	2690	2890
MIN	2420	2280	2600	2580	2340	2230	2250	2080	2080	2370	2590	2580
(+)	918.4	919.2	919.3	919.1	917.6	919.1	917.0	915.9	917.0	919.8	919.2	919.4
(@)	+110	+50	+ 10	-30	-240	+230	-320	-170	+170	+450	-110	+30

WTR YR 2002 MAX 5010 MIN 2080 (@) +180

(+) Elevation, in feet, at end of month.

(@) Change in contents, in acre-feet.

08180010 Diversion Lake near Riomedina, TX--Continued



GUADALUPE RIVER BASIN

08180500 Medina River at Riomedina, TX
(Partial-record station)

LOCATION.--Lat 29°29'53", long 98°54'16", Medina County, Hydrologic Unit 12100302, on left bank at bridge at Haby's Crossing, 0.9 mi downstream from Bexar-Medina-Atascosa Counties Water Control and Improvement District No. 1 Diversion Dam, 4.2 mi northwest of Riomedina, 10.0 mi north of Castroville, 10.4 mi upstream from San Geronimo Creek, and 66.4 mi upstream from mouth.

DRAINAGE AREA.--650 mi², of which 634 mi² is above dam forming Medina Lake.

PERIOD OF RECORD.--Jan. 1922 to Sept. 1934 (daily record of flow over dam and monthly or annual record of seepage under dam), Jan. 1953 to Sept. 1973, Jan. 2001 to current year (daily mean discharges below base discharge of 1,000 ft³/s).

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 858.28 ft above NGVD of 1929. Prior to Sept. 30, 1934, water-stage recorder at upstream side of Medina Diversion Dam 0.9 mi upstream at different datum. Jan. 1953 to July 15, 1973, water-stage recorder on left bank 233 ft upstream from bridge at Haby's Crossing at different datum. July 27, 1973 to Sept. 30, 1973, nonrecording gage on left bank 233 ft upstream from bridge at Haby's Crossing at different datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in water year 1922, at least 10% of contributing drainage area has been regulated. 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 Medina Diversion Dam. There are several small diversions below Medina Diversion Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 33.88 ft, July. 5, 2002; minimum discharge, 0.00 ft³/s, on several days.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 33.88 ft, July 5; minimum discharge, 27 ft³/s, May 1, 2, 3, 4, gage height, 1.04 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	42	103	143	68	39	37	28	32	42	700	101
2	50	40	109	e138	64	39	38	28	33	---	643	94
3	48	39	108	132	62	37	40	27	33	---	589	89
4	49	37	107	131	61	37	32	28	32	---	526	98
5	49	36	110	151	66	38	31	29	32	---	481	130
6	48	36	115	150	68	35	31	35	32	---	452	130
7	48	36	122	149	65	36	32	36	32	---	424	166
8	75	36	157	144	78	34	32	35	33	---	424	---
9	101	36	173	143	102	32	70	34	33	---	505	---
10	100	35	175	144	94	31	78	35	35	---	433	---
11	96	35	188	136	41	32	78	35	36	---	444	---
12	e77	35	219	102	40	32	78	33	36	---	391	---
13	e74	34	235	96	39	32	79	32	37	---	327	---
14	e65	33	231	104	37	31	79	34	39	---	301	---
15	e57	37	232	105	36	31	78	36	39	---	278	---
16	e79	76	243	102	34	31	81	36	38	---	251	798
17	97	121	245	102	35	31	77	36	38	---	231	662
18	95	117	241	101	37	32	76	35	37	---	214	616
19	95	122	239	96	54	32	76	35	36	---	200	598
20	86	117	226	88	38	32	76	36	36	---	186	592
21	79	137	220	81	36	32	77	35	36	---	175	514
22	78	132	223	59	36	33	62	34	36	---	165	460
23	78	125	220	59	36	34	34	34	36	---	156	398
24	77	123	216	69	39	33	32	34	36	---	148	364
25	66	123	207	54	39	65	32	35	36	---	141	332
26	51	123	204	50	38	65	32	35	35	---	134	322
27	50	122	201	48	38	40	31	33	35	---	123	275
28	51	113	198	50	38	39	31	33	35	---	107	216
29	46	99	196	67	---	39	31	33	35	---	108	206
30	41	100	176	74	---	54	30	33	36	911	115	229
31	42	---	152	79	---	43	---	33	---	792	108	---
TOTAL	2098	2297	5791	3147	1419	1151	1591	1035	1055	---	9480	---
MEAN	67.68	76.57	186.8	101.5	50.68	37.13	53.03	33.39	35.17	---	305.8	---
MAX	101	137	245	151	102	65	81	36	39	---	700	---
MIN	41	33	103	48	34	31	30	27	32	---	107	---
AC-FT	4160	4560	11490	6240	2810	2280	3160	2050	2090	---	18800	---

e Estimated

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08180700 Medina River near Macdona, TX

LOCATION.--Lat 29°20'05", long 98°41'22", Bexar County, Hydrologic Unit 12100302, at downstream side of Loop 1604 bridge, 0.1 mi downstream from Polecat Creek, 0.7 mi north of Macdona, 2.2 mi downstream from Potranca Creek, and 21.2 mi upstream from mouth.

DRAINAGE AREA.--885 mi², of which 634 mi² is above dam forming Medina Lake.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan. 1981 to Sept. 1995, May 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 589.86 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in water year 1981, at least 10% of contributing drainage area has been regulated. 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 Medina Diversion Dam. There are several small diversions below Medina Diversion Dam.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	73	134	183	109	69	78	64	52	1290	801	173
2	73	73	146	178	103	68	72	62	51	2810	767	164
3	72	73	153	172	99	67	68	61	51	21600	742	154
4	72	72	146	168	98	69	68	61	51	34200	719	145
5	71	71	142	168	99	68	67	60	51	36000	685	141
6	70	70	141	175	100	66	65	59	51	40500	659	161
7	67	69	142	180	99	65	71	60	50	17100	631	245
8	68	70	159	176	96	65	313	59	49	7290	607	721
9	69	74	175	172	97	65	154	60	50	4410	605	e4400
10	86	73	177	170	116	64	96	59	49	3220	634	e3400
11	91	71	183	168	119	63	105	59	50	2480	600	e2000
12	93	70	195	167	96	63	105	57	50	2100	597	e1450
13	131	70	217	148	82	62	104	59	50	1830	562	1140
14	144	69	231	139	79	61	104	58	50	1900	523	997
15	109	192	234	138	77	61	104	58	51	2250	487	898
16	99	238	236	144	75	60	103	59	51	2510	456	820
17	96	118	246	138	74	60	105	72	51	2430	425	757
18	101	139	252	136	74	62	103	63	50	2480	394	708
19	103	143	251	136	73	63	100	59	49	2170	373	683
20	103	185	248	131	76	92	99	58	48	1870	e340	660
21	102	146	241	126	78	70	99	58	48	1660	314	648
22	95	145	236	123	72	64	98	58	49	1490	292	613
23	95	144	234	110	71	63	96	56	48	1360	274	585
24	95	143	231	104	70	64	80	56	47	1280	259	552
25	93	143	222	104	70	65	71	58	46	1180	245	524
26	90	143	214	102	68	66	70	58	48	1110	232	498
27	83	144	207	96	68	82	68	57	51	e1040	218	479
28	76	144	203	95	68	76	67	55	51	e972	201	448
29	75	146	200	93	---	70	66	54	54	e931	194	390
30	75	135	198	96	---	74	65	53	94	888	190	367
31	73	---	190	107	---	98	---	54	---	847	183	---
TOTAL	2744	3446	6184	4343	2406	2105	2864	1824	1541	203198	14209	24921
MEAN	88.52	114.9	199.5	140.1	85.93	67.90	95.47	58.84	51.37	6555	458.4	830.7
MAX	144	238	252	183	119	98	313	72	94	40500	801	4400
MIN	67	69	134	93	68	60	65	53	46	847	183	141
AC-FT	5440	6840	12270	8610	4770	4180	5680	3620	3060	403000	28180	49430

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2002h, BY WATER YEAR (WY)

MEAN	132.2	104.9	121.1	137.1	200.2	201.8	143.8	227.2	607.1	474.1	90.38	101.9
MAX	575	511	432	698	2333	2097	1302	1636	5726	6555	458	831
(WY)	1999	1999	1992	1992	1992	1992	1992	1992	1987	2002	2002	2002
MIN	32.3	25.7	18.0	22.1	34.2	39.0	34.1	29.6	25.1	27.4	25.1	27.8
(WY)	1992	1985	1985	1985	1985	1990	1986	1989	1990	1989	1989	1989

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1981 - 2002h

ANNUAL TOTAL	44243		269785				
ANNUAL MEAN	121.2		739.1		202.9		
HIGHEST ANNUAL MEAN					954		1992
LOWEST ANNUAL MEAN					38.1		1989
HIGHEST DAILY MEAN	894	Sep 6	40500	Jul 6	40500	Jul 6	2002
LOWEST DAILY MEAN	44	Aug 25	46	Jun 25	14	Jan 11	1985
ANNUAL SEVEN-DAY MINIMUM	46	Aug 21	48	Jun 20	16	Jan 7	1985
MAXIMUM PEAK FLOW			c55400	Jul 6	c55400	Jul 6	2002
MAXIMUM PEAK STAGE			a24.78	Jul 6	a24.78	Jul 6	2002
ANNUAL RUNOFF (AC-FT)	87760		535100		147000		
10 PERCENT EXCEEDS	184		892		260		
50 PERCENT EXCEEDS	123		103		55		
90 PERCENT EXCEEDS	54		57		33		

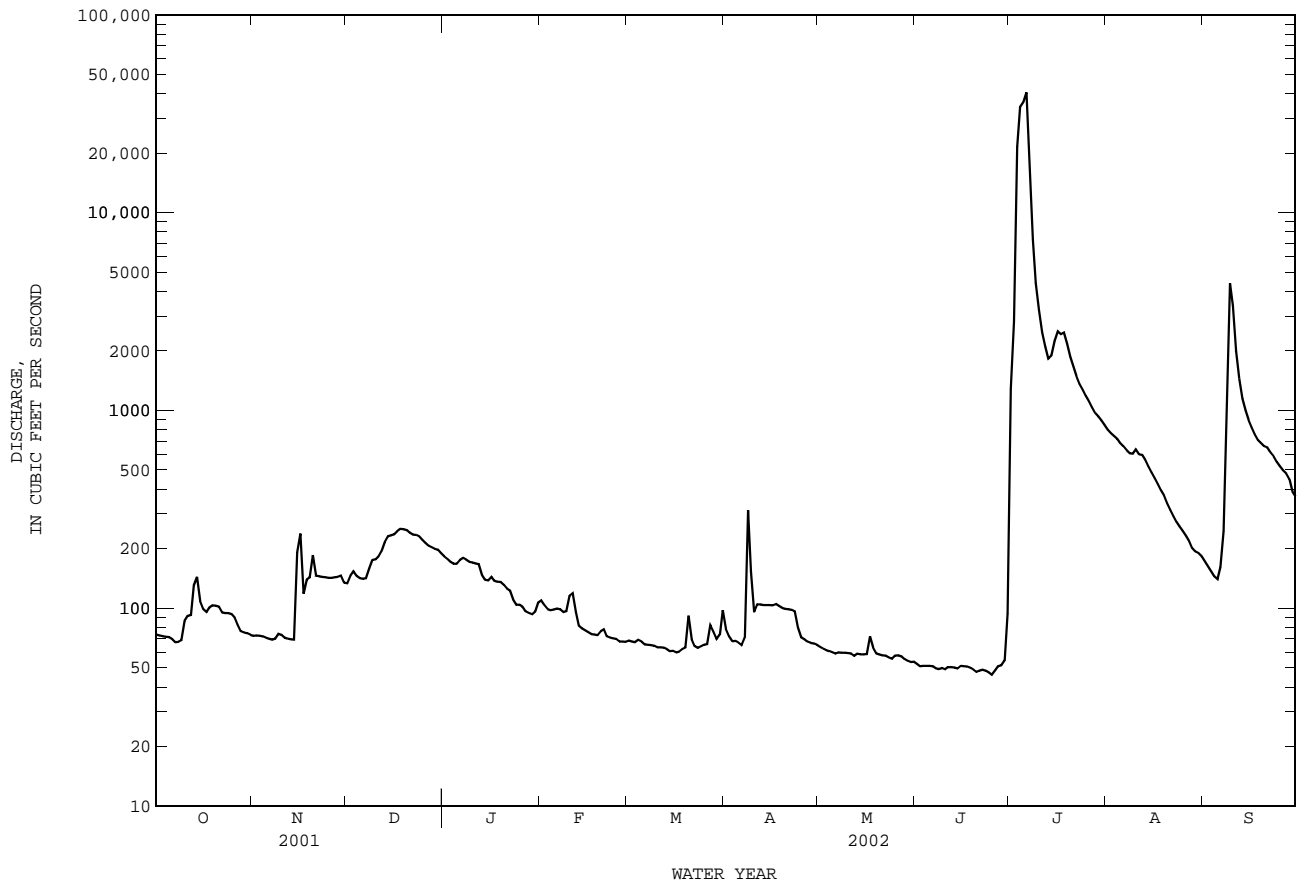
e Estimated

h See PERIOD OF RECORD paragraph.

c From rating curve extended above discharge measurements of 27,100 and 33,200 ft³/s.

a From floodmark.

08180700 Medina River near Macdona, TX--Continued



GUADALUPE RIVER BASIN

08180700 Medina River near Macdona, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: July 1998 to Sept. 2000.
 BIOCHEMICAL DATA: July 1998 to Sept. 2000.
 PESTICIDE DATA: July 1998 to Sept. 2000.
 SEDIMENT DATA: July 1998 to Sept. 2000.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Nov. 2, 2001 to Sept. 30, 2002.
 WATER TEMPERATURE: Nov. 2, 2001 to Sept. 30, 2002.

INSTRUMENTATION.--Water-quality monitor since Nov. 2001.

REMARKS.--Records good. Interruptions in the record were caused by malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 690 microsiemens/cm, Sept. 6, 2002; minimum, 166 microsiemens/cm, July 3, 2002.
 WATER TEMPERATURE: Maximum, 28.4°C, June 13, 2002; minimum daily, 9.6°C, Jan. 4, 2002.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 690 microsiemens/cm, Sept. 6; minimum, 166 microsiemens/cm, July 3.
 WATER TEMPERATURE: Maximum, 28.4°C, June 13; minimum, 9.6°C, Jan. 4.

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	512	510	511	489	487	488
2	---	---	---	575	570	572	511	503	508	494	488	491
3	---	---	---	578	573	575	506	499	503	495	492	493
4	---	---	---	581	577	578	516	504	511	500	483	498
5	---	---	---	582	578	579	521	516	518	501	491	499
6	---	---	---	584	579	581	522	520	521	500	493	497
7	---	---	---	585	581	582	526	520	523	495	492	494
8	---	---	---	586	582	584	522	512	516	497	492	495
9	---	---	---	587	578	583	513	501	506	493	486	492
10	---	---	---	585	581	583	501	496	498	496	490	494
11	---	---	---	585	582	583	496	492	494	507	477	493
12	---	---	---	587	583	584	492	487	489	500	476	490
13	---	---	---	589	584	586	487	480	483	515	486	503
14	---	---	---	589	586	587	480	472	476	521	508	513
15	---	---	---	587	342	538	475	471	473	548	489	517
16	---	---	---	446	351	412	473	470	472	536	502	518
17	---	---	---	443	400	411	473	472	472	534	520	526
18	---	---	---	491	408	449	473	469	472	532	508	529
19	---	---	---	511	487	501	471	469	470	539	503	528
20	---	---	---	487	413	449	471	469	469	546	510	530
21	---	---	---	483	432	465	476	470	471	538	532	536
22	---	---	---	485	436	456	475	468	473	544	538	541
23	---	---	---	500	485	497	475	469	474	555	542	549
24	---	---	---	500	498	499	477	470	474	562	555	560
25	---	---	---	501	499	500	477	474	475	565	559	563
26	---	---	---	503	501	502	480	474	477	566	551	563
27	---	---	---	503	501	502	482	479	480	573	565	570
28	---	---	---	502	500	501	484	480	482	583	572	577
29	---	---	---	502	500	501	485	471	482	600	580	584
30	---	---	---	510	502	506	485	480	484	587	570	584
31	---	---	---	---	---	---	487	484	485	582	571	576
MONTH	---	---	---	---	---	---	526	468	488	600	476	526

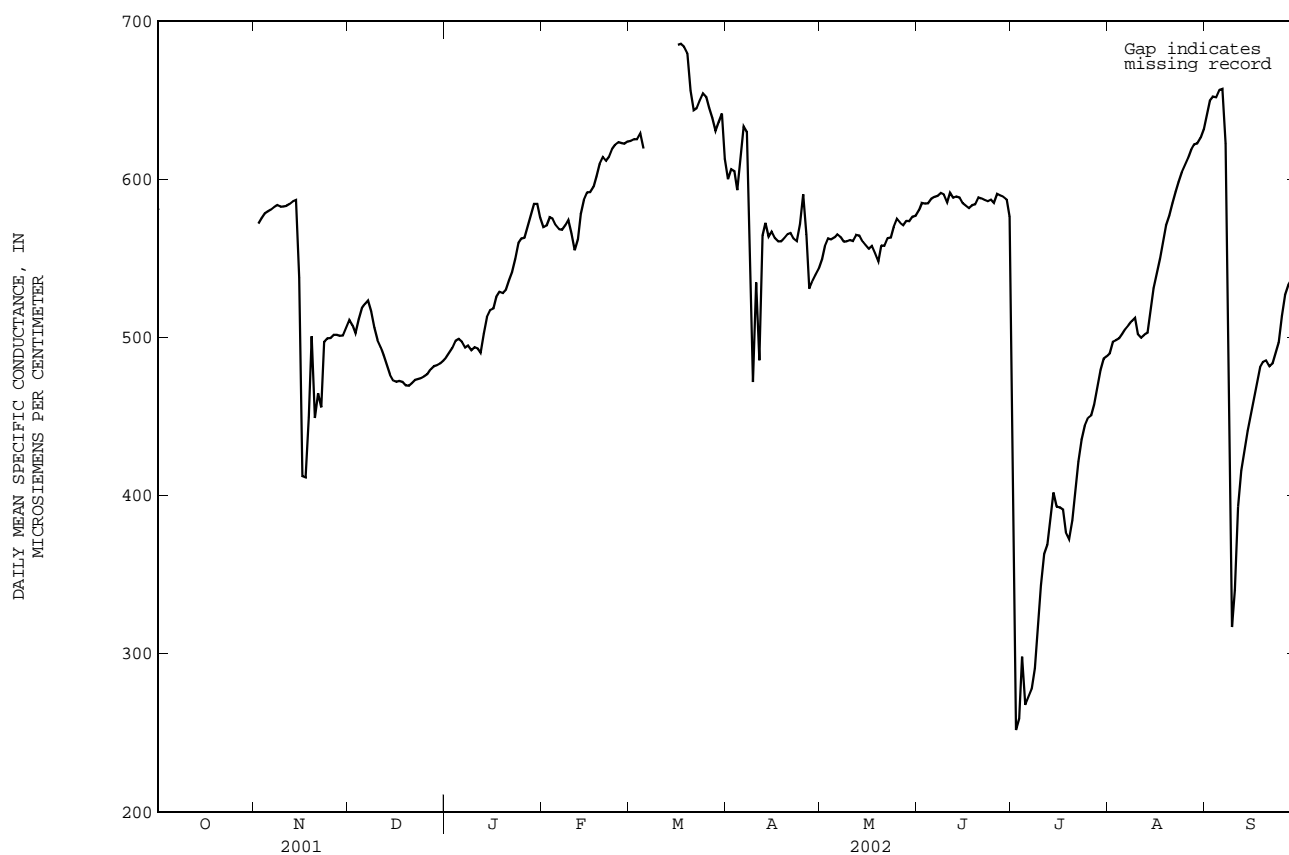
08180700 Medina River near Macdona, TX--Continued

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	572	566	570	628	620	624	604	596	600	556	545	549
2	573	566	571	632	620	625	615	599	606	565	555	558
3	578	573	576	630	620	625	614	596	605	565	560	563
4	577	572	575	634	619	629	599	589	593	565	559	562
5	573	568	571	634	602	619	628	598	612	567	559	563
6	570	567	568	---	---	---	639	628	633	569	558	565
7	569	567	568	---	---	---	638	599	630	569	557	563
8	573	568	571	---	---	---	639	435	536	567	555	560
9	576	572	574	---	---	---	528	429	472	567	555	561
10	572	558	566	---	---	---	546	509	535	573	551	562
11	558	552	555	---	---	---	509	469	486	575	552	561
12	570	554	562	---	---	---	587	502	564	572	560	565
13	586	569	578	---	---	---	583	557	572	570	558	564
14	592	585	587	---	---	---	571	556	564	569	551	561
15	594	588	592	---	---	---	570	563	567	568	544	558
16	597	589	592	687	683	685	577	550	563	562	545	556
17	601	593	595	688	684	686	562	559	561	575	535	558
18	607	597	602	687	682	684	593	558	561	565	545	553
19	617	606	610	683	662	680	580	534	563	560	537	548
20	617	612	614	688	608	656	569	541	565	564	549	558
21	621	609	612	651	637	644	569	564	566	574	545	558
22	620	608	614	650	641	645	567	553	563	581	551	563
23	626	617	619	655	643	650	597	557	561	573	555	563
24	627	619	622	659	645	654	613	562	572	581	563	570
25	630	620	623	657	645	652	599	582	590	582	566	575
26	627	617	623	647	643	645	602	524	565	588	561	572
27	628	617	622	644	634	639	543	520	531	581	550	571
28	629	620	624	635	624	631	541	509	536	581	566	574
29	---	---	---	643	632	636	551	533	540	589	563	573
30	---	---	---	644	630	641	560	535	544	590	559	576
31	---	---	---	630	598	613	---	---	---	586	569	577
MONTH	630	552	591	---	---	---	639	429	565	590	535	563
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	591	556	580	573	229	402	498	487	490	657	614	640
2	592	552	585	304	172	252	507	494	497	681	622	650
3	594	579	585	359	166	259	500	494	498	675	647	652
4	594	566	585	345	272	298	517	472	500	671	616	652
5	602	580	588	284	235	268	505	493	502	676	643	656
6	602	581	589	303	234	273	511	496	505	690	622	657
7	597	582	589	289	249	278	512	492	508	662	570	623
8	599	581	591	314	272	291	530	489	510	661	300	527
9	605	578	590	336	283	314	519	506	512	388	237	317
10	602	569	585	357	327	343	531	487	502	373	316	340
11	609	581	592	396	317	363	509	470	500	410	336	393
12	597	579	588	392	338	369	513	496	502	423	405	416
13	600	578	589	401	358	385	513	491	503	434	416	428
14	598	580	588	413	381	402	534	490	516	453	430	441
15	597	575	585	413	367	393	538	525	531	460	446	450
16	592	562	583	410	355	393	553	507	541	475	451	460
17	591	570	582	416	375	391	557	542	550	480	459	471
18	593	574	584	385	368	377	566	541	560	485	471	481
19	594	558	584	390	362	373	579	562	571	495	469	484
20	595	581	588	399	373	384	590	564	577	496	474	485
21	602	572	588	437	381	405	589	569	585	495	471	482
22	605	567	587	437	404	422	607	582	592	499	474	484
23	599	573	586	451	423	435	603	571	598	511	485	491
24	598	574	587	449	437	444	612	600	604	504	483	497
25	596	577	585	464	431	449	626	588	609	536	493	513
26	611	581	591	465	447	451	633	606	613	536	508	527
27	600	580	590	464	438	457	663	604	619	537	520	533
28	599	580	589	474	456	469	648	594	622	547	524	536
29	601	564	587	497	448	479	632	609	623	558	535	551
30	596	549	576	497	468	487	648	612	626	575	552	566
31	---	---	---	492	484	488	651	613	632	---	---	---
MONTH	611	549	587	573	166	380	663	470	552	690	237	513

GUADALUPE RIVER BASIN

08180700 Medina River near Macdona, TX--Continued



WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	14.5	13.8	14.0	12.1	11.2	11.5
2	---	---	---	21.3	20.2	20.8	14.9	14.5	14.6	11.2	10.7	10.9
3	---	---	---	21.7	20.9	21.2	15.5	14.9	15.1	10.7	9.9	10.3
4	---	---	---	21.4	20.6	20.9	17.2	15.5	16.2	10.4	9.6	10.0
5	---	---	---	20.9	20.0	20.5	18.5	17.2	17.8	11.3	10.4	10.9
6	---	---	---	20.0	19.1	19.6	19.5	18.5	19.0	11.5	10.7	11.2
7	---	---	---	19.4	18.6	19.0	19.8	19.4	19.6	11.7	10.6	11.2
8	---	---	---	20.0	18.9	19.5	19.8	17.7	18.8	12.3	10.9	11.6
9	---	---	---	20.1	19.5	19.7	17.7	16.1	16.8	13.0	11.8	12.4
10	---	---	---	19.8	19.1	19.5	16.1	15.1	15.4	13.7	12.6	13.1
11	---	---	---	20.3	19.5	19.9	15.3	14.8	15.0	13.7	13.2	13.4
12	---	---	---	20.5	19.9	20.2	15.4	15.0	15.2	13.5	12.6	13.2
13	---	---	---	20.8	20.1	20.4	15.4	14.8	15.1	13.4	12.5	13.1
14	---	---	---	20.7	20.4	20.5	14.8	14.2	14.5	13.6	12.7	13.2
15	---	---	---	20.6	20.4	20.5	15.2	14.6	14.9	13.4	12.3	12.9
16	---	---	---	20.6	19.9	20.2	15.9	15.2	15.6	14.0	12.9	13.5
17	---	---	---	19.9	19.8	19.9	15.7	15.1	15.4	15.4	14.0	14.6
18	---	---	---	20.4	19.8	20.1	15.4	14.8	15.2	15.2	14.7	14.9
19	---	---	---	20.4	19.0	19.9	15.2	14.3	14.8	15.4	14.8	15.0
20	---	---	---	19.0	17.4	18.0	14.3	13.6	13.8	14.8	14.1	14.5
21	---	---	---	17.4	16.7	16.9	14.1	13.2	13.6	14.7	14.0	14.3
22	---	---	---	17.2	16.3	16.8	15.0	13.9	14.4	15.7	14.7	15.0
23	---	---	---	18.0	17.2	17.6	14.7	14.0	14.3	16.9	15.7	16.3
24	---	---	---	18.0	17.3	17.7	14.1	13.3	13.5	17.2	15.9	16.8
25	---	---	---	17.3	16.4	16.9	13.5	13.0	13.3	15.9	14.6	15.3
26	---	---	---	18.4	17.1	17.7	13.2	12.4	12.7	14.6	13.8	14.1
27	---	---	---	18.4	16.7	17.8	13.0	11.9	12.4	14.5	13.6	14.2
28	---	---	---	16.7	14.4	15.5	13.4	12.6	13.0	16.3	14.5	15.4
29	---	---	---	14.4	13.6	13.9	13.2	12.5	12.8	18.0	16.3	17.2
30	---	---	---	14.1	13.1	13.6	12.8	12.2	12.4	18.7	18.0	18.4
31	---	---	---	---	---	---	12.3	11.8	12.1	18.8	17.6	18.5
MONTH	---	---	---	---	---	---	19.8	11.8	14.9	18.8	9.6	13.8

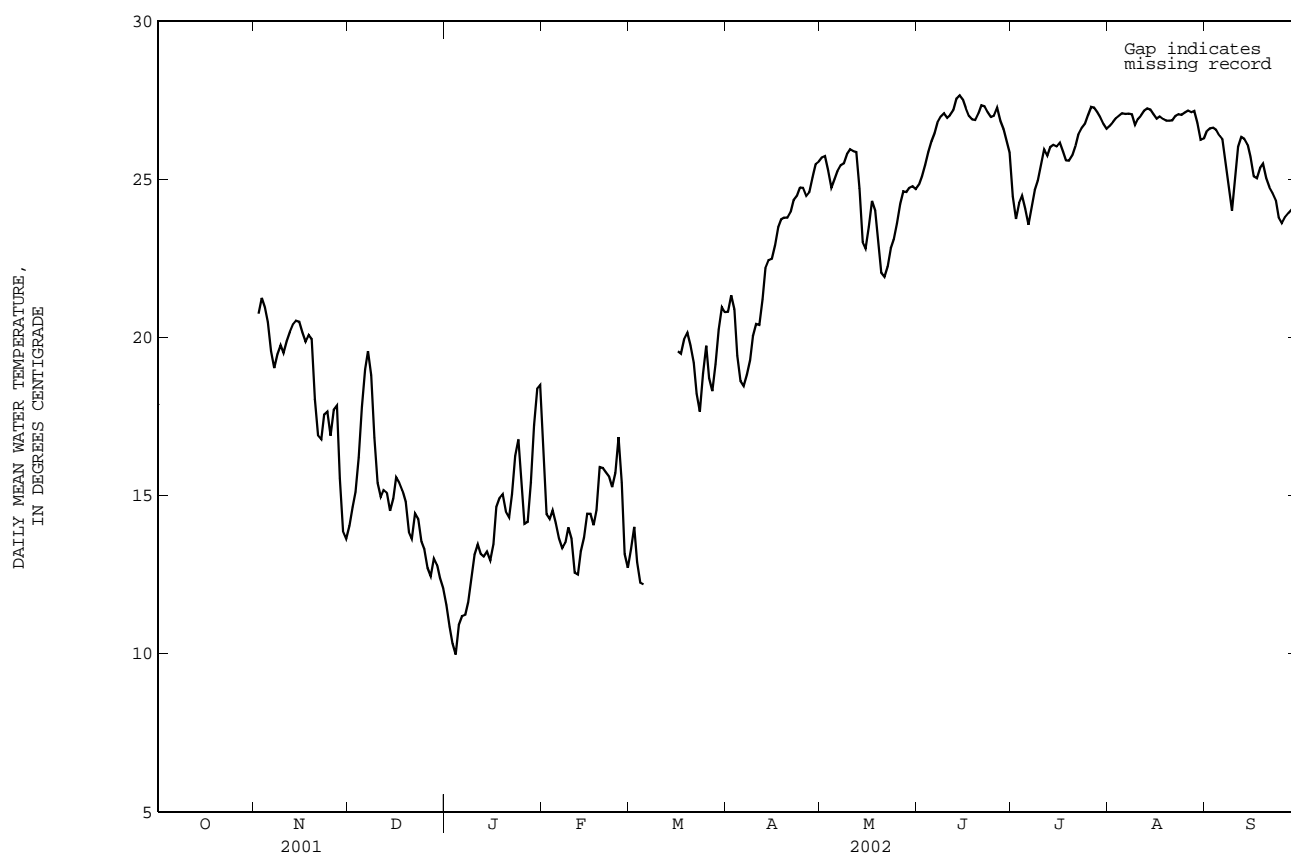
08180700 Medina River near Macdona, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	17.6	14.9	16.1	14.0	12.7	13.3	21.5	20.2	20.8	26.3	25.0	25.7
2	14.9	14.0	14.4	14.7	13.4	14.0	22.2	20.6	21.3	26.2	25.3	25.7
3	14.4	14.1	14.3	13.6	12.3	12.9	21.5	20.0	20.9	25.8	24.9	25.3
4	14.7	14.4	14.5	13.1	11.4	12.2	20.0	18.9	19.4	25.1	24.4	24.7
5	14.5	13.6	14.1	12.8	11.3	12.2	18.9	18.3	18.6	25.7	24.6	25.0
6	14.1	13.3	13.6	---	---	---	18.6	18.4	18.5	25.9	24.7	25.3
7	13.7	12.8	13.3	---	---	---	19.6	18.3	18.8	26.0	25.0	25.4
8	13.9	13.1	13.5	---	---	---	20.2	18.3	19.3	26.1	25.0	25.5
9	14.5	13.6	14.0	---	---	---	20.6	19.4	20.0	26.5	25.2	25.8
10	14.1	13.1	13.6	---	---	---	20.9	20.1	20.4	26.5	25.5	25.9
11	13.1	12.0	12.6	---	---	---	20.8	20.0	20.4	26.5	25.4	25.9
12	12.8	12.0	12.5	---	---	---	21.7	20.8	21.2	26.4	25.4	25.9
13	13.9	12.8	13.2	---	---	---	22.7	21.7	22.2	25.8	23.7	24.7
14	14.4	13.1	13.7	---	---	---	22.7	22.1	22.4	23.7	22.5	23.0
15	15.3	13.8	14.4	---	---	---	22.6	22.3	22.5	23.5	22.2	22.8
16	15.0	14.0	14.4	20.1	19.1	19.6	23.4	22.4	22.9	24.3	22.8	23.5
17	14.6	13.6	14.1	20.0	19.0	19.5	23.9	23.1	23.5	25.0	23.6	24.3
18	15.0	13.9	14.5	20.2	19.7	19.9	24.0	23.5	23.7	24.6	23.4	24.0
19	16.8	15.0	15.9	20.4	20.0	20.1	23.9	23.6	23.8	23.5	22.3	22.9
20	16.6	15.2	15.9	20.3	19.2	19.7	24.1	23.5	23.8	22.6	21.5	22.0
21	16.6	15.3	15.7	20.1	18.5	19.2	24.3	23.7	24.0	22.6	21.3	21.9
22	16.5	15.0	15.6	19.1	17.5	18.2	24.7	24.1	24.3	22.9	21.7	22.2
23	16.2	14.5	15.3	18.5	16.8	17.7	24.9	24.1	24.5	23.5	22.3	22.8
24	16.8	14.8	15.7	20.0	17.8	18.9	25.3	24.5	24.7	23.4	22.8	23.1
25	18.0	15.9	16.8	20.1	19.1	19.7	25.1	24.5	24.7	24.3	23.1	23.6
26	16.9	13.9	15.4	19.5	17.9	18.7	25.0	24.1	24.5	24.9	23.5	24.2
27	13.9	12.4	13.2	18.9	17.9	18.3	25.3	24.1	24.6	25.4	24.0	24.6
28	13.0	12.4	12.7	20.1	18.2	19.2	25.8	24.4	25.0	24.8	24.2	24.6
29	---	---	---	20.7	19.7	20.3	26.2	24.9	25.5	25.5	24.1	24.7
30	---	---	---	21.9	20.4	21.0	26.2	24.9	25.6	25.0	24.4	24.8
31	---	---	---	21.3	20.3	20.8	---	---	---	25.4	24.1	24.7
MONTH	18.0	12.0	14.4	---	---	---	26.2	18.3	22.4	26.5	21.3	24.3
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	25.6	24.2	24.8	25.7	23.2	24.5	27.1	26.2	26.7	26.8	26.2	26.5
2	25.9	24.4	25.1	24.4	23.4	23.7	27.2	26.4	26.8	26.9	26.2	26.6
3	26.2	24.8	25.4	25.3	22.8	24.2	27.5	26.5	26.9	26.9	26.3	26.6
4	26.6	25.4	25.9	25.0	24.1	24.5	27.5	26.6	27.0	26.8	26.3	26.6
5	27.0	25.6	26.2	24.4	23.8	24.1	27.5	26.8	27.1	26.6	26.0	26.4
6	27.1	25.9	26.5	24.0	23.1	23.6	27.6	26.6	27.1	26.5	25.9	26.3
7	27.6	26.3	26.8	24.7	23.7	24.1	27.6	26.6	27.1	26.4	25.1	25.5
8	27.7	26.5	27.0	25.2	24.2	24.7	27.4	26.6	27.1	25.1	24.3	24.7
9	27.8	26.6	27.1	25.4	24.4	25.0	27.2	26.3	26.7	24.8	23.5	24.0
10	27.5	26.5	26.9	25.9	25.1	25.5	27.4	26.4	26.9	25.7	24.1	24.9
11	27.6	26.6	27.0	26.3	25.6	25.9	27.4	26.6	27.0	26.7	25.5	26.0
12	27.8	26.6	27.2	26.2	25.3	25.8	27.7	26.7	27.2	27.0	25.8	26.3
13	28.4	26.9	27.6	26.3	25.7	26.0	27.7	26.8	27.2	26.8	25.7	26.3
14	28.3	27.1	27.6	26.4	25.8	26.1	27.6	26.7	27.2	26.6	25.5	26.1
15	28.2	27.0	27.5	26.3	25.8	26.0	27.4	26.8	27.1	26.4	25.4	25.7
16	28.0	26.5	27.3	26.5	25.9	26.2	27.1	26.7	26.9	25.5	24.9	25.1
17	27.7	26.4	27.0	26.2	25.6	25.9	27.3	26.7	27.0	25.4	24.8	25.0
18	27.7	26.2	26.9	25.9	25.2	25.6	27.2	26.5	26.9	25.8	25.1	25.3
19	27.6	26.2	26.9	26.2	25.0	25.6	27.1	26.5	26.9	25.6	25.3	25.5
20	27.8	26.6	27.1	26.3	25.3	25.7	27.1	26.5	26.9	25.4	24.6	25.0
21	28.2	26.7	27.3	26.6	25.6	26.1	27.2	26.4	26.9	25.2	24.2	24.8
22	27.9	26.8	27.3	27.1	25.9	26.4	27.3	26.6	27.0	24.9	24.2	24.6
23	27.8	26.5	27.1	27.3	26.1	26.6	27.4	26.6	27.1	24.6	24.0	24.3
24	27.8	26.2	27.0	27.6	26.1	26.7	27.4	26.6	27.0	24.2	23.4	23.8
25	27.8	26.3	27.0	27.9	26.3	27.0	27.5	26.6	27.1	24.1	23.1	23.6
26	28.1	26.7	27.3	28.1	26.6	27.3	27.5	26.7	27.2	24.2	23.4	23.8
27	27.4	26.4	26.9	27.9	26.7	27.3	27.5	26.6	27.1	24.4	23.4	23.9
28	27.1	26.3	26.6	27.7	26.5	27.1	27.4	26.7	27.2	24.4	23.6	24.0
29	26.6	25.9	26.2	27.4	26.4	27.0	27.3	26.3	26.8	24.4	23.7	24.1
30	26.2	25.6	25.8	27.2	26.2	26.7	26.5	25.9	26.2	24.7	23.9	24.3
31	---	---	---	27.2	26.0	26.6	26.6	25.9	26.3	---	---	---
MONTH	28.4	24.2	26.7	28.1	22.8	25.7	27.7	25.9	27.0	27.0	23.1	25.2

GUADALUPE RIVER BASIN

08180700 Medina River near Macdona, TX--Continued



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GUADALUPE RIVER BASIN

08180800 Medina River near Somerset, TX

LOCATION.--Lat 29°15'43", long 98°34'52", Bexar County, Hydrologic Unit 12100302, on left bank at downstream side of downstream bridge on State Highway 16, 2.0 mi upstream from Elm Creek, 5.0 mi downstream from Medio Creek, 5.2 mi northeast of Somerset, and 14.0 mi upstream from mouth.

DRAINAGE AREA.--967 mi², of which 634 mi² is above dam forming Medina Lake.

PERIOD OF RECORD.--Oct. 1970 to Sept. 1995, Sept. 1997 to current year.

Water-quality records.--Chemical data: July 1998 to Aug. 2000. Biochemical data: July 1998 to Aug. 2000. Pesticide data: July 1998 to Aug. 2000. Sediment data: July 1998 to Aug. 2000.

GAGE.--Water-stage recorder. Datum of gage is 493.56 ft above NGVD of 1929. Prior to June 16, 1993, at site 300 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in water year 1971, at least 10% of contributing drainage area has been regulated. 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 Medina Diversion Dam. There are several small diversions below Medina Diversion Dam.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	69	126	183	103	63	91	61	48	974	1070	243
2	71	68	135	180	105	64	78	60	47	5650	973	236
3	69	68	155	175	100	65	69	58	48	14800	918	231
4	68	68	153	169	99	66	65	57	47	40700	872	222
5	74	67	141	169	99	65	66	57	48	41700	821	214
6	73	67	135	169	100	63	66	56	46	e47400	777	218
7	70	65	133	178	100	60	69	55	45	e30700	735	304
8	63	64	140	175	101	62	340	56	44	e13900	694	1160
9	65	77	171	172	102	64	315	55	45	8220	662	6460
10	75	76	171	170	109	60	137	55	44	6000	718	5210
11	93	72	173	167	119	59	119	54	45	4600	685	2930
12	95	69	180	168	114	58	117	55	44	3910	664	2220
13	125	66	196	153	96	62	115	57	45	3440	634	1770
14	177	65	210	140	93	58	114	55	45	3140	571	1450
15	128	106	222	134	84	56	113	54	47	3750	529	1260
16	108	1020	225	140	79	56	110	53	47	3910	493	1120
17	102	163	227	137	75	58	110	62	46	4060	459	991
18	107	142	234	133	74	59	111	68	45	3960	433	874
19	104	138	237	132	76	59	110	57	45	3750	409	816
20	103	179	236	129	79	118	109	54	43	3290	385	772
21	103	156	229	125	81	110	106	53	43	2870	363	758
22	100	141	224	121	73	73	105	54	43	2560	e348	718
23	96	140	219	115	69	67	105	53	44	2310	e320	665
24	95	139	220	105	68	64	97	51	44	2090	e315	618
25	92	136	215	105	67	65	79	53	44	1910	e296	578
26	89	134	209	106	65	63	71	55	41	1740	290	542
27	84	133	202	99	64	74	68	56	41	e1550	279	516
28	76	136	198	96	63	83	66	56	42	e1400	267	493
29	74	137	195	95	---	73	64	53	46	e1310	262	436
30	72	132	193	94	---	70	63	50	54	1210	260	408
31	71	---	190	102	---	87	---	49	---	1130	249	---
TOTAL	2795	4093	5894	4336	2457	2104	3248	1722	1356	267934	16751	34433
MEAN	90.16	136.4	190.1	139.9	87.75	67.87	108.3	55.55	45.20	8643	540.4	1148
MAX	177	1020	237	183	119	118	340	68	54	47400	1070	6460
MIN	63	64	126	94	63	56	63	49	41	974	249	214
AC-FT	5540	8120	11690	8600	4870	4170	6440	3420	2690	531400	33230	68300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2002h, BY WATER YEAR (WY)

	MEAN	208.2	171.2	151.7	164.5	241.6	219.5	198.1	275.1	525.4	534.0	173.1	164.2
MAX	1284	648	549	751	2449	2326	1480	1663	6432	8643	1222	1148	
(WY)	1974	1977	1977	1992	1992	1992	1992	1992	1987	2002	1978	2002	
MIN	41.2	40.2	33.5	37.2	33.4	34.4	35.6	31.1	27.4	22.3	24.5	22.7	
(WY)	1989	1985	1985	1985	1971	1971	1971	1971	1990	1984	1984	1984	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1971 - 2002h

ANNUAL TOTAL	47845	347123		
ANNUAL MEAN	131.1	951.0	252.5	
HIGHEST ANNUAL MEAN			1033	1992
LOWEST ANNUAL MEAN			40.0	1984
HIGHEST DAILY MEAN	1140	Sep 6	47400	Jul 6 2002
LOWEST DAILY MEAN	31	Aug 15	41	Jun 26
ANNUAL SEVEN-DAY MINIMUM	33	Aug 12	43	Jun 22
MAXIMUM PEAK FLOW			c56000	Jul 6 2002
MAXIMUM PEAK STAGE			a42.19	Jul 6 2002
ANNUAL RUNOFF (AC-FT)	94900		688500	182900
10 PERCENT EXCEEDS	181		1180	469
50 PERCENT EXCEEDS	135		108	78
90 PERCENT EXCEEDS	46		53	41

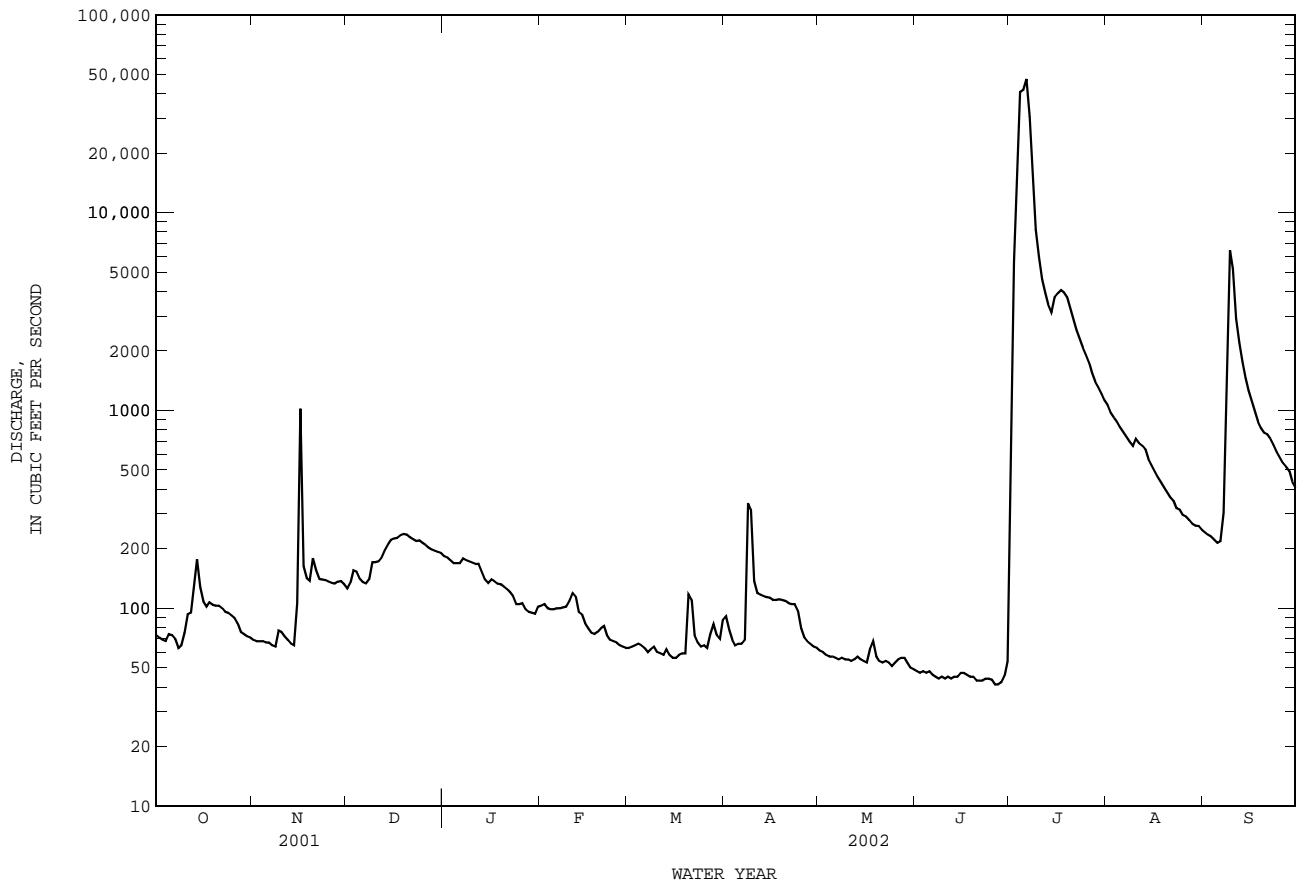
e Estimated

h See PERIOD OF RECORD paragraph.

c From rating curve extended above discharge measurement of 47,800 ft³/s.

a From floodmark.

08180800 Medina River near Somerset, TX--Continued



08180941 Government Canyon Creek Site 2 near Helotes, TX

LOCATION.-- Lat 29°32'21", long 98°45'05", Bexar County, Hydrologic Unit 12100302, on right bank of low water crossing, 0.50 mi upstream side of entrance to Government Canyon State Natural Area at Galm Road, 6.21 mi upstream of State Highway 1604.

DRAINAGE AREA.--12.4 mi².

PERIOD OF RECORD.--

CHEMICAL DATA: Dec. 1999 to current year.

BIOCHEMICAL DATA: Dec. 1999 to current year.

PESTICIDE DATA: Dec. 1999 to current year.

INSTURMENTATION.--Water stage recorder. Discharge-activated automatic sampler. Tipping bucket raingage. Satellite telemeter at station.

REMARKS.--Water-quality samples and associated discharge and precipitation data were collected for selected storm events.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PRECIP-ITATION DURA-TION OF STORM EVENT (MIN) (00117)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF (COL/ 100 ML) (31633)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	PRECIP-ITATION TOTAL INCHES/ STORM (82381)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	
JUL 02...	0800	158	151	7.9	28.0	50	E1300k	E16000k	8.2	77	28.4	1.46	1.31	
Date	Time	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00932)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	
JUL 02...	.1	3	2.37	2.8	2.15	E.1	6.57	116	106	.54	.010	.55	<.04	
Date	Time	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
JUL 02...	2.2	.59	1.6	.145	.019	<.02	E4n	5	.09	10	<.06	.2	E.03	
Date	Time	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
JUL 02...	<.8	.13	<10	2.3	<10	3	.13	1.3	.02	E.1	E1.9	.65	<1	
Date	Time	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	2,6-DI-ETHYL ANILINE WAT FLT GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC (UG/L) (46342)	ALPHA BHC, DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U (UG/L) (82674)
JUL 02...	<20	2	.03	<.006	<.006	<.004	<.005	E.005n	<.050	<.010	<.002	<.041	<.020	
Date	Time	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN, DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)
JUL 02...	<.005	<.006	<.018	<.003	E.003	<.006	<.005	<.02	<.002	<.009	<.005	<.003	<.004	

08180941 Government Canyon Creek Site 2 near Helotes, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)
JUL 02...	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01
Date	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)		
JUL 02...	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009		

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:

k -- Counts outside acceptable range
n -- Below the NDV

08180945 Leon Creek at Scenic Loop Road near Leon Springs, TX

LOCATION.--LAT 29°40'32", long 98°40'33", Bexar County, Hydrologic Unit 12100301, on right bank, upstream side of Scenic Loop Road, 2.97 mi upstream of Interstate Highway 10.

DRAINAGE AREA.-- 10.0 mi².

PERIOD OF RECORD.--

CHEMICAL DATA: Jan. 2001 to current year.

BIOCHEMICAL DATA: Jan. 2001 to current year.

PESTICIDE DATA: Jan. 2001 to current year.

INSTRUMENTATION.--Water stage recorder. Discharge-activated automatic sampler. Tipping bucket raingage. Satellite telemeter at station.

REMARKS.--Water-quality samples and associated discharge and precipitation data were collected for selected storm events.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	STORM WATER FLOW (MGD) (81395)	ELAPSED TIME OF STORM (HOURS) (00135)	PRECIP- ITATION DURA- TION OF STORM EVENT (MIN) (00117)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	PRECIP- ITATION TOTAL (MG/L AS CACO3) (82381)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	
JUL 01...	1400	--	--	--	--	--	--	5500	6900	--	--	--	--	
JUL 01-01	1400	189	7.9	105	7.0	1290	20	--	--	5.7	100	36.4	2.60	
Date		SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--	
JUL 01-01	1.61	.1	3	3.26	5.0	2.50	E.1	9.99	133	60	.18	.233	.41	
Date		NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L) (00556)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	BARIIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--	
JUL 01-01	<.04	1.5	.40	1.0	.134	.044	.03	.095	<7	4	.11	11	<.06	
Date		CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--	
JUL 01-01	<.1	<.04	<.8	.16	<10	1.4	<10	2	<.08	1.5	E.01	.5	E1.3	
Date		NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--	
JUL 01-01	.37	<1	.16	<.006	<.006	<.004	<.005	.009	<.050	<.010	<.002	<.041	<.020	

08180945 Leon Creek at Scenic Loop Road near Leon Springs, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA- ZINE, WATER, FLTRD DISS, 0.7 U REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, FLTRD DISS, 0.7 U REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-01	<.005	<.006	<.018	<.003	<.006	<.007	<.005	<.02	<.002	<.009	<.005	<.003	<.004
Date	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FLTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-01	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01
Date	PRO- CHLOR, WATER, FLTRD DISS, 0.7 U GF, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, 0.7 U GF, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)		
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009		

Remark codes used in this report:

< -- Less than

E -- Estimated value

08180947 Leon Creek at Hausman Road at San Antonio, TX

LOCATION.--Lat 29° 34' 19", Long 98°37'09", Bexar County, Hydrologic Unit 12100302, on right bank downstream side of Hausman Road, 1.45 mi downstream of State Highway 1604.

DRAINAGE AREA.--42.5 mi².

PERIOD OF RECORD.--

CHEMICAL DATA: Jan. 2001 to current year.

BIOCHEMICAL DATA: Jan. 2001 to current year.

PESTICIDE DATA: Jan. 2001 to current year.

INSTRUMENTATION.--Automatic sampler.

REMARKS.-- Water-quality samples were collected for selected storm events.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	SPE- CIFIC CON- DUCT- ANCE	PH WATER WHOLE FIELD (STAND- ARD	ELAPSED TIME OF STORM	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL)	E COLI, MTEC MF WATER (COL/ 100 ML)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML)	HARD- NESS TOTAL (MG/L CACO3)	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	SODIUM PERCENT
		(US/CM (00095)	(00400)	(00135)	(00340)	(31633)	(31673)	(00900)	(00915)	(00925)	(00930)	(00931)	(00932)
OCT 13...	0005	--	--	--	--	20000	77000	--	--	--	--	--	--
OCT 13-13	0016	174	7.1	4.8	30	--	--	--	--	--	--	--	--
NOV 15...	0005	--	--	--	--	E1200k	9400	--	--	--	--	--	--
NOV 15-15	0555	165	7.2	13.8	20	--	--	--	--	--	--	--	--
APR 07...	2045	--	--	--	--	<11000k	<73000k	--	--	--	--	--	--
APR 07-07	2048	135	8.1	2.5	50	--	--	--	--	--	--	--	--
JUN 30-30	1500	153	8.0	7.0	20	--	--	73	25.6	2.24	2.84	.1	7
30...	1503	--	--	--	--	8300	53000	--	--	--	--	--	--

[illegible][illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

[illegible]

Guadalupe River Basin

08180947 Leon Creek at Hausman Road at San Antonio, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ENDRIN	EPTC	ETHAL-	ETHO-	FONOFOS	HEPTA-	HEPTA-	LINDANE	LINDANE	LIN-	MALA-	METO-	METRI-							
	WATER	WATER	FLUR-	PROP			CHLOR		URON	THION,		LACHLOR	BUZIN							
	UNFLTRD	FLTRD	ALIN	WATER			EPOXIDE		WATER	DIS-		WATER	SENCOR							
	REC	GF, REC	GF, REC	GF, REC	REC	TOTAL	TOTAL	TOTAL	DIS-	GF, REC	DIS-	DISSOLV	WATER							
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)							
	(39390)	(82668)	(82663)	(82672)	(04095)	(39410)	(39420)	(39340)	(39341)	(82666)	(39532)	(39415)	(82630)							
OCT 13...	--	--	--	--	--	--	--	--	--	--	--	--	--							
OCT 13-13	<.002	--	--	--	--	<.002	<.001	<.0007	--	--	--	--	--							
NOV 15...	--	--	--	--	--	--	--	--	--	--	--	--	--							
NOV 15-15	<.002	--	--	--	--	<.002	<.001	<.0007	--	--	--	--	--							
APR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--							
APR 07-07	<.002	--	--	--	--	<.002	<.001	<.0007	--	--	--	--	--							
JUN 30-30	--	<.002	<.009	<.005	<.003	--	--	--	<.004	<.035	<.027	<.013	<.006							
JUN 30...	--	--	--	--	--	--	--	--	--	--	--	--	--							
Date	MOL-	NAPROP-	P,P'	PARA-	METHYL	PEB-	PENDI-	PHORATE	PRO-	PRO-	PRO-	PRO-	PRON-							
	INATE	AMIDE			PARA-	ULATE	METH-		METON,	PANIL	PARGITE	AMIDE								
	WATER	WATER			THION	WATER	ALIN		WATER,	CHLOR,	WATER	AMIDE								
	FLTRD	FLTRD	DDE	THION,	WAT FLT	FILTRD	WAT FLT	FLTRD	WATER,	WATER,	FLTRD	FLTRD	FLTRD							
	0.7 U	0.7 U		DIS-	0.7 U	0.7 U	0.7 U	0.7 U	DISS,	DISS,	0.7 U	0.7 U	0.7 U							
	GF, REC	GF, REC	DISSOLV	SOLVED	GF, REC	GF, REC	GF, REC	GF, REC	REC	REC	GF, REC	GF, REC	GF, REC							
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)							
	(82671)	(82684)	(34653)	(39542)	(82667)	(82669)	(82683)	(82664)	(04037)	(04024)	(82679)	(82685)	(82676)							
OCT 13...	--	--	--	--	--	--	--	--	--	--	--	--	--							
OCT 13-13	--	--	--	--	--	--	--	--	--	--	--	--	--							
NOV 15...	--	--	--	--	--	--	--	--	--	--	--	--	--							
NOV 15-15	--	--	--	--	--	--	--	--	--	--	--	--	--							
APR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--							
APR 07-07	--	--	--	--	--	--	--	--	--	--	--	--	--							
JUN 30-30	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01	<.010	<.011	<.02	<.004							
JUN 30...	--	--	--	--	--	--	--	--	--	--	--	--	--							
Date	SI-	TEBU-	TER-	TER-	THIO-	TOX-	TRIAL-	TRI-	APHENE,	WATER	FLUR-	WAT FLT								
														MAZINE,	THIURON	BACIL	BUFOS	BENCARB	LATE	ALIN
														WATER,	WATER	WATER	WATER	WATER	WATER	WATER
	FLTRD	FLTRD	FLTRD	FLTRD	FLTRD	FLTRD	FLTRD	FLTRD	FLTRD	FLTRD	FLTRD	FLTRD	FLTRD							
	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U							
	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC	GF, REC							
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)							
	(04035)	(82670)	(82665)	(82675)	(82681)	(39400)	(82678)	(82661)												
OCT 13...	--	--	--	--	--	--	--	--	--	--	--	--	--							
OCT 13-13	--	--	--	--	--	--	<1	--	--	--	--	--	--							
NOV 15...	--	--	--	--	--	--	--	--	--	--	--	--	--							
NOV 15-15	--	--	--	--	--	--	<1	--	--	--	--	--	--							
APR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--							
APR 07-07	--	--	--	--	--	--	<1	--	--	--	--	--	--							
JUN 30-30	<.005	<.02	<.034	<.02	<.005	--	<.002	<.009	--	--	--	--	--							
JUN 30...	--	--	--	--	--	--	--	--	--	--	--	--	--							

Remark codes used in this report:

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

Value qualifier codes used in this report:

k -- Counts outside acceptable range

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08181050 Leon Creek at Prue Road at San Antonio, TX

LOCATION.--Lat 29°32'29", long 98°37'54", Bexar County, Hydrologic Unit 12100302, on left bank on upstream side of Prue Road, 5.22 mi downstream of State Highway 1604.

DRAINAGE AREA.--58.20 mi².

PERIOD OF RECORD.--

CHEMICAL DATA: Dec. 2000 to current year.

BIOCHEMICAL DATA: Dec. 2000 to current year.

PESTICIDE: Dec. 2000 to current year.

INSTRUMENTATION.--Water stage recorder. Discharge-activated automatic sampler. Tipping bucket raingage. Satellite telemeter at station.

REMARKS.--Water-quality samples and associated discharge and precipitation data were collected for selected storm events.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	SPE- CIFIC CON- DUCT- ANCE (US/CM (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	STORM WATER FLOW (MGD) (81395)	ELAPSED TIME OF STORM (HOURS) (00135)	PRECIP- ITATION DURA- TION OF STORM EVENT (MIN) (00117)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF (COL/ 100 ML) (31633)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	PRECIP- ITATION TOTAL (INCHES/ STORM (82381)	HARD- NESS TOTAL (MG/L AS CAC03) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
OCT 13...	0110	--	--	--	--	--	--	E100000k	81000	--	--	--	--
OCT 13-13	0305	154	7.2	129	6.4	465	20	--	--	2.8	--	--	--
NOV 15...	0935	--	--	--	--	--	--	57000	E22000k	--	--	--	--
NOV 15-15	0937	155	7.3	112	3.5	690	50	--	--	2.0	--	--	--
NOV 15-15	1331	--	--	149	1.5	--	30	--	--	--	--	--	--
APR 07...	2140	--	--	--	--	--	--	<80000k	<85000k	--	--	--	--
APR 07-07	2200	122	8.1	18.1	1.8	90.0	30	--	--	.75	--	--	--
JUN 30-30	1530	138	8.0	36.5	7.0	375	30	--	--	.77	66	24.3	1.33
30...	1534	--	--	--	--	--	--	44000	80000	--	--	--	--

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

[illegible][illegible]

Guadalupe River Basin

08181050 Leon Creek at Prue Road at San Antonio, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

[illegible][illegible][illegible]

08181050 Leon Creek at Prue Road at San Antonio, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TOX-APHENE, TOTAL (UG/L) (39400)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT 13...	--	--	--	--	--	--	--	--	--	--	--
OCT 13-13	--	--	--	--	--	--	--	--	<1	--	--
NOV 15...	--	--	--	--	--	--	--	--	--	--	--
NOV 15-15	--	--	--	--	--	--	--	--	<1	--	--
NOV 15-15	--	--	--	--	--	--	--	--	<1	--	--
APR 07...	--	--	--	--	--	--	--	--	--	--	--
APR 07-07	--	--	--	--	--	--	--	--	<1	--	--
JUN 30-30	<.011	<.02	<.004	.008	<.02	<.034	<.02	<.005	--	<.002	<.009
JUN 30...	--	--	--	--	--	--	--	--	--	--	--

Remark codes used in this report:

< -- Less than

E -- Estimated value

Value qualifier codes used in this report:

k -- Counts outside acceptable range

GUADALUPE RIVER BASIN

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.

WATER-DISCHARGE RECORDS

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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation. 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. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1923, 13.7 ft in 1927, from information by local resident.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	431	e9.0	0.00
2	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	798	e8.5	0.00
3	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	364	e8.0	0.00
4	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00	e420	e7.0	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	229	e6.0	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e150	5.3	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	e180	4.1	1.6
8	0.00	0.00	7.5	0.00	0.00	0.00	5.2	0.00	0.00	e200	3.6	7.3
9	0.00	0.08	7.6	0.00	0.00	0.00	0.35	0.00	0.00	e135	3.5	38
10	0.00	0.00	3.4	0.00	0.00	0.00	0.00	0.00	0.00	88	2.8	27
11	0.00	0.00	5.6	0.00	0.00	0.00	0.00	0.00	0.00	73	2.5	15
12	0.23	0.00	5.4	0.00	0.00	0.00	0.00	0.00	0.00	62	1.8	9.5
13	9.7	0.00	3.4	0.00	0.00	0.00	0.00	0.00	0.00	64	1.6	5.6
14	0.12	0.00	2.2	0.00	0.00	0.00	0.00	0.00	0.00	50	1.3	3.6
15	0.00	22	2.1	0.00	0.00	0.00	0.00	0.00	0.00	90	1.0	2.6
16	0.00	17	1.9	0.00	0.00	0.00	0.05	0.00	0.00	95	0.84	1.8
17	0.00	15	1.0	0.00	0.00	0.00	0.00	0.23	0.00	127	0.63	1.5
18	0.00	13	0.72	0.00	0.00	0.00	0.00	0.00	0.00	126	0.47	1.1
19	0.00	5.3	0.56	0.00	0.00	0.07	0.00	0.00	0.00	108	0.29	1.5
20	0.00	1.7	0.13	0.00	0.00	0.0	0.00	0.00	0.00	89	0.03	0.83
21	0.00	0.24	0.05	0.00	0.00	0.00	0.00	0.00	0.00	75	0.00	0.45
22	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00	60	0.00	0.25
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51	0.00	0.06
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e38	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e35	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.9	0.00	e25	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e20	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e11	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	e11	0.19	0.00
30	0.00	0.00	0.00	0.00	---	0.14	0.00	0.00	2.2	e10	0.07	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	e10	0.00	---
TOTAL	10.05	74.32	41.97	0.00	0.00	0.21	6.13	2.13	2.20	4225	68.52	117.69
MEAN	0.324	2.477	1.354	0.000	0.000	0.007	0.204	0.069	0.073	136.3	2.210	3.923
MAX	9.7	22	7.6	0.00	0.00	0.14	5.2	1.9	2.2	798	9.0	38
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10	0.00	0.00
AC-FT	20	147	83	0.00	0.00	0.4	12	4.2	4.4	8380	136	233

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2002, BY WATER YEAR (WY)

MEAN	7.274	3.309	3.702	1.995	3.512	3.795	3.083	6.594	14.19	7.479	0.894	1.881
MAX	93.6	33.3	79.0	31.0	66.3	32.3	40.0	66.6	142	136	13.5	36.1
(WY)	1999	2001	1992	1992	1992	1985	1973	1992	1987	2002	1971	1973
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1979	1971	1971	1969	1971	1971	1983	1989	1980	1969	1968	1969

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1968 - 2002

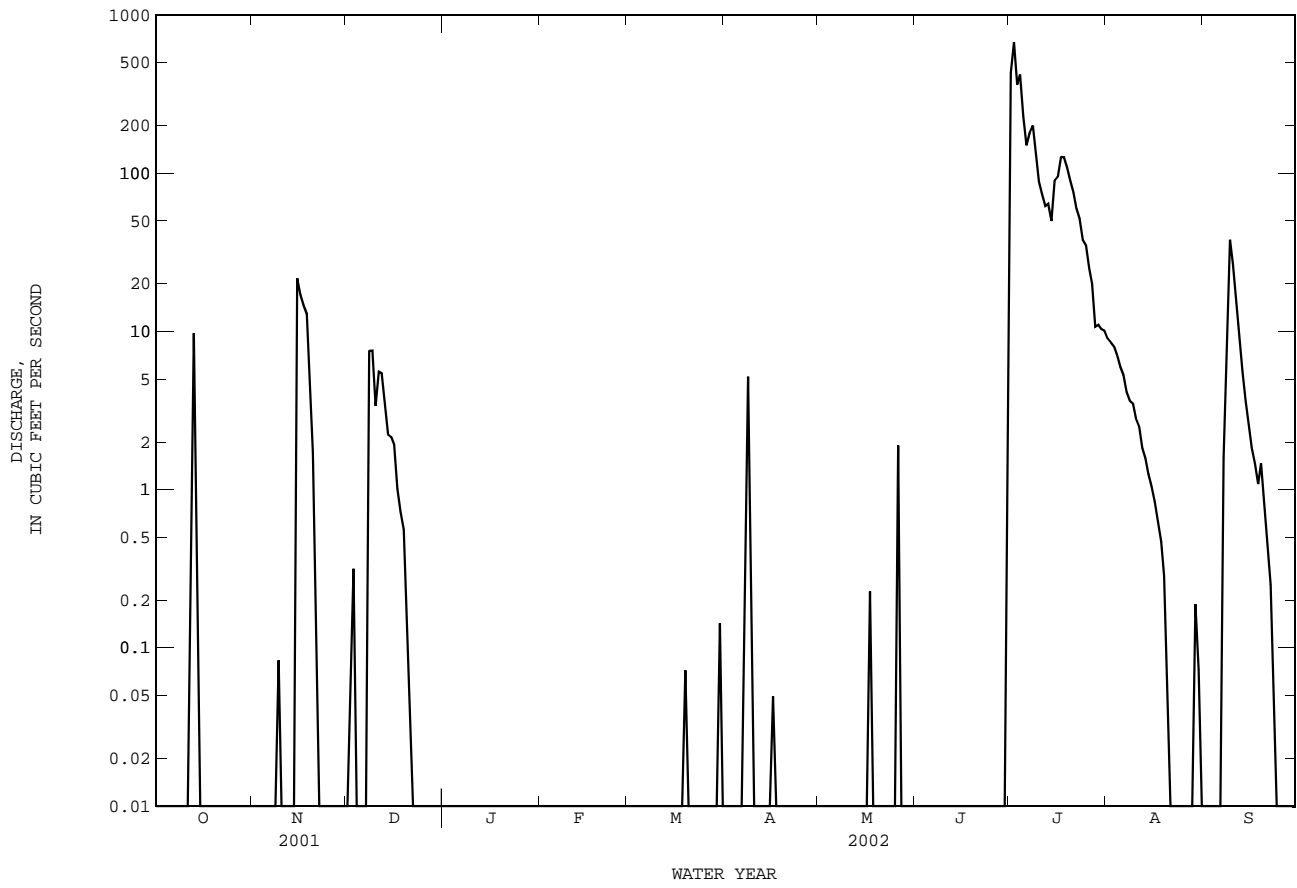
ANNUAL TOTAL	1460.32	4548.22	
ANNUAL MEAN	4.001	12.46	4.865
HIGHEST ANNUAL MEAN			28.3
LOWEST ANNUAL MEAN			0.003
HIGHEST DAILY MEAN	65 Sep 6	798 Jul 2	1350 Oct 18 1998
LOWEST DAILY MEAN	0.00 Jun 3	0.00 Oct 1	0.00 Jun 30 1968
ANNUAL SEVEN-DAY MINIMUM	0.00 Jun 3	0.00 Oct 1	0.00 Jul 4 1968
MAXIMUM PEAK FLOW		c10900 Jul 2	c12600 Oct 18 1998
MAXIMUM PEAK STAGE		a13.76 Jul 2	a15.21 Oct 18 1998
ANNUAL RUNOFF (AC-FT)	2900	9020	3520
10 PERCENT EXCEEDS	14	10	7.1
50 PERCENT EXCEEDS	0.32	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

c From rating curve extended above discharge measurement of 4,960 ft³/s.

a From floodmark.

08181400 Helotes Creek at Helotes, TX--Continued



GUADALUPE RIVER BASIN

08181400 Helotes Creek at Helotes, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: May 1969 to current year.

BIOCHEMICAL DATA: May 1969 to current year.

PESTICIDE DATA: May 1969 to June 1981, Oct. 1984 to current year.

SEDIMENT DATA: Oct. 1968 to Sept. 1973.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CAC03) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)
JUL 01... 02...	1045 0930	77 7110	376 155	8.0 8.0	<10 180	E1800k 4000	6700 23000	210 79	62.9 27.3	13.1 2.61	14.1 1.46	.4 .1	13 4
Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
JUL 01... 02...	1.95 2.32	31.0 4.2	28.3 2.38	E.1 <.1	10.8 4.94	301 103	<20 1780	.38 .27	.008 .011	.39 .28	<.04 .04	1.0 10	-- 9.7
Date	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM WATER UNFLTRD (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
JUL 01... 02...	-- .64	.35 .68	.61 9.7	.041 1.22	.013 .025	<.02 E.01	<7 <7	2 3	.09 .13	25 9	<.06 <.06	<.1 .5	<.04 <.04
Date	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
JUL 01... 02...	<.8 <.8	.20 .14	<10 E20	1.6 .9	12 16	2 28	<.08 E.07	1.2 1.9	<.01 .09	.7 .4	<2.0 14.9	.78 .55	<1 <1
Date	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER, FLTRD (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC (UG/L) (46342)	ALPHA BHC, DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER, FLTRD (UG/L) (82680)	CARBO-FURAN WATER, FLTRD (UG/L) (82674)
JUL 01... 02...	E20 60	1 <1	.37 .14	<.006 <.006	<.006 <.006	<.004 <.004	<.005 <.005	E.005n .014	<.050 <.050	<.010 <.010	<.002 <.002	E.009 E.025	<.020 <.020
Date	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)
JUL 01... 02...	<.005 <.005	<.006 <.006	<.018 <.018	<.003 <.003	<.041 <.010	.011 .007	<.005 <.005	<.02 <.02	<.002 <.002	<.009 <.009	<.005 <.005	<.003 <.003	<.004 <.004

08181400 Helotes Creek at Helotes, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)
JUL													
01...	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01
02...	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01
Date	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)		
JUL													
01...	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009		
02...	<.010	<.011	<.02	<.004	.020	<.02	<.034	<.02	<.005	<.002	<.009		

Remark codes used in this report:

< -- Less than

E -- Estimated value

Value qualifier codes used in this report:

k -- Counts outside acceptable range

n -- Below the NDV

GUADALUPE RIVER BASIN

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.

PERIOD OF RECORD.--Oct. 1984 to current year.

Water-quality records.--Chemical data: Jul. 1984 to Sept. 2000. Biochemical data: Jul. 1984 to Oct. 1997. Pesticide data: Aug. 1995 to Oct. 1997. Specific conductance: Sept. 1984 to Sept. 2000. pH: Apr. 1989 to Sept. 2000. Water temperature: Sept. 1984 to Sept. 2000. Dissolved oxygen: Apr. 1989 to Sept. 2000.

GAGE.--Water-stage recorder. Datum of gage is 573.49 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	7.0	15	11	7.7	7.6	6.7	3.8	2.6	2150	13	9.5
2	5.3	6.9	33	11	7.5	7.3	6.7	3.1	2.1	20500	12	8.7
3	5.6	7.3	36	11	7.5	6.9	6.5	3.4	2.0	9420	11	8.4
4	5.1	7.3	24	11	7.5	6.9	6.7	3.0	2.1	12900	11	8.3
5	5.2	7.3	19	13	9.5	7.2	6.4	3.2	2.0	e8890	10	8.5
6	5.2	6.2	16	12	9.4	7.2	6.5	3.1	2.1	2790	10	8.9
7	5.3	5.8	14	11	8.3	7.2	23	3.2	2.1	986	9.8	335
8	5.1	6.2	41	11	7.6	7.3	324	3.4	2.3	529	9.8	1970
9	6.2	91	27	11	7.5	7.0	11	3.4	2.5	247	9.7	2380
10	6.2	14	22	11	7.4	6.6	8.2	3.3	2.4	140	9.5	644
11	4.9	9.9	21	10	7.4	6.8	6.9	3.0	2.6	87	9.2	74
12	6.1	9.0	20	9.9	7.3	7.5	5.8	3.0	2.0	59	9.3	34
13	320	8.8	17	9.8	7.5	7.3	5.0	3.3	1.8	40	8.9	25
14	140	9.0	16	9.5	7.6	7.5	4.7	3.3	2.3	37	9.2	21
15	21	518	49	9.3	7.5	7.2	4.6	2.7	2.0	315	9.2	26
16	14	4090	19	9.3	7.6	7.3	5.3	2.5	1.2	709	8.5	22
17	12	122	15	9.1	7.5	6.4	5.3	11	1.3	165	7.9	19
18	11	41	15	9.0	7.6	6.0	5.2	6.1	1.3	154	7.6	17
19	9.8	32	14	8.7	7.6	34	6.7	3.7	1.1	95	7.1	34
20	9.4	33	14	8.6	7.5	48	6.4	2.6	0.88	48	6.6	40
21	9.0	23	13	8.5	7.6	10	5.8	2.8	1.0	32	6.1	31
22	8.6	20	13	8.6	7.4	7.1	5.2	2.6	1.1	24	6.3	20
23	8.3	18	12	8.7	7.5	5.8	4.8	2.5	1.1	20	6.9	17
24	8.3	16	12	8.9	7.5	5.8	4.7	3.1	1.4	17	6.5	16
25	7.9	16	12	8.6	7.3	5.9	4.4	2.5	1.7	16	6.0	15
26	7.7	16	12	8.3	7.0	6.0	4.6	30	2.2	15	5.7	15
27	7.6	16	12	8.2	7.2	6.0	4.3	9.9	2.2	14	5.7	14
28	6.8	30	12	8.0	7.4	5.3	3.6	5.5	2.4	14	5.6	14
29	7.3	20	12	8.5	---	5.8	3.7	4.7	5.0	14	50	13
30	7.5	15	11	8.2	---	6.8	3.7	3.6	74	13	17	12
31	6.6	---	11	8.1	---	7.4	---	2.9	---	13	11	---
TOTAL	688.5	5221.7	579	298.8	213.9	281.1	506.4	144.2	130.78	60453	316.1	5860.3
MEAN	22.21	174.1	18.68	9.639	7.639	9.068	16.88	4.652	4.359	1950	10.20	195.3
MAX	320	4090	49	13	9.5	48	324	30	74	20500	50	2380
MIN	4.9	5.8	11	8.0	7.0	5.3	3.6	2.5	0.88	13	5.6	8.3
AC-FT	1370	10360	1150	593	424	558	1000	286	259	119900	627	11620

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 2002, BY WATER YEAR (WY)

	MEAN	79.84	30.39	42.72	18.40	34.38	26.60	21.88	56.89	123.8	126.1	15.68	26.14
MAX	942	176	575	116	355	192	82.6	356	824	1950	87.2	195	
(WY)	1999	2001	1992	1992	1992	1992	1991	1992	1987	2002	2001	2002	
MIN	2.80	3.18	2.89	3.76	5.93	5.11	3.69	2.14	2.72	2.37	1.94	1.97	
(WY)	1997	2000	2000	1997	1989	1996	1995	1996	1996	2001	1989	1989	

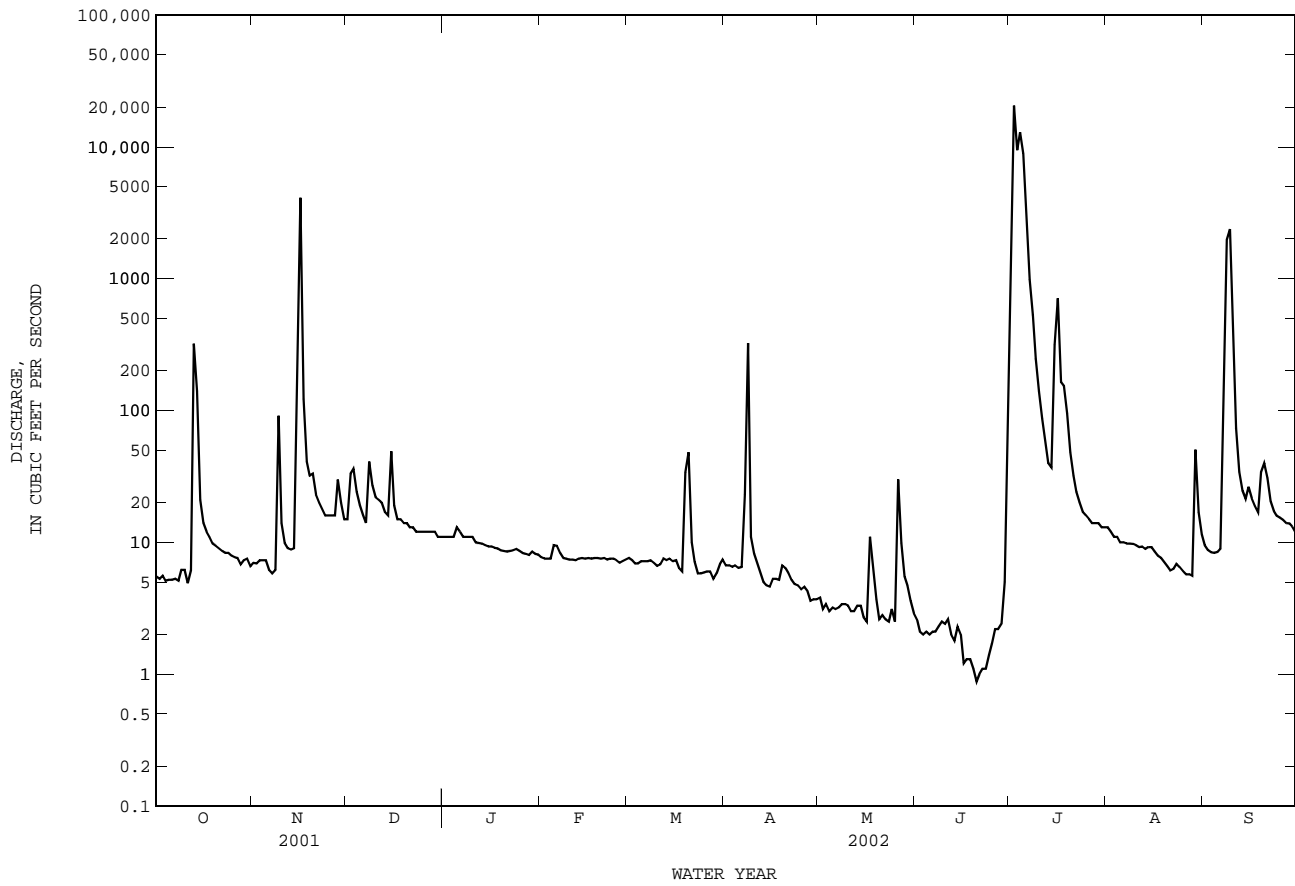
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1985 - 2002	
ANNUAL TOTAL	15539.1		74693.78			
ANNUAL MEAN	42.57		204.6		50.35	
HIGHEST ANNUAL MEAN					205	
LOWEST ANNUAL MEAN					6.22	
HIGHEST DAILY MEAN	4090	Nov 16	20500	Jul 2	20500	Jul 2 2002
LOWEST DAILY MEAN	1.1	Aug 24	0.88	Jun 20	0.52	Sep 15 1997
ANNUAL SEVEN-DAY MINIMUM	1.4	Aug 10	1.1	Jun 17	0.78	Aug 1 1996
MAXIMUM PEAK FLOW			45600	Jul 2	i93300	Oct 17 1998
MAXIMUM PEAK STAGE			27.23	Jul 2	a29.31	Oct 17 1998
ANNUAL RUNOFF (AC-FT)	30820		148200		36480	
10 PERCENT EXCEEDS	31		40		36	
50 PERCENT EXCEEDS	10		8.3		7.7	
90 PERCENT EXCEEDS	2.1		3.0		2.7	

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08181480 Leon Creek at Interstate Highway 35 at San Antonio, TX--Continued



GUADALUPE RIVER BASIN

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.--1,317 mi², of which 634 mi² is above dam forming Medina Lake.

PERIOD OF RECORD.--Oct. 1929 to Dec. 1930, July 1939 to current year. Oct. 1929 to Dec. 1930, records below about 50 ft³/s in connection with seepage investigation, published as "at Losoya". Published as "near San Antonio" July 1939 to Sept. 1970.
 Water-quality records.--Chemical data: June 1965 to Sept. 2000. Biochemical data: June 1965 to Sept. 2000. Pesticide data: Apr. 1971 to Sept. 1981, Dec. 1992 to Mar. 1998. Specific conductance: Jan. 1987 to Sept. 2000. pH: Jan. 1987 to Sept. 2000. Water temperature: Jan. 1987 to Sept. 2000. Dissolved oxygen: Jan. 1987 to Sept. 2000.

REVISED RECORDS.--WSP 1562: 1957. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 439.03 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Oct. 1929 to Dec. 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. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in water year 1939, at least 10% of contributing drainage area has been regulated. Streamflow is lost into the Edwards and associated limestones in the Balcones Fault Zone that cross the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the Medina Diversion Dam. Several small diversions below Medina Diversion Lake. Wastewater effluent from the Mitchell Lake, Leon Creek, and Medio Creek plants was discharged into the Medina River above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 55 ft, prior to construction of Medina Dam in 1913, from information by Texas Department of Transportation.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148	149	253	287	219	163	136	117	101	1070	1130	392
2	144	150	292	284	220	158	130	117	99	13800	1060	387
3	142	148	317	281	217	161	124	114	102	16000	1020	388
4	141	150	304	278	216	166	120	114	100	45700	988	373
5	144	148	274	277	216	162	117	113	99	e45700	955	367
6	144	148	259	276	222	161	117	116	97	51300	921	362
7	142	139	248	283	218	155	122	114	95	31600	888	570
8	139	131	283	281	214	153	500	113	102	13100	854	2810
9	140	211	287	279	214	152	367	110	101	8260	823	7790
10	146	164	276	275	210	148	188	110	105	6480	847	8800
11	159	148	257	273	220	146	162	111	105	5300	845	3590
12	161	141	273	271	217	142	157	113	102	4260	821	2340
13	254	139	279	265	202	144	151	115	100	3410	808	1850
14	444	144	298	252	199	129	148	114	102	2950	745	1540
15	252	201	324	246	196	123	147	113	102	3480	696	1370
16	208	4240	344	248	193	125	145	113	103	4750	653	1260
17	192	530	326	248	187	123	146	120	104	4460	613	1150
18	190	341	332	244	185	131	144	131	105	4170	580	1050
19	186	305	342	242	183	129	144	122	101	3990	560	998
20	181	325	348	239	182	202	142	115	96	3300	540	992
21	178	314	344	236	182	177	140	106	93	2760	516	960
22	177	277	335	235	176	147	140	104	91	2400	498	917
23	173	262	327	232	174	139	139	100	90	2140	479	865
24	172	260	325	223	172	136	136	99	90	1930	465	820
25	168	254	319	222	169	133	128	102	91	1780	453	777
26	167	245	313	224	164	132	123	121	93	1640	440	734
27	163	249	309	218	164	129	123	119	90	1520	427	692
28	158	268	305	218	164	137	122	111	97	1430	415	667
29	151	267	299	216	---	136	121	104	98	1340	435	612
30	153	261	295	216	---	129	118	103	129	1250	445	571
31	152	---	294	215	---	131	---	103	---	1180	406	---
TOTAL	5469	10709	9381	7784	5495	4499	4697	3477	2983	292450	21326	45994
MEAN	176.4	357.0	302.6	251.1	196.2	145.1	156.6	112.2	99.43	9434	687.9	1533
MAX	444	4240	348	287	222	202	500	131	129	51300	1130	8800
MIN	139	131	248	215	164	123	117	99	90	1070	406	362
AC-FT	10850	21240	18610	15440	10900	8920	9320	6900	5920	580100	42300	91230

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002h, BY WATER YEAR (WY)

	MEAN	228.1	171.5	157.5	169.9	221.6	180.1	191.9	259.0	391.7	349.3	158.1	204.2
MAX	2151	835	961	979	2923	2558	1620	2018	7006	9434	1175	1533	
(WY)	1999	1977	1992	1968	1992	1992	1992	1987	1987	2002	1978	2002	
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	

08181500 Medina River at San Antonio, TX--Continued

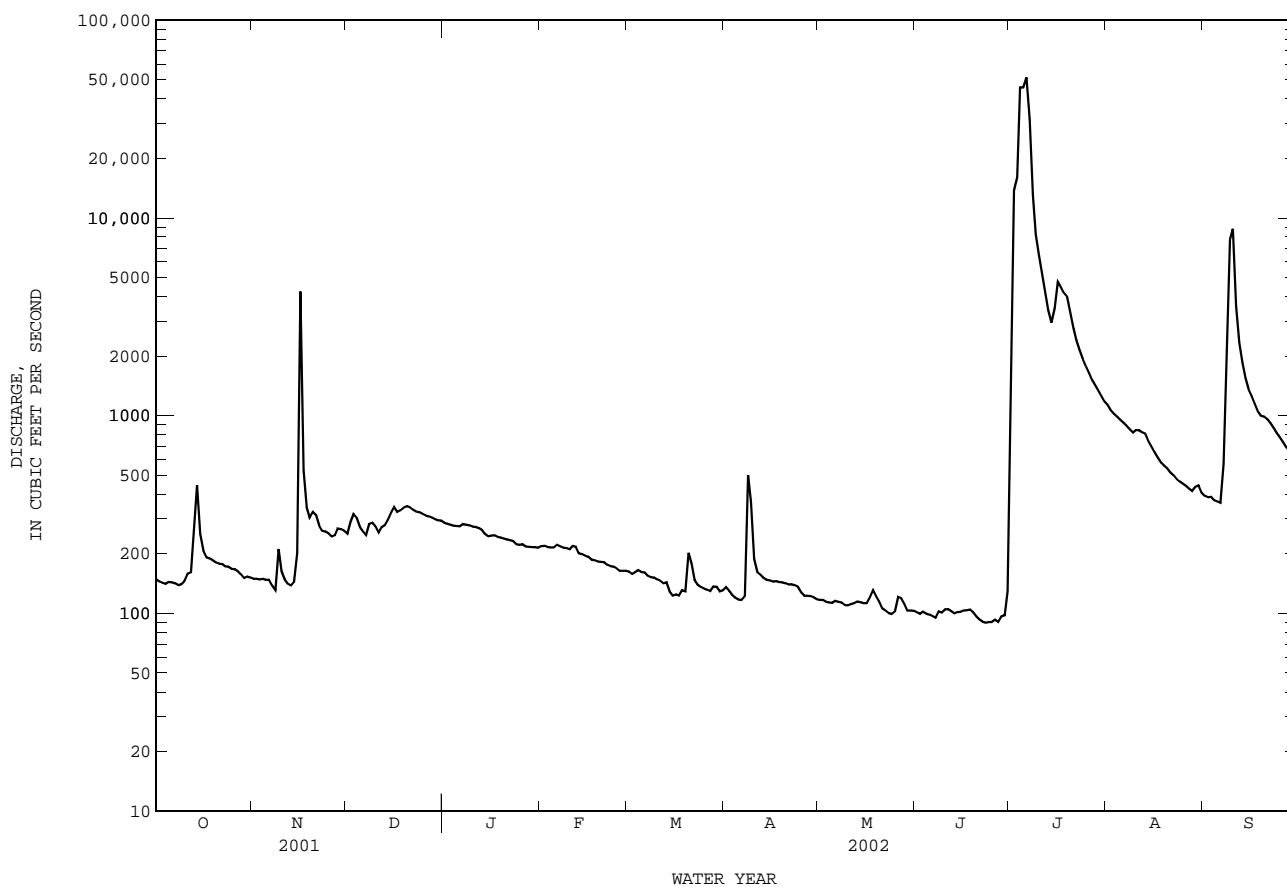
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1939 - 2002h	
ANNUAL TOTAL	87512		414264		209.9	
ANNUAL MEAN	239.8		1135		1218	
HIGHEST ANNUAL MEAN					1992	
LOWEST ANNUAL MEAN					1956	
HIGHEST DAILY MEAN	4240	Nov 16	51300	Jul 6	51300	Jul 6 2002
LOWEST DAILY MEAN	74	Jul 14	90	Jun 23	3.3	Apr 18 1956
ANNUAL SEVEN-DAY MINIMUM	85	Jul 20	91	Jun 21	4.0	Jan 21 1957
MAXIMUM PEAK FLOW			c67000	Jul 4	c67000	Jul 4 2002
MAXIMUM PEAK STAGE			a56.10	Jul 4	a56.10	Jul 4 2002
ANNUAL RUNOFF (AC-FT)	173600		821700		152000	
10 PERCENT EXCEEDS	311		1350		344	
50 PERCENT EXCEEDS	210		215		97	
90 PERCENT EXCEEDS	100		106		19	

e Estimated

h See PERIOD OF RECORD paragraph.

c From rating curve extended above discharge measurements of 57,200 and 63,700 ft³/s.

a From floodmark.



GUADALUPE RIVER BASIN

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.--Sept. 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 380.00 ft above NGVD of 1929. Sept. 12, 1962 to Dec. 19, 1980, at site 2.5 mi upstream at different datum; Dec. 19, 1980 to Dec. 23, 1986, at current site and datum; Dec. 24, 1986 to Jun. 15, 1993, at site 2.8 mi upstream at different datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Two major reservoirs impact runoff from 37 percent of drainage area for this station. Since installation of gage in water year 1962, at least 10% of contributing drainage area has been regulated by major reservoirs. Additional regulation since 1973 by eleven Soil Conservation Service floodwater-retarding structures. 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. The city of San Antonio discharges wastewater effluent into the San Antonio River above the station from their Leon Creek, Medio Creek, Salado Creek, Dos Rios, and Mitchell plants. The San Antonio City Public Service Board diverts water into and returns water from Braunig Lake and Calaveras Lake upstream from this 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.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	350	305	590	571	423	305	269	200	183	4630	1640	557
2	340	307	1040	569	420	292	288	214	179	17700	1550	553
3	338	297	1310	574	423	292	301	214	180	22100	1470	493
4	329	298	776	575	428	311	296	171	181	44000	1410	476
5	336	303	648	630	449	301	246	217	179	58800	1370	485
6	331	262	597	583	544	303	244	243	172	62400	1310	463
7	327	219	573	573	456	303	377	234	165	47200	1240	1870
8	331	205	1010	571	433	314	3530	231	184	18600	1190	6020
9	341	1130	1030	560	427	295	1810	222	189	9900	1160	8950
10	352	464	708	547	418	293	632	209	182	7450	1140	11400
11	370	288	671	505	440	273	480	208	197	6180	1160	5570
12	e561	263	815	536	434	237	451	215	233	5270	1150	3460
13	e2160	226	693	533	418	244	422	225	205	4590	1120	2700
14	e1430	186	672	522	403	228	408	252	175	4150	1060	2230
15	e576	686	903	493	368	212	410	229	174	5330	989	2020
16	453	6980	1350	486	330	181	402	204	224	5860	942	1950
17	412	3640	783	495	323	195	790	364	228	5650	894	e1830
18	405	1020	696	485	322	224	612	301	190	5440	861	e1750
19	393	731	684	471	327	238	438	213	156	4960	846	1680
20	384	828	671	471	320	1180	418	191	164	4420	829	3300
21	379	706	663	473	318	551	397	173	162	3790	793	1620
22	385	635	651	475	307	395	409	182	154	3340	764	1380
23	376	605	639	467	296	354	397	149	151	3010	739	1290
24	367	650	632	460	306	353	379	138	153	2790	716	1210
25	351	627	623	458	310	356	341	134	154	2600	686	1140
26	342	626	612	439	292	288	350	966	146	2410	656	1080
27	326	592	616	442	288	226	349	511	140	2220	649	1040
28	327	835	610	447	289	238	339	225	140	2080	588	993
29	327	781	597	439	---	245	348	175	152	1950	810	956
30	311	675	588	433	---	242	277	154	708	1830	1180	910
31	311	---	588	432	---	253	---	169	---	1730	678	---
TOTAL	14321	25370	23039	15715	10512	9722	16410	7533	5800	372380	31590	69376
MEAN	462.0	845.7	743.2	506.9	375.4	313.6	547.0	243.0	193.3	12010	1019	2313
MAX	2160	6980	1350	630	544	1180	3530	966	708	62400	1640	11400
MIN	311	186	573	432	288	181	244	134	140	1730	588	463
AC-FT	28410	50320	45700	31170	20850	19280	32550	14940	11500	738600	62660	137600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002, BY WATER YEAR (WY)

	MEAN	580.9	495.3	458.5	488.9	548.4	486.1	517.2	717.2	932.3	766.8	409.2	519.0
MAX	4507	2018	2176	2191	3803	3031	1997	3293	8527	11910	1760	2761	
(WY)	1999	2001	1992	1968	1992	1992	1992	1992	1987	2002	1978	1973	
MIN	127	153	160	168	146	143	150	130	88.6	81.9	52.8	120	
(WY)	1997	1967	1971	1967	1967	1971	1967	1967	1967	1964	1963	1989	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

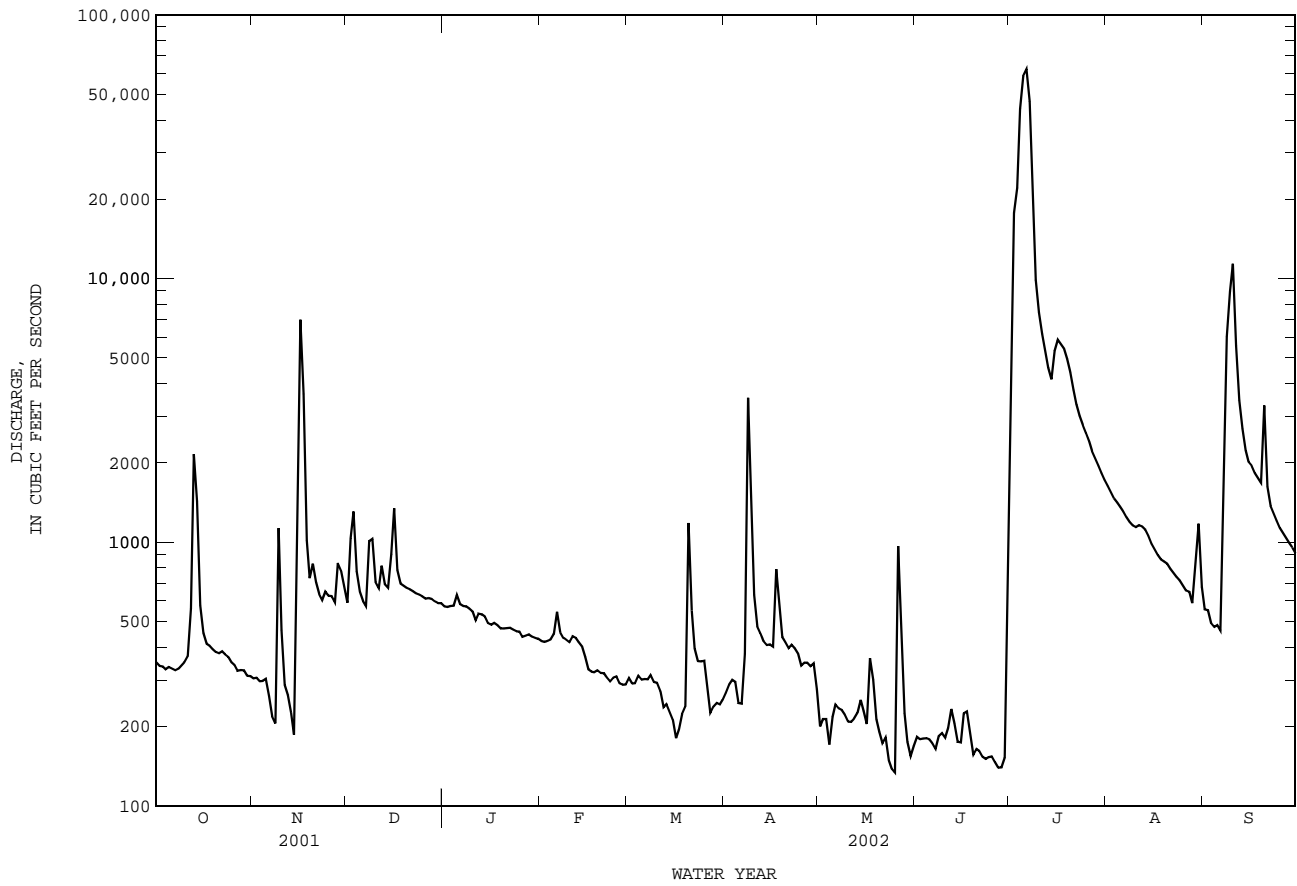
FOR 2002 WATER YEAR

WATER YEARS 1962 - 2002

ANNUAL TOTAL	206081	601768		
ANNUAL MEAN	564.6	1649	576.4	
HIGHEST ANNUAL MEAN			1784	1992
LOWEST ANNUAL MEAN			166	1963
HIGHEST DAILY MEAN	7470	Apr 24	62400	Jul 6 2002
LOWEST DAILY MEAN	67	Jul 21	134	May 25
ANNUAL SEVEN-DAY MINIMUM	79	Jul 20	148	Jun 23
MAXIMUM PEAK FLOW			67800	Jul 6
MAXIMUM PEAK STAGE			63.38	Jul 6
ANNUAL RUNOFF (AC-FT)	408800	1194000	417600	
10 PERCENT EXCEEDS	802	2300	982	
50 PERCENT EXCEEDS	413	456	317	
90 PERCENT EXCEEDS	139	193	146	

e Estimated

08181800 San Antonio River near Elmendorf, TX--Continued



08181800 San Antonio River near Elmhendorf, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Sept. 1964 to current year.
 BIOCHEMICAL DATA: Jan. 1968 to current year.
 PESTICIDE DATA: Jan. 1968 to Sept. 1981, Dec. 1992 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct. 1966 to current year.
 pH: June 1984 to current year.
 WATER TEMPERATURE: Oct. 1966 to current year.
 DISSOLVED OXYGEN: June 1984 to current year.

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

REMARKS.--Records fair. Interruptions in the record were caused by malfunctions of the instrument and silting of the monitor probes during periods of high water. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed for previous years using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. The computation of the selected constituent loads might include estimated discharge or specific conductance data. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,240 microsiemens/cm, Jan. 29, 1973, Aug. 8, 1975; minimum, 102 microsiemens/cm, Oct. 17, 1999.
 pH: Maximum, 9.0 units, June 16, 17, 1993; minimum, 7.0 units, Oct. 25 and 28, 1988, Jan. 11, 1989, Aug. 29, 2002.
 WATER TEMPERATURE: Maximum, 33.5°C, June 19, 20, Sept. 2, 1996; minimum, 5.5°C, Jan. 10, 1973.
 DISSOLVED OXYGEN: Maximum, 16.5 mg/L, Mar. 4, 2002; minimum, 0.0 mg/L, Mar. 2, Apr. 14, 15, 1985.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,040 microsiemens/cm, June 27; minimum, 134 microsiemens/cm, July 2.
 pH: Maximum, 8.3 units, on several days; minimum, 7.0 units, Aug. 29.
 WATER TEMPERATURE: Maximum, 31.8°C, June 14; minimum, 12.7°C, Jan. 4.
 DISSOLVED OXYGEN: Maximum, 16.5 mg/L, Mar. 4; minimum, 3.0 mg/L, Aug. 29.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

		SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L) AS SO4 (00945)	CHLO- RIDE, DIS- SOLVED (MG/L) AS CL (00940)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L) AS N (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) AS N (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) AS N (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) AS N (00608)	
OCT 30...	1110	901	7.9	22.5	7.7	90	--i	66.9	89.1	11.4	.014	11.5	E.03	
DEC 03...	0830	540	8.2	13.0	10.2	99	--i	46.8	39.9	3.42	.010	3.43	<.04	
20...	0940	710	8.1	14.5	9.5	94	190	61.2	56.5	--	E.005	6.15	<.04	
JAN 17...	0940	810	8.1	19.0	8.2	90	200	64.5	71.6	8.34	.143	8.48	.12	
FEB 12...	0950	820	8.4	14.0	9.6	95	200	67.1	73.5	9.05	.032	9.08	.05	
APR 18...	0900	605	7.7	24.0	7.1	86	150	48.8	51.2	4.84	.133	4.97	.17	
MAY 30...	1300	886	7.8	27.0	6.5	84	190	69.2	90.2	11.8	.089	11.9	.06	
JUN 26...	0900	973	7.7	28.5	--e	--	190	72.4	107	31.3	.024	31.4	E.03	
Date		NITRO- GEN, TOTAL (MG/L) AS N (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L) AS N (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L) AS N (00625)	PHOS- PHORUS TOTAL (MG/L) AS P (00665)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L) AS P (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L) AS PO4 (00660)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)
OCT 30...	12	--	.78	1.38	1.21	3.71	16	<.002	<.004	<.002	<.005	.018	<.050	
DEC 03...	4.6	--	1.1	.41	.24	.727	168	--	--	--	--	--	--	
20...	6.9	--	.70	.54	.43	1.33	71	<.002	<.004	<.002	<.005	.016	<.050	
JAN 17...	9.6	.95	1.1	.74	.61	1.87	111	--	--	--	--	--	--	
FEB 12...	9.7	.62	.66	.76	.71	2.18	22	<.006	<.006	<.004	<.005	.016	<.050	
APR 18...	6.3	1.2	1.4	.85	.65	1.98	155	<.006	<.006	<.004	<.005	1.13	<.050	
MAY 30...	13	.77	.82	1.25	1.07	3.28	24	<.006	<.006	<.004	<.005	.082	<.050	
JUN 26...	32	--	.88	1.61	.73	2.24	39	<.006	<.006	<.004	<.005	.028	<.050	

08181800 San Antonio River near Elmhendorf, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)
OCT 30...	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	E.010	<.005	<.005	<.02	<.002
DEC 03...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	E.009	<.005	<.005	<.02	<.002
JAN 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	E.009	E.001	<.005	<.02	<.002
APR 18...	<.010	<.002	E.064	<.020	<.005	<.006	<.018	<.003	E.031	.100	<.005	<.02	<.002
MAY 30...	<.010	<.002	E.007	<.020	<.005	<.006	<.018	<.003	E.022	.021	<.005	<.02	<.002
JUN 26...	<.010	<.002	<.041	<.021	<.005	<.006	<.018	<.003	E.015	<.005	<.005	<.02	<.002
Date	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER FLTRD 0.7 U GF, REC (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)
OCT 30...	<.009	<.005	<.003	<.004	<.035	<.027	E.005	<.006	<.002	<.007	<.003	<.007	<.006
DEC 03...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	<.009	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.007	<.006
JAN 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	<.009	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006
APR 18...	<.009	<.005	<.003	<.004	<.035	<.027	.017	<.006	<.002	<.007	<.003	<.010	<.006
MAY 30...	<.009	<.005	<.003	<.004	<.035	<.027	E.006n	<.006	<.002	<.007	<.003	<.010	<.006
JUN 26...	<.009	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006
Date	PEB- ULATE WATER FLTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)
OCT 30...	<.002	<.010	<.011	<.01	<.010	<.011	<.02	<.004	<.011	E.01	<.034	<.02	<.005
DEC 03...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	<.002	<.010	<.011	<.01	<.010	<.011	<.02	<.004	<.011	E.01	<.034	<.02	<.005
JAN 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	<.004	<.022	<.011	M	<.010	<.011	<.02	<.004	<.005	<.02	--u	<.02	<.005
APR 18...	<.004	<.022	<.011	.05	<.010	<.011	<.02	<.004	.019	E.06	<.034	<.02	<.005
MAY 30...	<.004	<.022	<.011	.02	<.010	<.011	<.02	<.004	<.007	E.04	<.034	<.02	<.005
JUN 26...	<.004	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.007	E.01n	<.034	<.02	<.005

GUADALUPE RIVER BASIN

08181800 San Antonio River near Elmhendorf, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
OCT 30...						<.002							
DEC 03...						--							
JAN 20...						<.002							
FEB 17...						--							
APR 12...						<.002							
MAY 18...						<.002							
JUN 30...						<.002							
JUN 26...						<.002							
JUL 31...	1230	18	779	7.9	31.0	5.3	73	280	58.1	51.4	E.007	.59	E.03
JUL 31...		NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00665)	ORTH-O-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO-DIS-SOLVED (MG/L AS P) (00660)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (82660)	ACETO-CHLOR, WATER, FLTRD REC (49260)	ALA-CHLOR, WATER, DISS, REC (46342)	ALPHA BHC DIS-SOLVED (MG/L) (34253)	ATRA-ZINE, WATER, REC (39632)	METHYL AZIN-THION, WAT FLT 0.7 U GF, REC (82686)
JUL 31...	.96	.37	.077	.05	.147	18.0	370	<.006	<.006	<.004	<.005	.016	<.050
JUL 31...		BEN-FLUR-ALIN WAT FLT 0.7 U GF, REC (82673)	BUTYL-ATE, WATER, DISS, REC (04028)	CAR-BARYL WATER, FLTRD 0.7 U GF, REC (82680)	CARBO-FURAN WATER, FLTRD 0.7 U GF, REC (82674)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (82687)	CYANA-ZINE, WATER, DISS, REC (04041)	DCPA WATER, FLTRD 0.7 U GF, REC (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (04040)	DI-AZINON, DIS-SOLVED (MG/L) (39572)	DI-ELDRIN DIS-SOLVED (MG/L) (39381)	DISUL-FOTON WATER, FLTRD 0.7 U GF, REC (82677)	EPTC WATER, FLTRD 0.7 U GF, REC (82668)
JUL 31...	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	E.008	<.005	<.005	<.02	<.002
JUL 31...		ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (82663)	ETHO-PROP WATER, FLTRD 0.7 U GF, REC (82672)	FONO-FOS WATER, DISS, REC (04095)	LINDANE DIS-SOLVED (MG/L) (39341)	LIN-URON WATER, FLTRD 0.7 U GF, REC (82666)	MALA-THION, DIS-SOLVED (MG/L) (39532)	METO-LACHLOR WATER, DISSOLV (39415)	METRI-BUZIN SENCOR WATER, DISSOLV (82630)	MOL-INATE WATER, FLTRD 0.7 U GF, REC (82671)	NAPROP-AMIDE WATER, FLTRD 0.7 U GF, REC (82684)	PARA-THION, DIS-SOLVED (MG/L) (39542)	METHYL PARA-THION, WAT FLT 0.7 U GF, REC (82667)
JUL 31...	<.009	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006
JUL 31...		PEB-ULATE WATER, FLTRD 0.7 U GF, REC (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (82683)	PHORATE WATER, FLTRD 0.7 U GF, REC (82664)	PRO-METON, WATER, DISS, REC (04037)	PRO-PARGITE WATER, FLTRD 0.7 U GF, REC (82679)	PRO-PANIL WATER, FLTRD 0.7 U GF, REC (82685)	PRON-AMIDE WATER, FLTRD 0.7 U GF, REC (82676)	SI-MAZINE, WATER, DISS, REC (04035)	TEBU-THIURON WATER, FLTRD 0.7 U GF, REC (82670)	TER-BACIL WATER, FLTRD 0.7 U GF, REC (82665)	TER-BUFOS WATER, FLTRD 0.7 U GF, REC (82675)	THIO-BENCARB WATER, FLTRD 0.7 U GF, REC (82681)
JUL 31...	<.004	<.022	<.011	.03	<.010	<.011	<.02	<.004	<.005	E.12	<.034	<.02	<.005

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WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

[illegible]

GUADALUPE RIVER BASIN

08181800 San Antonio River near Elmendorf, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

TRI-
FLUR-
ALIN
WAT FLT
0.7 U
GF, REC
(UG/L)
(82661)

AUG
27... <.009
SEP
25... --

Remark codes used in this report:

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

Value qualifier codes used in this report:

n -- Below the NDV

Null value qualifier codes used in this report:

e -- Required equipment not functional/avail
i -- Required sample type not received
u -- Unable to determine-matrix interference

SPECIFIC CONDUCTANCE FROM THE DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	880	828	847	912	855	879	755	716	735	---	---	---
2	901	847	869	916	867	884	749	525	643	---	---	---
3	919	878	896	916	864	883	574	509	540	753	708	731
4	926	876	898	914	854	876	672	574	634	747	726	740
5	929	876	899	900	851	881	777	666	732	778	682	733
6	918	867	884	921	890	902	819	758	791	765	692	740
7	921	861	883	934	906	924	842	788	813	770	712	742
8	907	857	880	937	905	926	830	472	713	785	727	754
9	917	874	896	937	255	649	661	584	643	777	743	763
10	933	893	919	710	578	648	719	661	694	805	729	760
11	938	894	916	806	684	740	755	701	732	830	757	789
12	---	---	---	835	791	810	724	682	697	792	741	754
13	---	---	---	894	804	846	757	711	738	760	716	742
14	---	---	---	905	847	875	760	728	742	778	715	742
15	---	---	---	905	363	750	758	399	706	788	737	757
16	757	650	696	515	145	246	630	409	578	813	749	779
17	801	737	756	383	233	309	656	615	644	813	764	794
18	816	764	782	584	383	483	714	633	684	809	777	791
19	827	783	796	685	576	643	735	691	723	815	779	793
20	871	797	818	675	576	639	754	709	730	813	783	801
21	873	815	840	723	647	686	754	713	737	801	756	774
22	868	808	827	768	705	733	753	711	742	814	745	778
23	873	823	836	762	718	743	748	721	735	827	791	803
24	877	842	854	776	727	747	743	705	728	821	795	811
25	880	843	859	769	726	747	740	708	724	812	792	802
26	882	849	861	777	732	754	709	672	698	819	801	812
27	882	852	868	811	755	776	742	688	717	817	803	810
28	884	858	869	800	585	706	742	707	730	813	781	801
29	886	817	851	731	637	682	740	709	729	832	805	814
30	888	827	859	725	676	706	742	705	727	815	802	808
31	913	867	884	---	---	---	736	695	723	805	787	797
MONTH	---	---	---	937	145	736	842	399	707	---	---	---

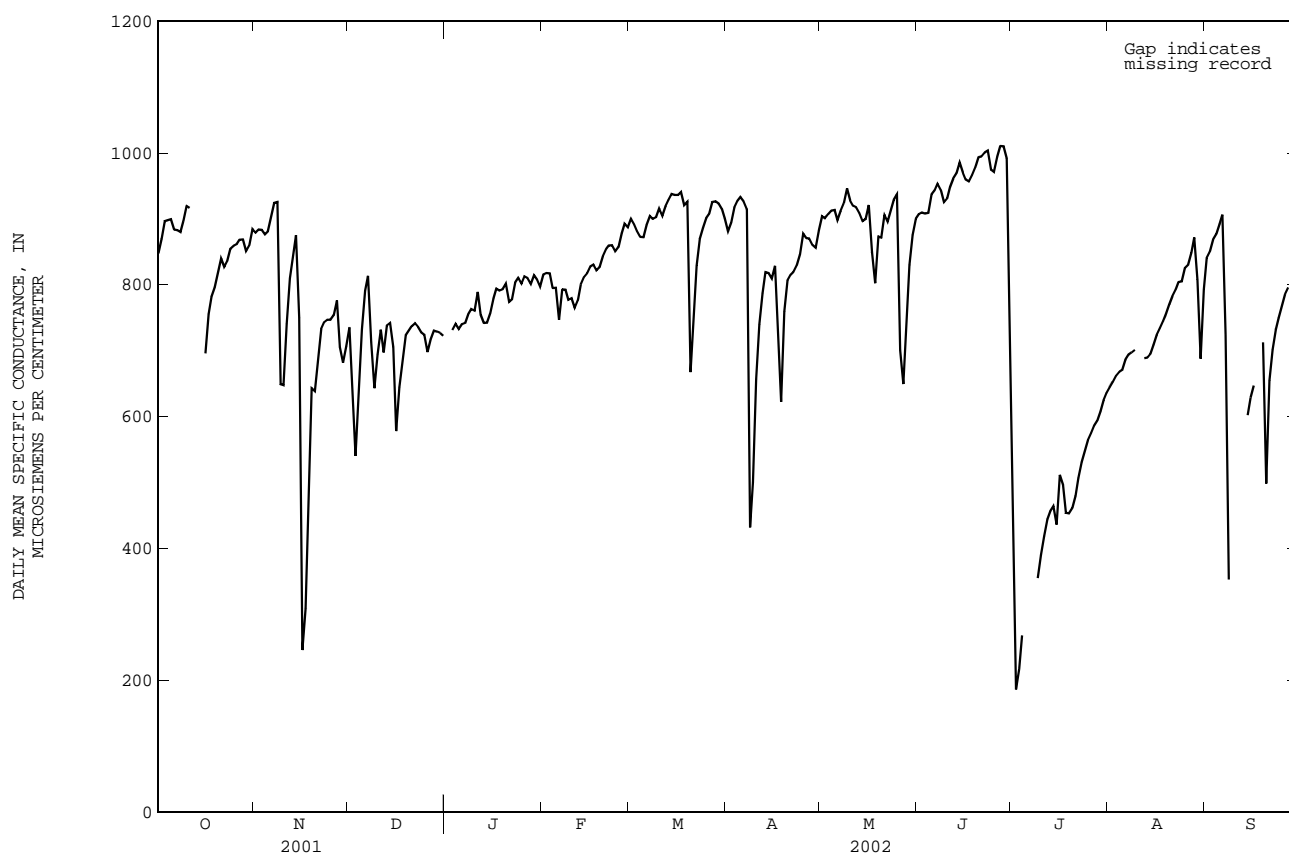
SPECIFIC CONDUCTANCE FROM THE DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	830	798	815	910	877	900	891	868	881	920	887	904
2	827	810	818	908	878	892	917	883	894	908	893	901
3	837	797	817	890	870	882	927	906	917	916	896	907
4	809	785	795	897	863	873	946	914	926	922	900	912
5	802	784	795	889	862	872	950	918	933	924	903	913
6	784	715	747	903	884	891	945	916	927	916	885	898
7	811	769	793	911	886	904	945	798	915	930	888	912
8	804	773	792	927	870	900	798	229	431	940	912	923
9	798	766	777	922	882	902	573	340	500	966	932	946
10	802	768	779	923	908	916	719	573	656	948	910	928
11	779	755	765	924	893	905	785	698	740	940	903	920
12	818	756	777	939	907	919	825	756	787	935	890	917
13	809	790	800	944	916	929	839	800	819	934	884	908
14	827	794	812	955	929	937	838	807	818	934	867	896
15	826	798	817	955	916	936	834	792	809	911	876	899
16	854	818	828	954	923	936	848	811	828	937	904	920
17	852	795	830	971	914	941	845	557	739	972	574	850
18	838	808	822	937	899	921	696	544	622	883	610	802
19	852	802	827	944	898	926	808	691	759	886	860	873
20	860	827	843	941	275	667	837	789	807	884	848	872
21	862	844	854	801	697	745	846	795	815	938	881	906
22	883	843	859	871	787	829	845	801	820	931	836	896
23	876	846	860	900	844	869	866	810	829	937	881	913
24	863	838	851	905	865	886	874	834	846	950	897	928
25	868	839	857	919	885	901	911	856	877	954	910	936
26	912	865	878	935	886	907	909	855	870	982	293	701
27	912	872	892	935	914	926	889	856	870	706	613	649
28	907	871	887	951	914	926	887	854	860	823	669	735
29	---	---	---	953	905	923	871	840	856	861	818	830
30	---	---	---	930	898	915	906	859	882	892	860	875
31	---	---	---	928	883	900	---	---	---	916	878	900
MONTH	912	715	821	971	275	893	950	229	808	982	293	880

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	927	885	907	651	148	357	651	634	644	855	821	840
2	920	899	910	277	134	186	657	640	652	868	822	850
3	929	879	908	242	192	217	668	648	662	905	832	868
4	931	885	909	316	219	268	678	657	667	898	845	876
5	959	917	937	---	---	---	678	659	671	916	865	892
6	958	926	943	---	---	---	692	671	686	928	883	906
7	968	925	953	---	---	---	701	683	694	928	261	723
8	960	920	944	---	---	---	708	684	697	521	198	352
9	947	911	925	370	339	355	707	691	701	---	---	---
10	947	917	931	404	369	390	---	---	---	---	---	---
11	967	926	949	432	404	419	---	---	---	---	---	---
12	987	945	961	450	432	444	697	673	689	---	---	---
13	992	954	969	461	449	456	702	675	690	---	---	---
14	1010	954	985	472	428	464	706	683	695	614	584	602
15	991	952	970	478	391	436	723	692	709	643	613	628
16	981	928	960	589	428	511	736	707	724	658	632	647
17	980	939	957	595	445	496	745	720	734	---	---	---
18	992	942	966	470	444	454	759	722	745	---	---	---
19	996	950	978	461	445	453	776	734	756	728	520	713
20	1020	966	994	469	452	461	793	747	770	618	405	498
21	1020	973	994	492	469	479	804	759	783	686	580	655
22	1020	981	1000	516	492	507	809	772	792	708	682	702
23	1020	978	1000	536	516	530	842	775	804	742	707	732
24	992	951	974	557	536	547	825	780	805	760	730	750
25	1000	930	971	570	555	564	848	804	825	781	749	768
26	1030	957	993	580	566	575	860	804	830	798	764	786
27	1040	978	1010	590	579	586	872	822	848	804	776	796
28	1020	975	1010	598	588	593	889	854	872	---	---	---
29	1010	973	991	617	591	607	891	420	808	829	797	815
30	985	407	735	629	616	625	746	477	688	852	801	832
31	---	---	---	639	618	636	839	734	793	---	---	---
MONTH	1040	407	954	---	---	---	---	---	---	---	---	---

GUADALUPE RIVER BASIN

08181800 San Antonio River near Elmhendorf, TX--Continued



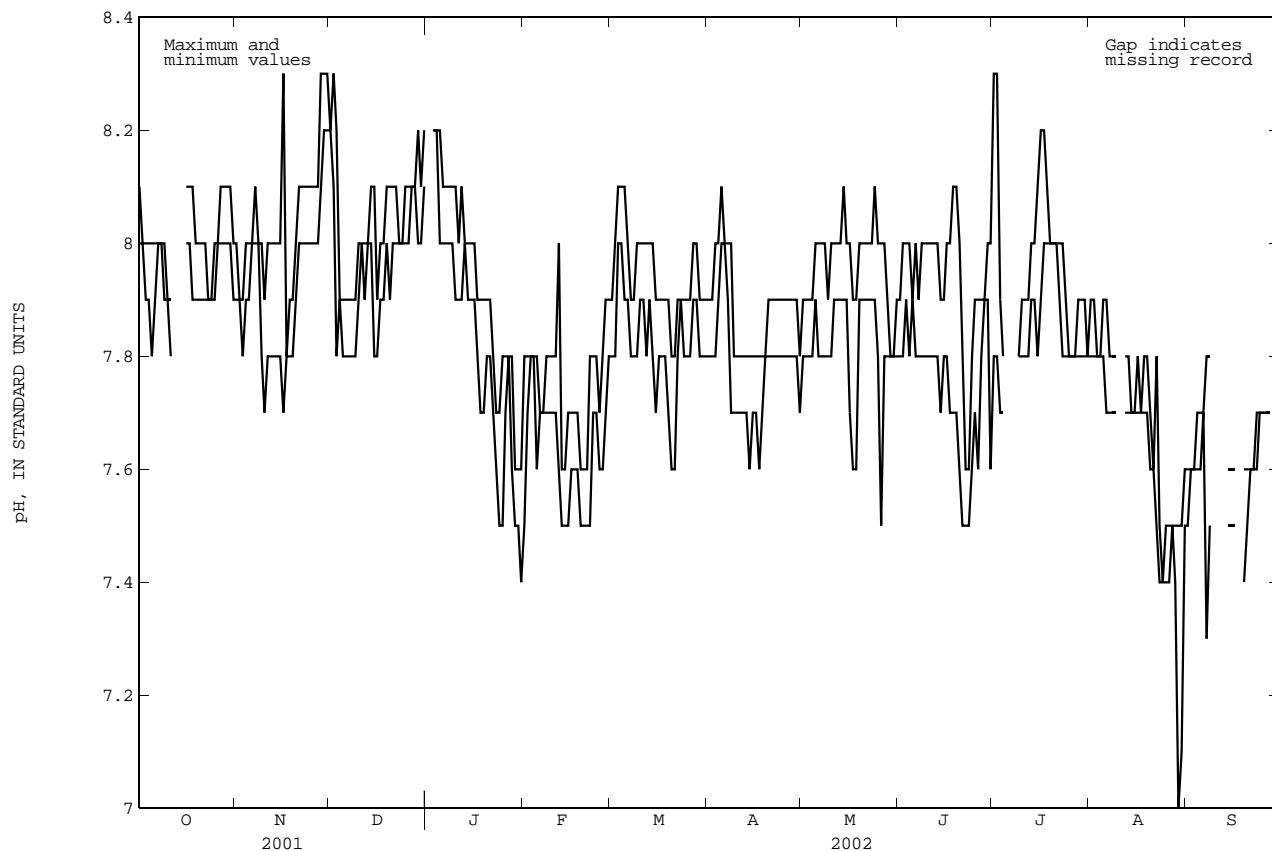
PH, WH, FIELD FROM THE DCP, in (STANDARD UNITS), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.1	8.0	8.0	7.9	8.2	8.2	---	---	7.8	7.5	7.9	7.8
2	8.0	8.0	7.9	7.9	8.3	8.1	---	---	7.8	7.7	8.0	7.8
3	8.0	7.9	7.9	7.8	8.2	7.8	8.2	8.2	7.8	7.8	8.1	8.0
4	8.0	7.9	8.0	7.9	7.9	7.9	8.2	8.2	7.8	7.8	8.1	8.0
5	8.0	7.8	8.0	7.9	7.9	7.8	8.2	8.0	7.8	7.6	8.1	7.9
6	8.0	7.9	8.0	8.0	7.9	7.8	8.1	8.0	7.7	7.7	8.0	7.9
7	8.0	8.0	8.1	8.0	7.9	7.8	8.1	8.0	7.7	7.7	7.9	7.8
8	8.0	8.0	8.0	8.0	7.9	7.8	8.1	8.0	7.8	7.7	7.9	7.8
9	8.0	7.9	8.0	7.8	7.9	7.8	8.1	8.0	7.8	7.7	8.0	7.8
10	7.9	7.9	7.9	7.7	8.0	7.9	8.1	7.9	7.8	7.7	8.0	7.9
11	7.9	7.8	8.0	7.8	8.0	8.0	8.0	7.9	7.8	7.7	8.0	7.9
12	---	---	8.0	7.8	8.0	7.9	8.1	7.9	8.0	7.6	8.0	7.8
13	---	---	8.0	7.8	8.0	8.0	8.0	8.0	7.6	7.5	8.0	7.9
14	---	---	8.0	7.8	8.1	8.0	8.0	7.9	7.6	7.5	8.0	7.8
15	---	---	8.0	7.8	8.1	7.8	8.0	7.9	7.7	7.5	7.9	7.7
16	8.1	8.0	8.3	7.7	7.9	7.8	8.0	7.9	7.7	7.6	7.9	7.8
17	8.1	8.0	7.8	7.8	8.0	7.9	7.9	7.8	7.7	7.6	7.9	7.8
18	8.1	7.9	7.9	7.8	8.0	7.9	7.9	7.7	7.7	7.6	7.9	7.8
19	8.0	7.9	7.9	7.8	8.1	8.0	7.9	7.7	7.6	7.5	7.9	7.7
20	8.0	7.9	8.0	7.9	8.1	7.9	7.9	7.8	7.6	7.5	7.8	7.6
21	8.0	7.9	8.1	8.0	8.1	8.0	7.9	7.8	7.6	7.5	7.8	7.6
22	8.0	7.9	8.1	8.0	8.1	8.0	7.8	7.7	7.8	7.5	7.9	7.8
23	7.9	7.9	8.1	8.0	8.0	8.0	7.7	7.6	7.8	7.7	7.9	7.9
24	7.9	7.9	8.1	8.0	8.0	8.0	7.7	7.5	7.8	7.7	7.9	7.8
25	8.0	7.9	8.1	8.0	8.1	8.0	7.8	7.5	7.7	7.6	7.9	7.8
26	8.0	8.0	8.1	8.0	8.1	8.0	7.8	7.7	7.8	7.6	7.9	7.8
27	8.1	8.0	8.1	8.0	8.1	8.1	7.8	7.8	7.9	7.7	8.0	7.9
28	8.1	8.0	8.3	8.1	8.1	8.1	7.8	7.6	7.9	7.8	8.0	7.9
29	8.1	8.0	8.3	8.2	8.2	8.0	7.6	7.5	---	---	7.9	7.8
30	8.1	8.0	8.3	8.2	8.1	8.0	7.6	7.5	---	---	7.9	7.8
31	8.0	7.9	---	---	8.2	8.1	7.6	7.4	---	---	7.9	7.8
MONTH	---	---	8.3	7.7	8.3	7.8	---	---	8.0	7.5	8.1	7.6

08181800 San Antonio River near Elmendorf, TX--Continued

PH, WH, FIELD FROM THE DCP, in (STANDARD UNITS), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.9	7.8	7.9	7.8	7.9	7.8	8.3	7.8	7.9	7.8	7.6	7.5
2	7.9	7.8	7.9	7.8	8.0	7.8	8.3	7.8	7.9	7.8	7.6	7.6
3	8.0	7.8	7.9	7.8	8.0	7.9	7.9	7.7	7.8	7.8	7.6	7.6
4	8.0	7.9	7.9	7.8	8.0	7.8	7.8	7.7	7.8	7.8	7.7	7.6
5	8.1	8.0	8.0	7.9	7.9	7.9	---	---	7.9	7.8	7.7	7.6
6	8.0	8.0	8.0	7.8	8.0	7.8	---	---	7.9	7.7	7.7	7.7
7	8.0	7.9	8.0	7.8	7.9	7.8	---	---	7.8	7.7	7.8	7.3
8	8.0	7.7	8.0	7.8	8.0	7.8	---	---	7.8	7.7	7.8	7.5
9	7.8	7.7	7.9	7.8	8.0	7.8	7.8	7.8	7.8	7.7	---	---
10	7.8	7.7	8.0	7.8	8.0	7.8	7.9	7.8	---	---	---	---
11	7.8	7.7	8.0	7.9	8.0	7.8	7.9	7.8	---	---	---	---
12	7.8	7.7	8.0	7.9	8.0	7.8	7.9	7.8	7.8	7.7	---	---
13	7.8	7.7	8.0	7.9	8.0	7.8	8.0	7.9	7.8	7.7	---	---
14	7.8	7.6	8.1	7.9	7.9	7.7	8.0	7.9	7.7	7.7	7.6	7.5
15	7.8	7.7	8.0	7.9	7.9	7.8	8.1	7.8	7.7	7.7	7.6	7.5
16	7.8	7.7	8.0	7.7	8.0	7.8	8.2	7.9	7.8	7.7	7.6	7.5
17	7.8	7.6	7.9	7.6	8.0	7.7	8.2	8.0	7.7	7.7	---	---
18	7.8	7.7	7.9	7.6	8.1	7.7	8.1	8.0	7.8	7.7	---	---
19	7.8	7.8	8.0	7.9	8.1	7.7	8.0	8.0	7.8	7.7	7.6	7.4
20	7.9	7.8	8.0	7.9	8.0	7.6	8.0	8.0	7.7	7.6	7.6	7.5
21	7.9	7.8	8.0	7.9	7.8	7.5	8.0	8.0	7.6	7.6	7.6	7.6
22	7.9	7.8	8.0	7.9	7.6	7.5	8.0	7.9	7.8	7.5	7.6	7.6
23	7.9	7.8	8.0	7.9	7.6	7.5	8.0	7.8	7.5	7.4	7.7	7.6
24	7.9	7.8	8.1	7.9	7.8	7.6	7.9	7.8	7.4	7.4	7.7	7.7
25	7.9	7.8	8.0	7.8	7.9	7.7	7.8	7.8	7.5	7.4	7.7	7.7
26	7.9	7.8	8.0	7.5	7.9	7.6	7.8	7.8	7.5	7.4	7.7	7.7
27	7.9	7.8	8.0	7.8	7.9	7.8	7.8	7.8	7.5	7.5	7.7	7.7
28	7.9	7.8	7.9	7.8	7.9	7.9	7.9	7.8	7.5	7.4	---	---
29	7.9	7.8	7.8	7.8	8.0	7.9	7.9	7.8	7.5	7.0	7.8	7.7
30	7.8	7.7	7.8	7.8	8.0	7.6	7.9	7.8	7.5	7.1	7.8	7.7
31	---	---	7.9	7.8	---	---	7.8	7.8	7.6	7.5	---	---
MONTH	8.1	7.6	8.1	7.5	8.1	7.5	---	---	---	---	---	---



GUADALUPE RIVER BASIN

08181800 San Antonio River near Elmendorf, TX--Continued

WATER TEMPERATURE FROM THE DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

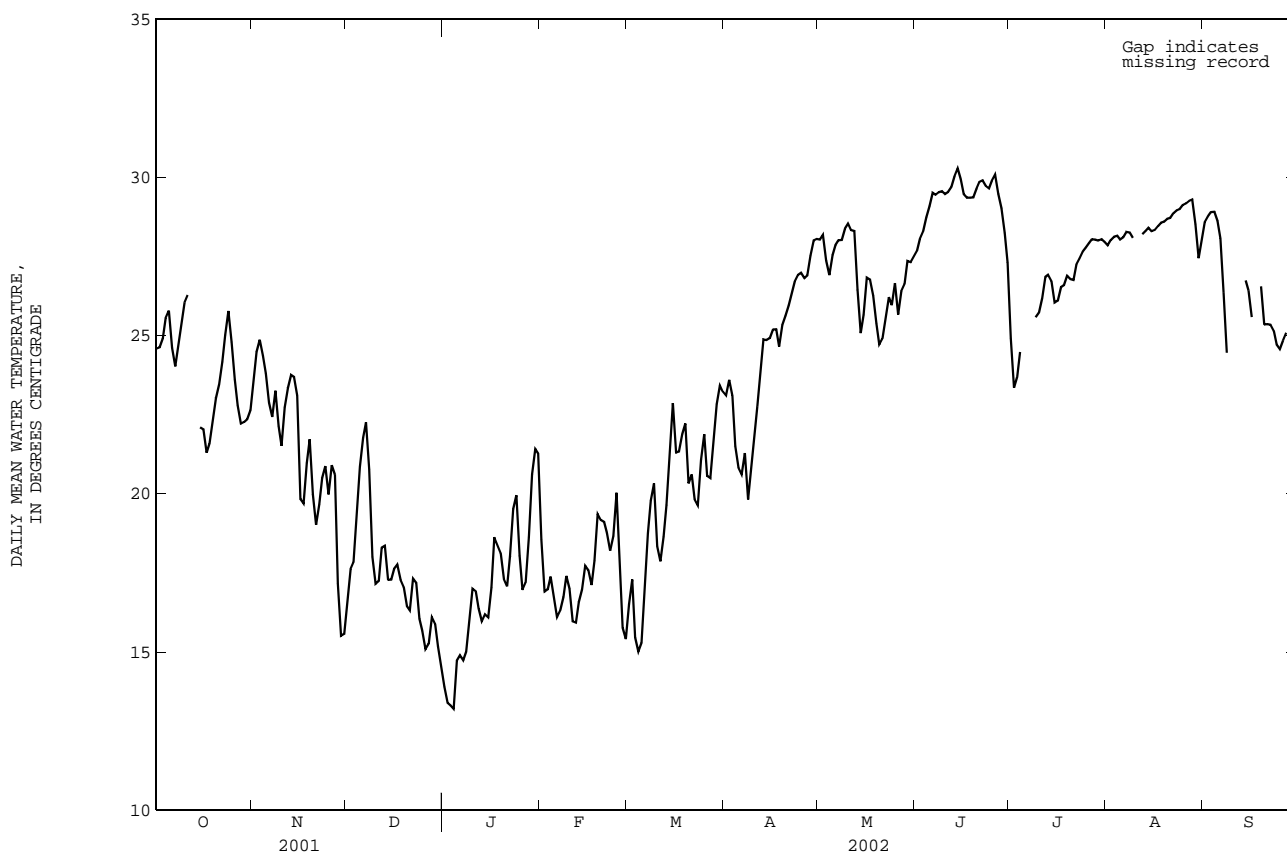
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	25.4	23.7	24.6	24.4	22.9	23.5	17.7	16.0	16.6	14.7	13.5	13.9
2	25.4	23.8	24.6	25.2	23.9	24.5	17.9	17.0	17.6	13.8	13.0	13.4
3	25.6	24.4	24.9	25.2	24.6	24.9	18.3	17.5	17.8	13.8	12.9	13.3
4	26.3	25.1	25.6	25.1	23.8	24.4	20.3	18.3	19.3	14.1	12.7	13.2
5	26.3	25.5	25.8	24.4	23.3	23.8	21.6	20.2	20.9	15.5	13.8	14.7
6	25.9	23.8	24.6	23.8	22.4	22.9	22.3	21.3	21.8	15.4	14.5	14.9
7	24.7	23.1	24.0	23.1	21.8	22.4	22.7	21.9	22.3	15.5	14.0	14.7
8	25.6	24.2	24.7	23.9	22.7	23.3	22.5	18.6	20.8	16.1	14.2	15.0
9	26.0	25.1	25.4	24.0	20.4	22.1	19.0	17.5	18.0	17.2	15.0	15.9
10	26.7	25.6	26.0	22.5	20.9	21.5	17.6	16.8	17.2	18.2	15.9	17.0
11	26.7	26.1	26.3	23.5	22.2	22.7	17.9	16.8	17.3	17.7	16.4	16.9
12	---	---	---	24.0	22.9	23.3	18.9	17.7	18.3	16.9	15.9	16.4
13	---	---	---	24.2	23.4	23.8	18.5	17.9	18.4	16.6	15.1	16.0
14	---	---	---	24.2	23.3	23.7	17.9	17.0	17.3	16.9	15.5	16.2
15	23.4	21.5	22.1	23.8	21.9	23.1	18.1	16.9	17.3	17.0	15.4	16.1
16	23.2	21.4	22.0	22.8	19.1	19.8	18.0	17.3	17.6	18.2	16.2	17.0
17	22.2	20.4	21.3	20.4	19.3	19.7	18.0	17.5	17.8	19.5	17.9	18.6
18	22.7	20.7	21.6	21.9	20.4	21.0	17.7	17.0	17.3	19.3	18.1	18.4
19	23.4	21.3	22.3	22.0	21.3	21.7	17.3	16.9	17.1	18.4	17.9	18.1
20	23.8	22.2	23.0	21.3	19.4	20.0	16.9	16.0	16.5	18.1	16.8	17.3
21	24.2	22.5	23.5	19.4	18.8	19.0	17.1	15.8	16.3	17.8	16.4	17.1
22	25.2	23.3	24.2	20.6	19.0	19.7	18.1	16.5	17.3	19.1	17.3	18.0
23	25.8	24.4	25.0	21.3	19.6	20.5	17.8	17.0	17.2	20.6	18.8	19.5
24	26.5	25.2	25.8	21.3	20.4	20.9	17.0	15.8	16.0	20.4	19.0	20.0
25	26.2	24.2	24.8	20.9	19.3	20.0	16.0	15.5	15.7	19.0	17.6	18.1
26	24.5	23.0	23.6	22.0	19.9	20.9	15.6	14.5	15.1	17.7	16.3	17.0
27	23.8	22.2	22.8	21.9	19.4	20.6	16.2	14.5	15.3	18.2	16.2	17.2
28	22.9	21.4	22.2	19.4	15.5	17.2	16.7	15.5	16.1	20.0	17.7	18.6
29	22.8	21.5	22.3	15.9	15.2	15.5	16.5	15.6	15.9	21.7	19.8	20.6
30	22.9	21.8	22.4	16.6	15.1	15.6	16.0	14.8	15.2	21.8	21.1	21.4
31	23.4	22.0	22.6	---	---	---	15.3	14.2	14.5	21.7	20.5	21.3
MONTH	---	---	---	25.2	15.1	21.4	22.7	14.2	17.5	21.8	12.7	17.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	20.5	17.7	18.6	17.9	15.9	16.5	24.2	21.7	23.1	29.0	27.1	28.0
2	17.7	16.3	16.9	17.9	16.5	17.3	24.6	22.6	23.6	29.5	27.2	28.2
3	17.8	16.3	17.0	16.5	14.6	15.5	24.3	22.4	23.1	28.6	26.8	27.4
4	17.8	17.0	17.4	16.1	13.7	15.0	22.6	21.1	21.5	28.0	26.1	26.9
5	17.6	16.1	16.7	16.6	14.3	15.3	21.3	20.4	20.8	28.5	26.7	27.5
6	16.6	15.7	16.1	18.5	16.2	17.0	21.3	20.3	20.6	28.9	27.0	27.9
7	17.4	15.4	16.3	19.8	18.1	18.8	22.5	20.6	21.3	29.1	27.1	28.0
8	17.8	15.8	16.7	20.7	19.4	19.8	21.8	18.4	19.8	29.1	27.1	28.0
9	18.5	16.3	17.4	20.8	19.6	20.3	21.9	19.9	20.7	29.6	27.3	28.4
10	18.4	16.6	17.0	19.6	17.7	18.3	22.7	21.3	21.8	29.6	27.6	28.5
11	16.8	15.1	16.0	18.5	17.4	17.9	24.2	21.7	22.8	29.4	27.4	28.3
12	17.1	14.9	15.9	20.0	17.1	18.7	25.3	23.0	24.0	29.3	27.4	28.3
13	17.7	15.6	16.6	20.7	18.2	19.6	26.0	23.8	24.9	28.7	25.3	26.5
14	18.1	16.0	17.0	22.9	20.1	21.4	25.5	24.1	24.9	25.9	24.2	25.1
15	18.6	16.8	17.7	24.0	21.9	22.9	25.6	24.2	24.9	26.9	24.4	25.7
16	18.5	16.8	17.6	22.9	20.8	21.3	26.3	24.2	25.2	28.1	25.7	26.8
17	18.1	16.1	17.1	22.1	20.6	21.3	25.8	24.4	25.2	27.8	26.3	26.8
18	18.9	17.2	17.9	22.5	21.4	21.9	25.7	24.0	24.7	27.3	25.3	26.3
19	20.1	18.7	19.4	22.6	21.9	22.2	26.0	24.8	25.3	26.4	24.2	25.4
20	20.0	18.1	19.2	22.2	17.6	20.3	26.7	24.8	25.6	25.7	23.6	24.7
21	19.8	18.0	19.1	21.5	19.8	20.6	27.0	25.1	26.0	26.0	23.8	24.9
22	19.4	17.9	18.8	20.8	18.7	19.8	27.3	25.4	26.3	26.9	24.5	25.6
23	19.0	17.1	18.2	20.7	18.6	19.6	27.8	25.7	26.7	27.4	25.2	26.2
24	19.9	17.2	18.7	22.6	19.8	21.1	28.0	25.9	26.9	26.5	25.5	26.0
25	21.1	19.0	20.0	22.3	21.3	21.9	27.5	26.5	27.0	28.4	25.4	26.7
26	20.6	16.5	17.8	21.3	19.5	20.6	27.7	26.1	26.8	27.6	23.4	25.7
27	16.5	14.9	15.8	21.3	19.5	20.5	28.0	26.0	26.9	27.5	25.3	26.4
28	16.4	15.0	15.4	23.2	20.6	21.7	28.9	26.4	27.5	27.4	25.9	26.6
29	---	---	---	23.3	22.4	22.8	29.3	26.9	28.0	28.8	26.2	27.4
30	---	---	---	24.3	22.8	23.4	29.2	26.9	28.1	28.1	26.4	27.3
31	---	---	---	24.2	22.0	23.2	---	---	---	28.8	26.2	27.5
MONTH	21.1	14.9	17.4	24.3	13.7	19.9	29.3	18.4	24.5	29.6	23.4	26.9

08181800 San Antonio River near Elmendorf, TX--Continued

WATER TEMPERATURE FROM THE DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	28.6	26.5	27.7	27.0	23.3	24.9	28.4	27.4	27.9	29.3	27.8	28.6
2	29.5	26.8	28.1	24.0	23.0	23.4	28.7	27.5	28.0	29.5	27.9	28.8
3	29.4	27.1	28.3	24.4	23.3	23.7	28.9	27.5	28.1	29.6	28.0	28.9
4	30.0	27.7	28.7	25.0	24.1	24.5	28.8	27.6	28.2	29.5	28.2	28.9
5	30.4	27.8	29.1	---	---	---	28.6	27.5	28.0	29.3	28.0	28.6
6	30.9	28.2	29.5	---	---	---	28.9	27.4	28.1	28.7	27.4	28.1
7	30.5	28.3	29.5	---	---	---	29.0	27.6	28.3	28.3	24.1	26.4
8	30.8	28.3	29.5	---	---	---	28.8	27.8	28.3	25.3	24.0	24.5
9	30.5	28.6	29.6	25.9	25.2	25.6	28.5	27.7	28.1	---	---	---
10	30.5	28.5	29.5	26.0	25.5	25.7	---	---	---	---	---	---
11	30.6	28.5	29.5	26.7	25.9	26.2	---	---	---	---	---	---
12	31.0	28.5	29.7	27.0	26.7	26.9	29.0	27.6	28.2	---	---	---
13	31.5	28.7	30.0	27.0	26.8	26.9	29.1	27.6	28.3	---	---	---
14	31.8	28.9	30.3	26.9	26.3	26.7	29.0	27.8	28.4	27.1	26.4	26.7
15	30.9	28.8	29.9	26.6	25.6	26.0	28.9	27.8	28.3	26.9	26.0	26.4
16	30.5	28.2	29.5	26.5	25.9	26.1	28.9	27.8	28.3	26.0	25.3	25.6
17	30.5	28.0	29.4	26.6	26.3	26.5	29.3	27.8	28.5	---	---	---
18	30.8	27.9	29.4	26.9	26.3	26.6	29.3	27.9	28.6	---	---	---
19	30.9	27.9	29.4	27.0	26.7	26.9	29.4	27.9	28.6	27.0	26.1	26.6
20	30.8	28.5	29.6	26.9	26.6	26.8	29.5	28.0	28.7	26.1	24.6	25.4
21	31.3	28.5	29.9	27.2	26.4	26.8	29.6	28.0	28.7	26.0	24.8	25.4
22	31.0	28.6	29.9	27.6	27.0	27.3	29.7	28.1	28.9	25.8	24.9	25.3
23	31.3	28.1	29.7	27.8	27.1	27.4	29.7	28.1	29.0	25.6	24.8	25.1
24	31.1	28.0	29.7	28.2	27.3	27.7	29.7	28.2	29.0	25.2	24.2	24.7
25	31.4	28.3	29.9	28.3	27.4	27.8	30.0	28.3	29.1	25.3	24.0	24.6
26	31.6	28.6	30.1	28.5	27.5	27.9	29.9	28.3	29.2	25.7	24.2	24.8
27	30.6	28.2	29.5	28.4	27.7	28.1	30.0	28.4	29.3	25.9	24.4	25.1
28	29.8	28.4	29.0	28.4	27.7	28.0	30.1	28.5	29.3	---	---	---
29	28.6	27.9	28.3	28.4	27.7	28.0	29.9	26.8	28.5	25.9	24.7	25.2
30	27.9	26.3	27.3	28.5	27.7	28.0	28.5	26.7	27.4	26.2	25.1	25.6
31	---	---	---	28.5	27.6	28.0	28.9	27.3	28.0	---	---	---
MONTH	31.8	26.3	29.3	---	---	---	---	---	---	---	---	---



GUADALUPE RIVER BASIN

08181800 San Antonio River near Elmendorf, TX--Continued

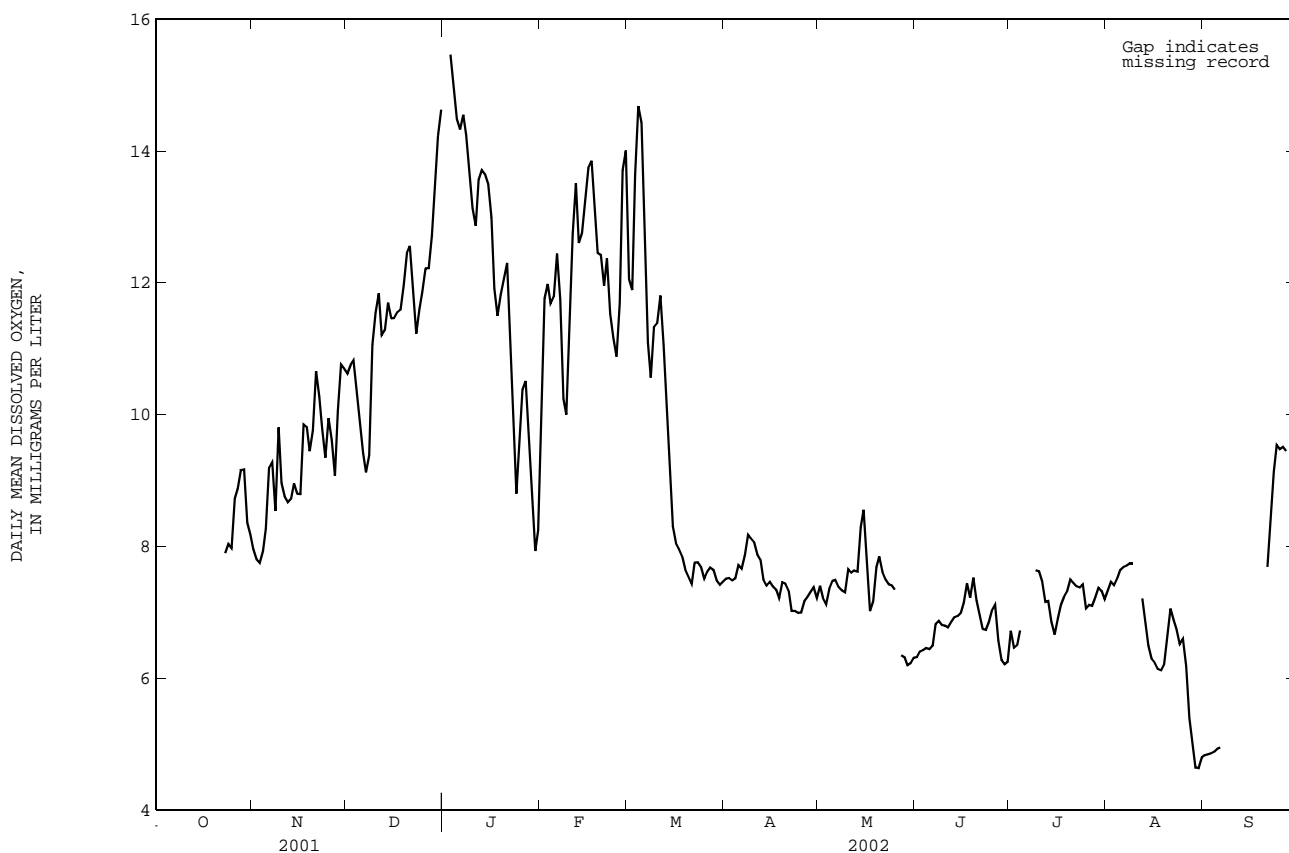
OXYGEN DISSOLVED FROM THE DCP, in (MG/L), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	8.2	7.8	8.0	10.7	10.4	10.6	---	---	---
2	---	---	---	8.7	7.6	7.8	11.3	10.3	10.8	---	---	---
3	---	---	---	8.7	7.5	7.8	11.3	10.2	10.8	16.4	14.8	15.5
4	---	---	---	8.9	7.6	7.9	10.5	10.0	10.3	15.9	14.3	15.0
5	---	---	---	9.2	7.8	8.3	10.2	9.4	9.9	15.1	13.7	14.5
6	---	---	---	9.6	8.5	9.2	9.7	9.2	9.4	15.5	13.4	14.3
7	---	---	---	10.0	8.5	9.3	9.5	8.7	9.1	15.4	13.9	14.6
8	---	---	---	8.9	8.2	8.5	10.2	8.7	9.4	15.2	13.7	14.2
9	---	---	---	12.3	8.1	9.8	11.5	10.0	11.1	14.8	13.0	13.7
10	---	---	---	9.8	8.5	9.0	12.2	11.1	11.5	14.2	12.3	13.1
11	---	---	---	9.0	8.4	8.8	12.3	11.4	11.8	13.8	12.0	12.9
12	---	---	---	9.0	8.4	8.7	11.9	10.8	11.2	14.9	12.6	13.6
13	---	---	---	9.1	8.4	8.7	12.7	10.8	11.3	14.5	13.1	13.7
14	---	---	---	9.2	7.9	9.0	12.4	11.3	11.7	14.8	12.9	13.6
15	---	---	---	9.8	7.8	8.8	12.0	10.6	11.5	14.9	12.6	13.5
16	---	---	---	9.5	7.6	8.8	11.9	11.0	11.5	14.3	12.1	13.0
17	---	---	---	10.5	8.8	9.9	12.2	10.5	11.6	13.4	11.0	11.9
18	---	---	---	10.2	8.8	9.8	11.9	10.7	11.6	13.2	10.5	11.5
19	---	---	---	10.0	8.8	9.4	12.6	11.6	12.0	13.6	10.5	11.8
20	---	---	---	10.7	9.0	9.8	12.9	12.0	12.5	13.7	10.9	12.1
21	---	---	---	11.2	9.8	10.7	13.0	11.8	12.6	14.0	11.2	12.3
22	---	---	---	11.2	9.4	10.3	12.7	11.4	11.9	12.4	10.4	11.3
23	8.9	7.7	7.9	10.7	8.8	9.8	11.6	11.0	11.2	11.3	9.0	9.9
24	9.0	7.5	8.0	10.0	8.8	9.4	12.0	11.2	11.6	10.7	8.0	8.8
25	9.2	7.6	8.0	10.6	9.4	9.9	12.3	11.6	11.9	11.3	8.3	9.6
26	9.4	8.0	8.7	10.5	8.5	9.6	12.9	11.8	12.2	12.8	9.3	10.4
27	9.6	8.2	8.9	9.6	8.5	9.1	13.0	11.3	12.2	12.1	9.6	10.5
28	9.8	8.4	9.2	10.8	8.9	10.1	14.0	11.4	12.7	11.8	9.0	9.7
29	10.2	8.3	9.2	11.1	10.4	10.8	14.8	12.4	13.4	10.6	7.8	8.8
30	8.6	8.2	8.4	10.9	10.5	10.7	15.2	13.5	14.2	8.9	7.3	7.9
31	8.4	8.0	8.2	---	---	---	15.6	14.0	14.6	9.5	7.3	8.2
MONTH	---	---	---	12.3	7.5	9.3	15.6	8.7	11.6	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	11.7	8.6	10.1	14.3	11.1	12.1	7.8	7.3	7.5	7.9	7.0	7.4
2	13.3	10.6	11.8	13.3	10.7	11.9	7.8	7.3	7.5	7.8	6.8	7.2
3	12.9	11.2	12.0	15.4	12.4	13.6	7.7	7.2	7.5	7.5	6.7	7.1
4	12.8	10.9	11.7	16.5	13.0	14.7	7.7	7.3	7.5	7.7	7.0	7.4
5	13.0	11.0	11.8	16.1	13.1	14.4	8.0	7.6	7.7	7.9	7.1	7.5
6	13.2	12.0	12.4	14.2	11.2	12.7	8.1	7.6	7.7	8.2	6.9	7.5
7	13.0	9.8	11.8	12.8	10.2	11.1	8.2	7.7	7.9	8.0	6.8	7.4
8	11.4	9.5	10.2	11.9	9.8	10.6	8.9	7.4	8.2	8.0	6.6	7.3
9	11.2	9.3	10.0	12.7	9.9	11.3	8.4	7.9	8.1	8.2	6.4	7.3
10	12.8	9.9	11.5	12.9	10.3	11.4	8.4	7.9	8.1	8.4	7.1	7.7
11	13.7	11.6	12.7	13.3	10.8	11.8	8.1	7.7	7.9	8.3	7.1	7.6
12	15.6	12.4	13.5	12.0	9.5	11.1	8.0	7.6	7.8	8.3	7.1	7.6
13	13.6	11.9	12.6	10.7	9.3	10	7.8	7.3	7.5	8.6	7.1	7.6
14	14.6	11.4	12.8	9.7	8.4	9.1	7.6	7.3	7.4	8.8	7.8	8.3
15	14.9	12.1	13.3	8.9	7.8	8.3	7.6	7.3	7.5	10.3	7.9	8.6
16	15.3	12.7	13.7	8.5	7.7	8.1	7.7	7.2	7.4	8.6	7.1	7.9
17	15.2	12.6	13.9	8.4	7.7	8.0	7.8	7.0	7.3	7.7	6.2	7.0
18	14.0	12.2	13.2	8.1	7.7	7.9	7.5	6.7	7.2	8.0	6.3	7.2
19	13.9	11.3	12.5	7.9	7.5	7.7	7.6	6.9	7.5	8.2	7.3	7.7
20	13.9	11.4	12.4	8.0	6.4	7.5	7.6	7.3	7.4	8.5	7.5	7.8
21	13.8	11.0	12.0	7.8	6.9	7.4	7.6	7.0	7.3	8.1	7.3	7.6
22	13.8	11.3	12.4	8.2	7.5	7.8	7.2	6.7	7.0	8.2	7.0	7.5
23	12.9	10.6	11.5	8.0	7.7	7.8	7.2	6.8	7.0	8.3	6.9	7.4
24	12.8	10.4	11.2	8.0	7.6	7.7	7.2	6.8	7.0	8.2	6.8	7.4
25	12.4	10.0	10.9	7.6	7.4	7.5	7.3	6.8	7.0	7.6	6.9	7.3
26	13.8	10.0	11.7	8.0	7.5	7.6	7.5	6.9	7.2	---	---	---
27	15.3	12.2	13.7	8.1	7.5	7.7	7.5	6.9	7.2	6.5	6.2	6.4
28	15.3	12.8	14.0	8.1	7.5	7.6	7.7	6.9	7.3	6.4	6.2	6.3
29	---	---	---	7.6	7.4	7.5	8.0	6.9	7.4	6.2	6.2	6.2
30	---	---	---	7.8	7.3	7.4	7.7	6.8	7.2	6.3	6.2	6.2
31	---	---	---	7.7	7.3	7.5	---	---	---	6.5	6.2	6.3
MONTH	15.6	8.6	12.2	16.5	6.4	9.6	8.9	6.7	7.5	---	---	---

08181800 San Antonio River near Elmendorf, TX--Continued

OXYGEN DISSOLVED FROM THE DCP, in (MG/L), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	6.5	6.1	6.3	7.1	6.3	6.7	7.6	7.2	7.3	4.9	4.8	4.8
2	6.6	6.2	6.4	6.9	6.2	6.5	7.8	7.2	7.5	4.9	4.8	4.8
3	6.7	6.2	6.4	6.6	6.4	6.5	7.6	7.3	7.4	5.0	4.8	4.9
4	6.9	6.1	6.5	7.2	6.4	6.7	7.7	7.4	7.5	5.0	4.8	4.9
5	6.8	6.1	6.4	---	---	---	7.8	7.6	7.6	5.0	4.8	4.9
6	7.1	6.1	6.5	---	---	---	7.8	7.6	7.7	5.0	4.9	5.0
7	7.1	6.5	6.8	---	---	---	7.8	7.6	7.7	---	---	---
8	7.3	6.6	6.9	---	---	---	7.9	7.6	7.7	---	---	---
9	7.1	6.5	6.8	7.8	7.2	7.6	7.9	7.6	7.7	---	---	---
10	7.1	6.5	6.8	7.8	7.4	7.6	---	---	---	---	---	---
11	7.1	6.4	6.8	7.6	7.4	7.5	---	---	---	---	---	---
12	7.3	6.5	6.9	7.5	6.4	7.2	7.4	7.1	7.2	---	---	---
13	7.4	6.6	6.9	7.2	7.0	7.2	7.1	6.7	6.9	---	---	---
14	7.5	6.5	6.9	7.2	6.4	6.9	6.7	6.4	6.5	---	---	---
15	7.5	6.6	7.0	6.9	5.6	6.7	6.4	6.2	6.3	---	---	---
16	7.7	6.7	7.1	7.1	6.5	6.9	6.3	6.2	6.2	---	---	---
17	8.2	6.8	7.4	7.3	7.0	7.1	6.3	6.0	6.1	---	---	---
18	8.2	6.4	7.2	7.3	7.1	7.2	6.2	6.1	6.1	---	---	---
19	9.3	6.1	7.5	7.6	7.2	7.3	6.4	6.1	6.2	---	---	---
20	8.5	6.2	7.2	7.6	7.4	7.5	7.2	6.3	6.6	---	---	---
21	8.0	6.3	7.0	7.6	7.3	7.4	7.5	6.9	7.1	8.2	6.9	7.7
22	7.5	6.2	6.8	7.6	7.3	7.4	7.2	6.6	6.9	8.8	7.9	8.4
23	7.6	6.3	6.7	7.5	7.3	7.4	7.1	6.4	6.7	9.6	8.7	9.1
24	7.7	6.2	6.9	7.7	7.0	7.4	6.8	6.3	6.5	10.1	9.0	9.5
25	7.8	6.5	7.0	7.2	6.9	7.1	6.8	6.4	6.6	10.0	8.8	9.5
26	8.0	6.5	7.1	7.3	7.0	7.1	6.7	5.8	6.2	9.7	9.3	9.5
27	6.8	6.4	6.6	7.2	7.0	7.1	5.8	5.2	5.4	9.6	9.2	9.4
28	6.4	6.2	6.3	7.4	7.1	7.2	5.2	5.0	5.0	---	---	---
29	6.3	6.2	6.2	7.5	7.3	7.4	5.0	3.0	4.7	9.3	8.2	8.9
30	6.5	5.8	6.2	7.4	7.2	7.3	4.8	3.7	4.6	8.8	7.7	8.4
31	---	---	---	7.4	7.0	7.2	4.8	4.8	4.8	---	---	---
MONTH	9.3	5.8	6.8	---	---	---	---	---	---	---	---	---



GUADALUPE RIVER BASIN

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.

PERIOD OF RECORD.--Apr. 1925 to current year.

Water-quality records.--Chemical data: Apr. 1959. Biochemical data: May 1965 to Sept. 1981, Oct. 1986 to Aug. 1995. Sediment data: Jan. 1966 to Sept. 1975, Jan. 1987 to Sept. 1996. Specific conductance: Jan. 1987 to Sept. 1996. pH: Jan 1987 to Sept. 1996. Water temperature: Jan. 1987 to Sept. 1996. Dissolved oxygen: Jan. 1987 to Sept. 1996.

REVISIONS.--The maximum discharge for water year 1999 has been revised to 51,000 ft³/s, Oct. 20, 1998, gage height, 33.60 ft; revised daily discharges in ft³/s for periods in Oct. 1998 are given below.

Oct. 19 e22800 Oct. 20 e47400 Oct. 21 e33200 Oct. 22 15500

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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in Apr. 1925, at least 10% of contributing drainage area has been regulated. Additional regulation since 1973 by eleven Natural Resources Conservation Service floodwater-retarding structures. Some diversions for municipal uses and irrigation above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Oct. 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.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	329	297	607	555	413	277	251	331	131	778	1710	827
2	326	299	667	551	409	282	258	227	156	2840	1640	635
3	325	296	964	534	404	288	294	200	159	8320	1560	596
4	320	298	1180	543	411	278	299	227	151	21500	1480	535
5	315	293	820	e575	410	284	314	191	151	e35000	1430	505
6	306	292	630	e618	413	292	277	182	146	e49400	1390	494
7	311	290	559	e595	510	287	238	213	148	53800	1340	553
8	308	242	541	e570	470	291	887	219	142	51300	1290	1240
9	303	230	743	e559	432	294	2430	208	142	36400	1240	5060
10	304	734	1040	546	417	291	2300	207	160	23000	1200	8160
11	301	779	716	516	415	284	858	193	145	11700	1180	10400
12	307	405	667	475	414	276	560	189	144	7570	1220	9220
13	329	338	796	483	425	241	504	193	173	6140	1190	4720
14	943	315	686	494	414	227	475	193	185	5310	1170	2840
15	1450	277	650	479	393	231	452	215	151	e4810	1120	2450
16	724	562	806	466	383	208	444	216	140	e4930	1050	2240
17	475	3340	1260	451	332	192	439	204	151	e5780	1000	2020
18	404	4800	822	455	323	182	632	197	176	6110	957	1810
19	380	1580	697	455	316	196	757	370	180	5810	919	1630
20	373	691	661	441	318	220	496	243	129	5320	893	1660
21	362	717	647	445	312	872	442	183	125	4700	868	2810
22	359	654	640	440	309	683	428	167	123	3960	841	1990
23	356	576	628	446	302	447	418	162	129	3430	814	1460
24	354	529	615	444	289	376	416	147	122	3060	784	1360
25	347	510	601	439	294	365	399	138	114	2710	763	e1300
26	338	494	598	433	293	359	360	131	118	2480	740	e1225
27	324	488	580	423	286	340	355	456	132	2310	705	e1175
28	317	483	588	420	272	252	360	766	127	2150	683	e1115
29	316	599	578	424	---	233	320	297	120	2020	626	e1060
30	315	694	573	426	---	248	344	193	130	1910	657	e1010
31	302	---	562	419	---	252	---	155	---	1800	1210	---
TOTAL	12523	22102	22122	15120	10379	9548	17039	7213	4300	376348	33670	72100
MEAN	404.0	736.7	713.6	487.7	370.7	308.0	568.0	232.7	143.3	12140	1086	2403
MAX	1450	4800	1260	618	510	872	2430	766	185	53800	1710	10400
MIN	301	230	541	419	272	182	238	131	114	778	626	494
AC-FT	24840	43840	43880	29990	20590	18940	33800	14310	8530	746500	66780	143000

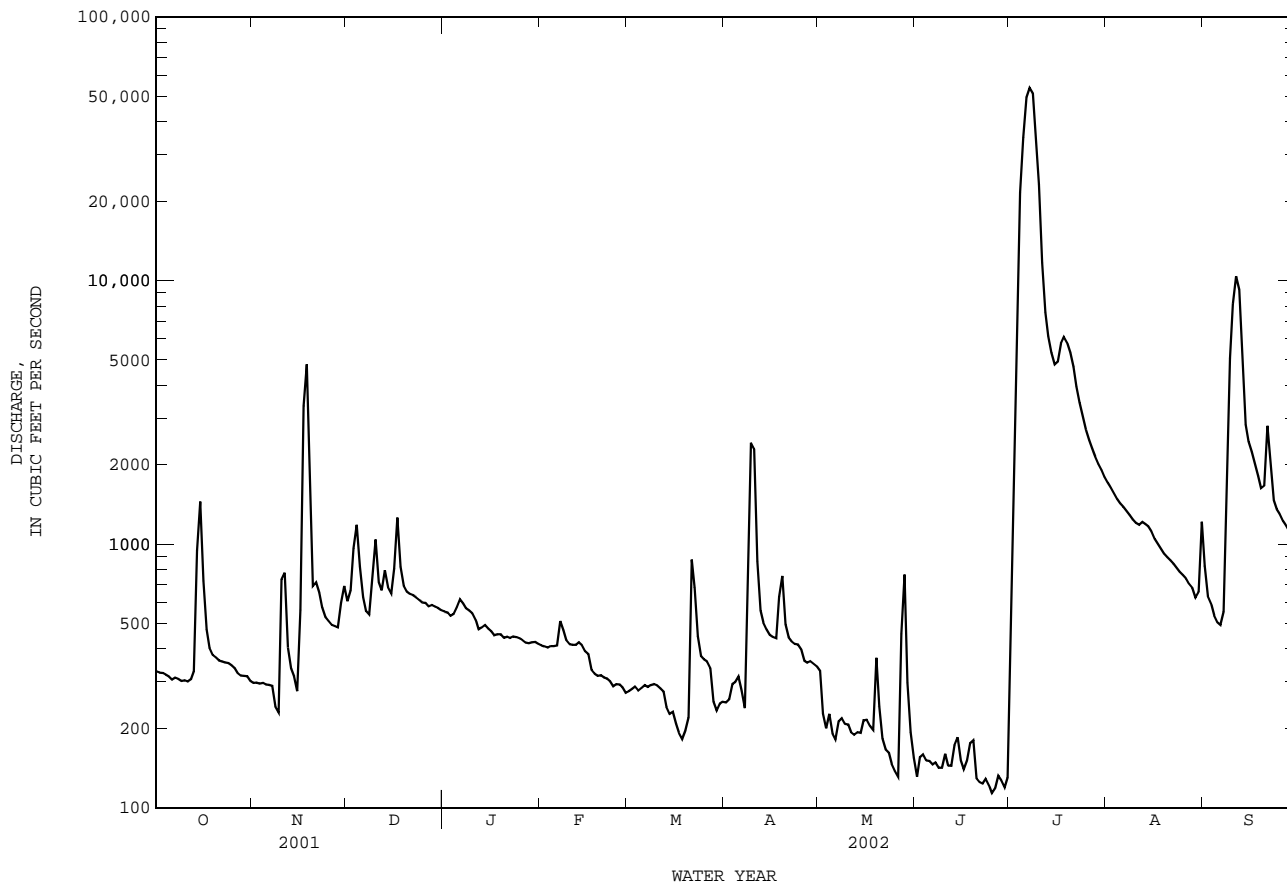
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2002, BY WATER YEAR (WY)

	MEAN	478.7	399.1	379.5	409.0	459.2	391.7	460.0	613.5	739.2	560.7	301.5	505.7
MAX	4731	1592	2668	2705	4803	3536	2615	4303	10120	12140	1564	4100	
(WY)	1999	1977	1992	1968	1992	1992	1992	1992	1987	2002	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	

08183500 San Antonio River near Falls City, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1925 - 2002	
ANNUAL TOTAL	196299		602464		476.6	
ANNUAL MEAN	537.8		1651		2253	
HIGHEST ANNUAL MEAN					92.0	
LOWEST ANNUAL MEAN					1992	
HIGHEST DAILY MEAN	4800	Sep 2	53800	Jul 7	53800	Jul 7 2002
LOWEST DAILY MEAN	80	Jul 23	114	Jun 25	19	Jun 27 1956
ANNUAL SEVEN-DAY MINIMUM	88	Jul 22	123	Jun 20	23	Jun 8 1956
MAXIMUM PEAK FLOW			54000	Jul 7	54000	Jul 7 2002
MAXIMUM PEAK STAGE			a34.74	Jul 7	a34.74	Jul 7 2002
ANNUAL RUNOFF (AC-FT)	389400		1195000		345300	
10 PERCENT EXCEEDS	800		2360		838	
50 PERCENT EXCEEDS	459		445		253	
90 PERCENT EXCEEDS	144		182		93	

e Estimated
a From floodmark.



GUADALUPE RIVER BASIN

08183850 Cibolo Creek at Interstate Highway 10 above Boerne, TX

LOCATION.--Lat 29°48'52", long 98°45'12", Kendall County, Hydrologic Unit 12100304, on right bank between westbound Interstate Highway 10 bridge and frontage road bridge, 600 ft downstream from Ranger Creek, 0.7 mi downstream from Boerne Lake, and 1.9 mi northwest of Boerne.

DRAINAGE AREA.--29.0 mi².

PERIOD OF RECORD.--Oct. 1995 to Apr. 1996 (discharge measurements only), May 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,428.50 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Oct. 1995, flow has been regulated. No known diversions. No flow at times.

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	7.1	18	e13	8.8	4.3	7.8	2.5	4.8	734	44	2.7
2	4.5	7.3	35	e13	8.2	5.2	7.0	2.4	3.7	1190	40	2.6
3	4.3	7.5	34	e13	7.9	3.6	5.8	2.3	2.8	3750	35	2.4
4	4.4	7.4	29	13	8.0	3.3	4.6	2.0	2.1	3540	31	2.1
5	4.4	7.0	27	26	10	3.4	4.1	2.1	1.4	2760	29	2.0
6	4.1	6.6	26	22	11	3.9	4.4	1.8	1.2	818	16	2.0
7	3.6	6.1	24	19	9.5	4.6	10	1.7	1.1	743	18	2.7
8	3.7	6.6	52	18	9.2	5.3	13	1.5	1.0	702	32	109
9	3.9	7.0	36	17	8.4	5.3	9.1	1.4	0.93	687	32	132
10	4.1	6.5	32	17	8.0	3.9	8.1	1.4	0.80	662	32	79
11	25	6.5	36	15	6.6	4.2	7.2	1.3	0.71	638	35	51
12	18	6.1	37	14	6.7	4.8	7.4	1.2	0.82	368	29	38
13	84	6.2	33	13	6.8	4.6	6.6	1.6	0.91	187	26	31
14	34	7.1	30	13	6.9	4.7	6.8	1.3	0.88	180	25	26
15	24	436	31	12	6.4	5.0	6.6	1.3	0.93	296	24	25
16	17	171	35	12	5.4	4.5	6.8	1.3	0.97	240	24	23
17	13	89	30	13	5.3	4.6	6.5	1.6	0.82	224	24	22
18	12	61	28	12	5.6	5.6	6.0	1.4	0.80	187	23	21
19	12	49	25	12	6.5	6.8	5.5	1.3	0.85	139	23	27
20	11	43	24	11	5.6	7.8	5.1	1.4	0.78	115	23	24
21	10	37	24	11	5.4	5.9	4.7	1.4	0.75	100	23	20
22	9.9	33	24	11	5.2	4.6	4.6	1.5	0.88	87	23	18
23	9.4	32	22	12	4.8	4.2	4.3	1.4	1.3	78	23	16
24	9.0	28	20	12	4.8	4.6	4.0	1.4	0.38	71	23	15
25	7.7	24	19	10	5.0	4.8	3.8	1.4	0.65	64	23	14
26	6.7	24	19	10	5.0	3.9	3.8	5.3	0.84	58	13	14
27	6.3	22	18	9.9	3.4	3.5	3.4	1.3	0.90	52	1.7	13
28	6.4	20	17	10	3.5	3.7	3.2	49	1.0	48	1.7	13
29	6.2	20	16	11	---	4.0	3.0	16	1.2	44	2.3	13
30	6.4	19	15	11	---	11	2.7	10	291	51	2.4	12
31	6.8	---	e14	11	---	9.1	---	6.9	---	46	2.6	---
TOTAL	376.8	1203.0	830	416.9	187.9	154.7	175.9	128.4	327.20	18859	703.7	796.8
MEAN	12.15	40.10	26.77	13.45	6.711	4.990	5.863	4.142	10.91	608.4	22.70	26.56
MAX	84	436	52	26	11	11	13	49	291	3750	44	132
MIN	3.6	6.1	14	9.9	3.4	3.3	2.7	1.2	0.38	44	1.7	2.0
AC-FT	747	2390	1650	827	373	307	349	255	649	37410	1400	1580

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

	MEAN	10.43	23.03	10.48	7.809	10.15	20.18	16.32	8.243	48.36	95.33	8.164	9.199
MAX	26.1	49.0	26.8	17.5	22.4	73.8	56.8	22.5	313	608	22.7	29.0	
(WY)	2001	1999	2002	2001	2001	1998	1997	1997	1997	2002	2002	2001	
MIN	0.24	0.30	0.081	0.12	0.47	0.19	0.26	0.88	0.48	0.066	0.25	0.055	
(WY)	1997	1997	2000	2000	2000	2000	2000	2000	1996	1996	1996	2000	

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1996 - 2002

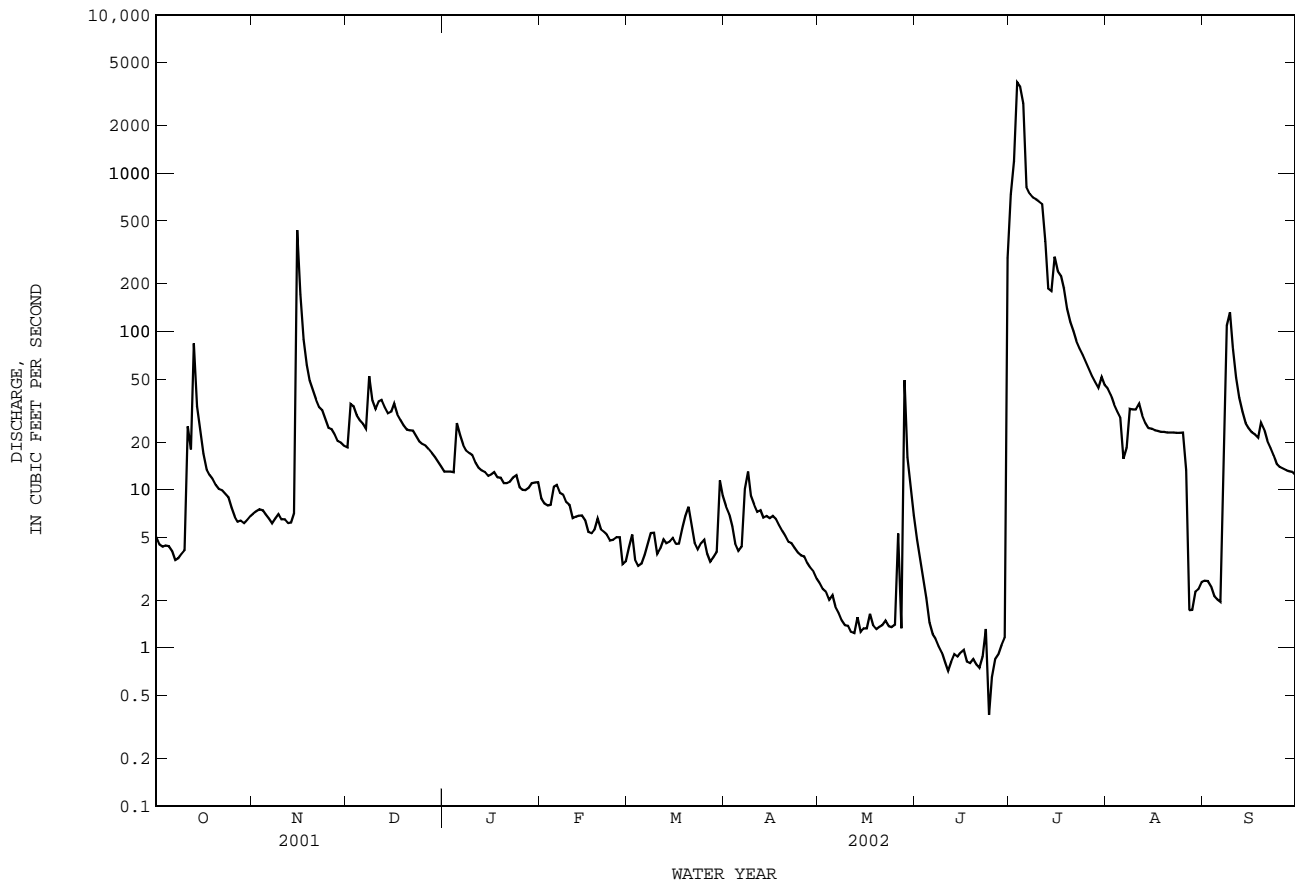
ANNUAL TOTAL	6596.30	24160.30	
ANNUAL MEAN	18.07	66.19	24.62
HIGHEST ANNUAL MEAN			66.2
LOWEST ANNUAL MEAN			0.45
HIGHEST DAILY MEAN	436	3750	4940
LOWEST DAILY MEAN	0.10	0.38	0.00
ANNUAL SEVEN-DAY MINIMUM	0.14	0.80	0.00
MAXIMUM PEAK FLOW		12700	120100
MAXIMUM PEAK STAGE		14.49	20.82
ANNUAL RUNOFF (AC-FT)	13080	47920	17830
10 PERCENT EXCEEDS	32	52	32
50 PERCENT EXCEEDS	13	9.2	4.3
90 PERCENT EXCEEDS	0.47	1.4	0.21

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08183850 Cibolo Creek at Interstate Highway 10 above Boerne, TX--Continued



GUADALUPE RIVER BASIN

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.--Mar. 1946 to current year.

REVISED RECORDS.--Figures for the annual peak discharge for water year 1960 in WSP 1813 are in error and should be disregarded; the correct date and magnitude are in WSP 1712. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 728.34 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. Considerable flow of Cibolo Creek enters the Edwards and associated limestones in the Balcones Fault Zone that crosses basin between this station and the Cibolo Creek at Interstate Highway 10 above Boerne (station 08183850). One known diversion. No flow at times.

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 Oct. 17, 1998.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	35	0.00	0.00
2	0.00	0.00	0.00	0.00	0.0	0.0	0.00	0.00	0.00	e19800	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	e0.0	0.00	0.00	0.00	e13300	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	12000	0.00	0.00
5	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	13100	0.00	0.00
6	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	4430	0.00	0.00
7	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	2080	0.00	0.00
8	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	1530	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1250	0.00	0.14
10	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	1090	0.00	1.2
11	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	982	0.00	0.00
12	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	805	0.00	0.00
13	12	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	516	0.00	0.00
14	0.66	0.00	0.00	0.00	0.0	0.0	0.00	0.00	0.00	403	0.00	0.00
15	0.00	769	0.00	0.0	0.00	0.00	0.00	0.00	0.00	428	0.00	0.00
16	0.00	5340	0.00	0.00	0.0	0.00	0.00	0.00	0.00	483	0.00	0.00
17	0.00	385	0.00	0.00	0.0	0.00	0.00	0.00	0.00	441	0.00	0.00
18	0.00	183	0.00	0.00	0.00	0.00	0.00	0.00	0.00	572	0.00	0.00
19	0.00	81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	388	0.00	0.00
20	0.00	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	295	0.00	0.00
21	0.00	3.3	0.00	0.00	0.0	0.00	0.00	0.00	0.00	233	0.00	0.00
22	0.00	0.50	0.00	0.00	0.0	0.00	0.00	0.00	0.00	182	0.00	0.00
23	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	140	0.00	0.00
24	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	101	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70	0.00	0.00
26	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	44	0.00	0.00
27	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	25	0.00	0.00
28	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	11	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	3.9	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	1.5	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.11	0.00	---
TOTAL	12.66	6783.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74739.51	0.00	1.34
MEAN	0.408	226.1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2411	0.000	0.045
MAX	12	5340	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19800	0.00	1.2
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00
AC-FT	25	13460	0.00	0.00	0.00	0.00	0.00	0.00	0.00	148200	0.00	2.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2002, BY WATER YEAR (WY)

MEAN	42.31	8.790	23.81	8.084	14.73	14.91	9.965	42.92	70.09	62.00	4.278	15.91
MAX	1722	226	1143	371	646	483	217	622	1567	2411	80.6	370
(WY)	1999	2002	1992	1968	1992	1992	1957	1972	1997	2002	1971	1952
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1948	1948	1948	1948	1947	1947	1946	1947	1947	1946	1946	1947

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1946 - 2002

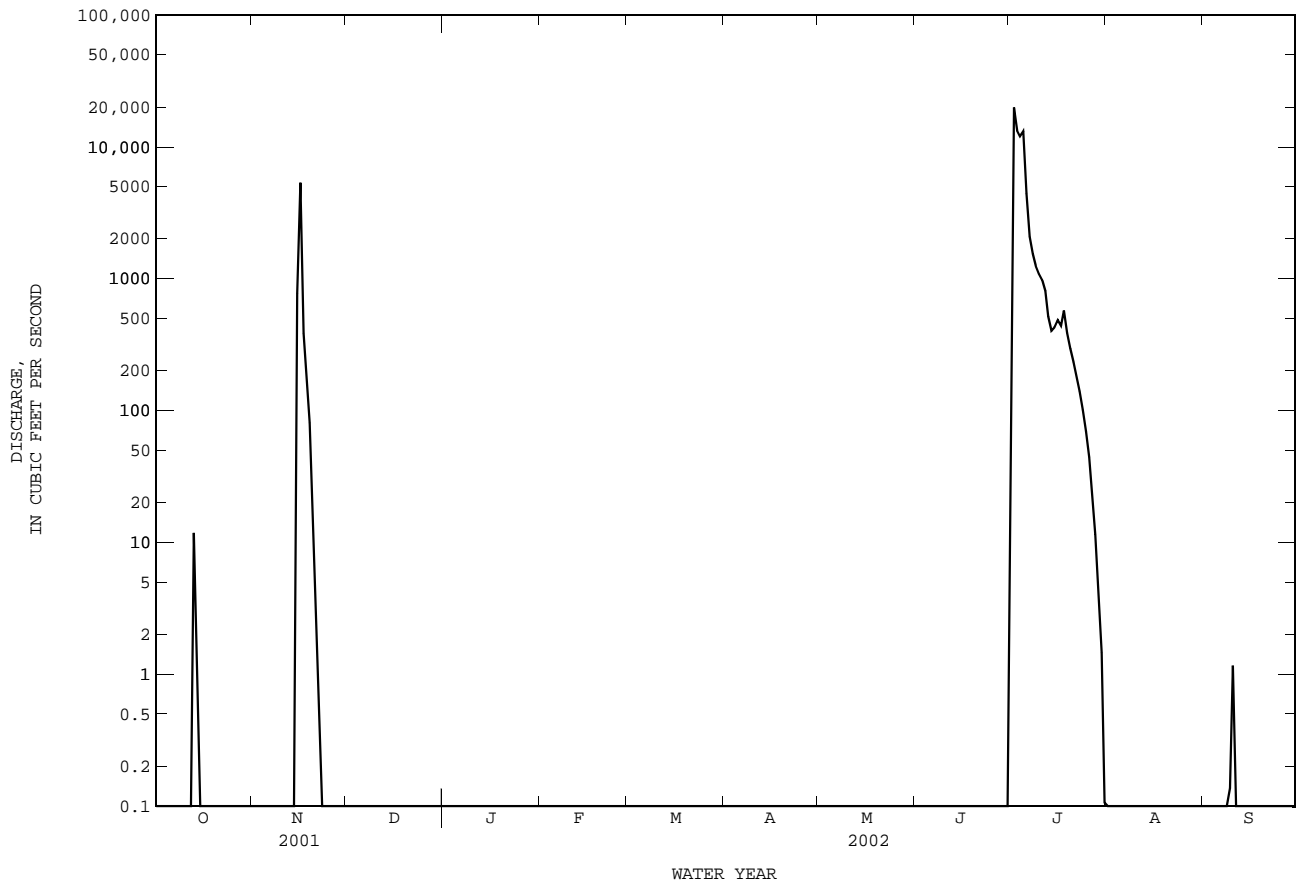
ANNUAL TOTAL	12625.95	81537.31	
ANNUAL MEAN	34.59	223.4	26.67
HIGHEST ANNUAL MEAN			257
LOWEST ANNUAL MEAN			0.000
HIGHEST DAILY MEAN	5340	Nov 16	19800
LOWEST DAILY MEAN	0.00	Jan 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00
MAXIMUM PEAK FLOW			43600
MAXIMUM PEAK STAGE			a23.58
ANNUAL RUNOFF (AC-FT)	25040	161700	19320
10 PERCENT EXCEEDS	0.00	3.5	0.00
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated.

c From rating curve extended above indirect measurement of 69,600 ft³/s.

a From floodmark.

08185000 Cibolo Creek at Selma, TX--Continued



GUADALUPE RIVER BASIN

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.

PERIOD OF RECORD.--Oct. 1930 to current year. Monthly discharge only for some periods, published in WSP 1312.

Water-quality records.--Chemical data: Oct. 1961 to Sept. 1996. Biochemical data: Oct. 1961 to Sept. 1996. Sediment data: Feb. 1966 to Sept. 1975. Specific conductance: Oct. 1968 to Sept. 1991. Water temperature: Oct. 1968 to Sept. 1991.

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 NGVD of 1929. 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. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. 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. 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. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 35 ft occurred in Oct. 1913 (discharge, about 35,000 ft³/s). Maximum stage since at least 1890, that of Oct. 19, 1998.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	10	215	70	65	55	52	67	54	1380	137	76
2	16	10	236	69	65	55	52	63	52	3420	132	76
3	15	10	1190	68	63	54	51	60	50	11100	122	74
4	15	9.5	1010	69	62	54	48	55	50	18900	119	73
5	15	9.6	339	80	64	54	46	54	48	16500	114	71
6	14	9.6	206	88	66	54	46	52	47	15700	111	70
7	14	9.3	151	90	67	55	48	50	50	13800	105	86
8	13	9.3	135	87	70	55	862	50	50	4050	99	106
9	13	10	278	79	68	55	4070	52	50	2330	100	286
10	13	12	372	75	65	52	616	51	50	1890	103	311
11	13	26	219	72	62	53	291	49	46	1600	100	402
12	12	17	921	70	60	52	203	49	44	1380	97	211
13	15	14	1090	68	60	52	151	46	46	1170	100	155
14	358	13	282	67	60	52	128	45	45	872	104	136
15	206	45	196	65	59	53	116	46	45	973	100	128
16	72	989	771	65	58	52	107	49	45	1060	95	123
17	41	5750	785	65	57	51	100	53	42	995	91	115
18	28	2110	278	64	57	52	107	e55	41	875	87	104
19	23	610	171	64	58	52	172	e51	44	797	85	103
20	20	404	128	63	59	56	131	e51	52	646	82	149
21	17	282	108	63	59	141	e103	e51	52	475	80	296
22	16	214	98	64	57	110	e91	e48	48	399	79	150
23	15	172	92	65	56	83	e81	48	47	350	76	102
24	14	146	87	66	55	69	e83	47	48	309	89	80
25	13	127	85	65	55	63	e74	49	47	274	84	67
26	12	114	80	64	54	59	e74	50	46	243	78	60
27	11	105	77	63	54	56	e76	53	50	218	77	55
28	10	99	77	64	54	55	e73	58	77	185	75	52
29	9.8	215	75	65	---	54	e69	67	66	167	75	50
30	9.9	348	74	67	---	54	e68	65	60	151	77	45
31	10	---	71	67	---	53	---	59	---	141	75	---
TOTAL	1070.7	11899.3	9897	2151	1689	1865	8189	1643	1492	102350	2948	3812
MEAN	34.54	396.6	319.3	69.39	60.32	60.16	273.0	53.00	49.73	3302	95.10	127.1
MAX	358	5750	1190	90	70	141	4070	67	77	18900	137	402
MIN	9.8	9.3	71	63	54	51	46	45	41	141	75	45
AC-FT	2120	23600	19630	4270	3350	3700	16240	3260	2960	203000	5850	7560

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2002h, BY WATER YEAR (WY)

	MEAN	142.5	96.52	101.5	93.40	110.6	69.36	159.9	234.1	253.3	139.7	57.46	163.7
MAX	3246	565	2156	1627	1756	860	1492	2230	2821	3302	909	1579	
(WY)	1999	1941	1992	1968	1992	1992	1977	1972	1987	2002	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	

08186000 Cibolo Creek near Falls City, TX--Continued

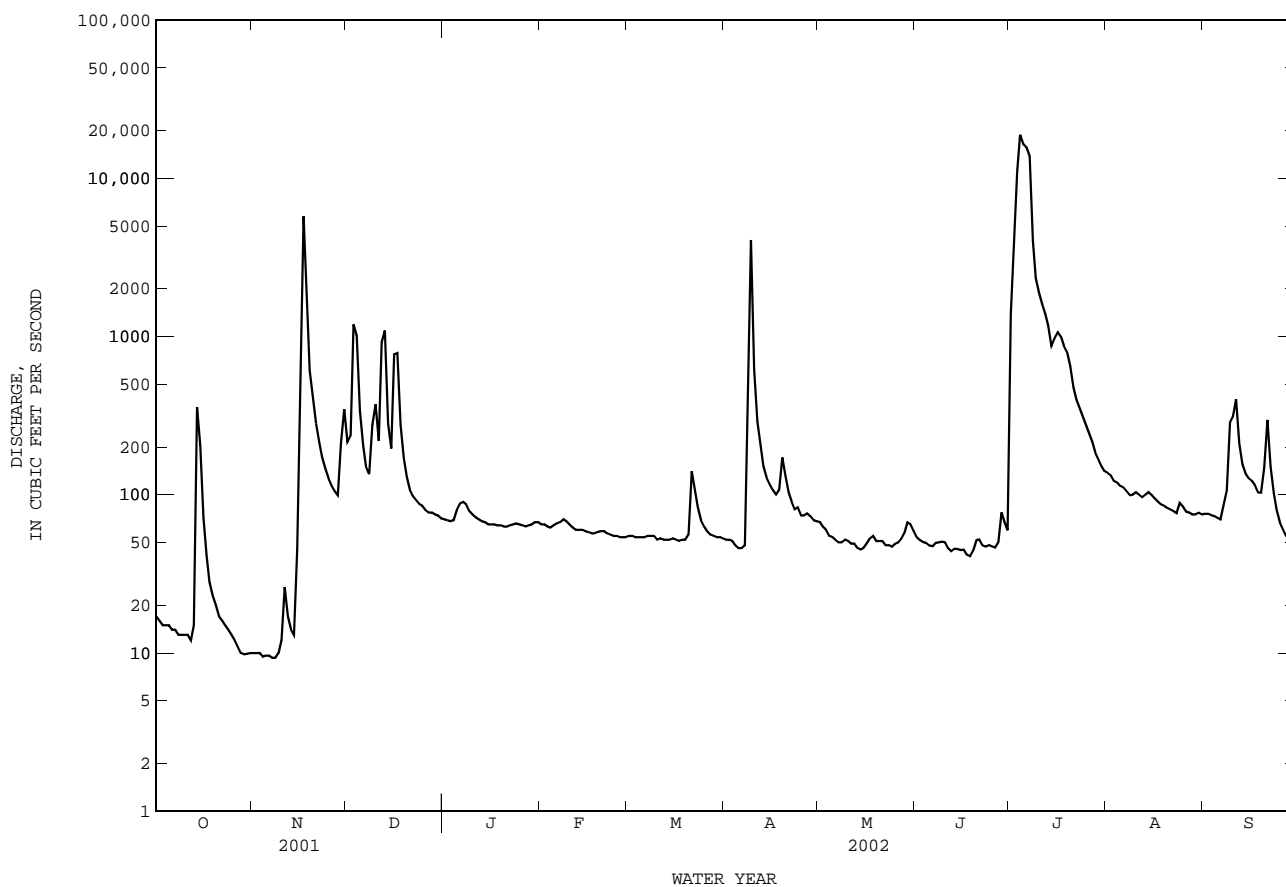
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1931 - 2002h	
ANNUAL TOTAL	81677.7		149006.0		135.0	
ANNUAL MEAN	223.8		408.2		717	
HIGHEST ANNUAL MEAN					10.4	
LOWEST ANNUAL MEAN					45000	
HIGHEST DAILY MEAN	7450	Aug 31	18900	Jul 4	Oct 19	1998
LOWEST DAILY MEAN	8.0	Aug 10	9.3	Nov 7	Jul 30	1956
ANNUAL SEVEN-DAY MINIMUM	8.8	Aug 9	9.6	Nov 2	Aug 4	1956
MAXIMUM PEAK FLOW			20900	Jul 4	c51200	Oct 19 1998
MAXIMUM PEAK STAGE			30.26	Jul 4	a39.84	Oct 19 1998
ANNUAL RUNOFF (AC-FT)	162000		295600		97790	
10 PERCENT EXCEEDS	278		400		126	
50 PERCENT EXCEEDS	50		67		27	
90 PERCENT EXCEEDS	12		17		9.8	

e Estimated

h See PERIOD OF RECORD paragraph.

c From rating curve extended above discharge measurements of 27,800 ft³/s and 31,400 ft³/s.

a From floodmark.



GUADALUPE RIVER BASIN

08188500 San Antonio River at Goliad, TX

LOCATION.--Lat 28°38'58", long 97°23'04", Goliad County, Hydrologic Unit 12100303, on right downstream bank 300 ft below 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.

PERIOD OF RECORD.--June 1924 to Mar. 1929, Feb. 1939 to current year.

Water-quality records.--Chemical data: Dec. 1941 to Dec. 1942, Nov. 1944 to Sept. 1946, Sept. 1958 to Sept. 1996. Bio-chemical data: Jan. 1968 to Sept. 1996. Pesticide data: Jan. 1968 to May 1982. Sediment data: Apr. 1959, Oct. 1974 to Aug. 1994.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 91.08 ft above NGVD of 1929. Prior to Mar. 31, 1929, nonrecording gage at Texas and New Orleans Railroad Co. bridge 1.1 mi upstream at same datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since installation of gage in 1924, at least 10% of contributing drainage area has been regulated. Flow also 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. There are many diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in Oct. 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.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	730	549	1170	804	614	449	412	526	315	304	2270	1060
2	700	538	1440	786	595	440	411	520	274	1430	2150	1210
3	679	532	3790	780	588	439	412	492	255	5470	2050	928
4	669	530	3210	766	580	442	414	404	271	8640	1960	815
5	660	526	3030	768	574	446	443	372	274	11400	1860	779
6	674	520	2040	775	578	440	453	386	263	15600	1780	729
7	655	514	1340	787	576	449	467	347	264	26000	1720	709
8	624	514	1100	831	591	455	448	329	259	40100	1670	2430
9	618	513	1000	827	663	454	665	352	259	62000	1610	3160
10	610	468	1030	786	610	453	3760	355	254	60800	1560	3960
11	603	462	1710	774	570	453	5280	e344	255	46300	1510	6540
12	601	1090	1560	757	552	451	2380	e332	273	35100	1480	8110
13	626	861	1350	737	543	443	1170	e324	263	25000	1460	9680
14	630	629	2410	705	e535	433	929	314	259	16500	1460	10300
15	737	1020	1570	715	e528	407	838	318	290	11100	1440	6310
16	2010	4440	1170	711	e520	390	777	320	310	11700	1400	5370
17	1600	2080	1400	700	e512	390	739	347	290	13000	1330	3320
18	965	4210	2380	685	e504	373	723	367	255	e14800	1270	2560
19	780	7640	1820	674	e497	358	701	355	260	e13500	1220	2390
20	709	6380	1240	675	489	349	1060	362	296	e11100	1170	3050
21	677	2110	1060	665	483	366	922	472	310	e7970	1130	2280
22	658	1350	996	655	481	508	730	377	264	e6270	1100	2640
23	644	1240	961	657	472	1140	678	326	233	5180	1070	2850
24	634	1070	932	656	471	796	646	307	236	4430	1040	1960
25	625	957	905	655	463	625	632	301	236	3910	1010	1660
26	611	886	882	645	451	556	615	292	236	e3500	980	1530
27	599	850	866	637	452	536	592	279	227	e3180	959	1440
28	584	808	849	631	452	527	546	246	236	e2980	926	1360
29	568	798	836	620	---	499	542	692	264	e2820	894	1310
30	556	804	831	621	---	426	540	688	389	e2610	872	1250
31	551	---	818	622	---	408	---	408	---	e2460	816	---
TOTAL	22587	44889	45696	22107	14944	14901	28925	11854	8070	475154	43167	91690
MEAN	728.6	1496	1474	713.1	533.7	480.7	964.2	382.4	269.0	15330	1392	3056
MAX	2010	7640	3790	831	663	1140	5280	692	389	62000	2270	10300
MIN	551	462	818	620	451	349	411	246	227	304	816	709
AC-FT	44800	89040	90640	43850	29640	29560	57370	23510	16010	942500	85620	181900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2002h, BY WATER YEAR (WY)

	MEAN	841.3	645.3	547.7	574.2	682.8	531.0	756.2	1036	1148	801.6	408.8	997.5
MAX	7543	2747	4628	4309	7682	4379	4488	6169	15370	15330	1736	12050	
(WY)	1999	2001	1992	1968	1992	1992	1992	1992	1987	2002	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	

08188500 San Antonio River at Goliad, TX--Continued

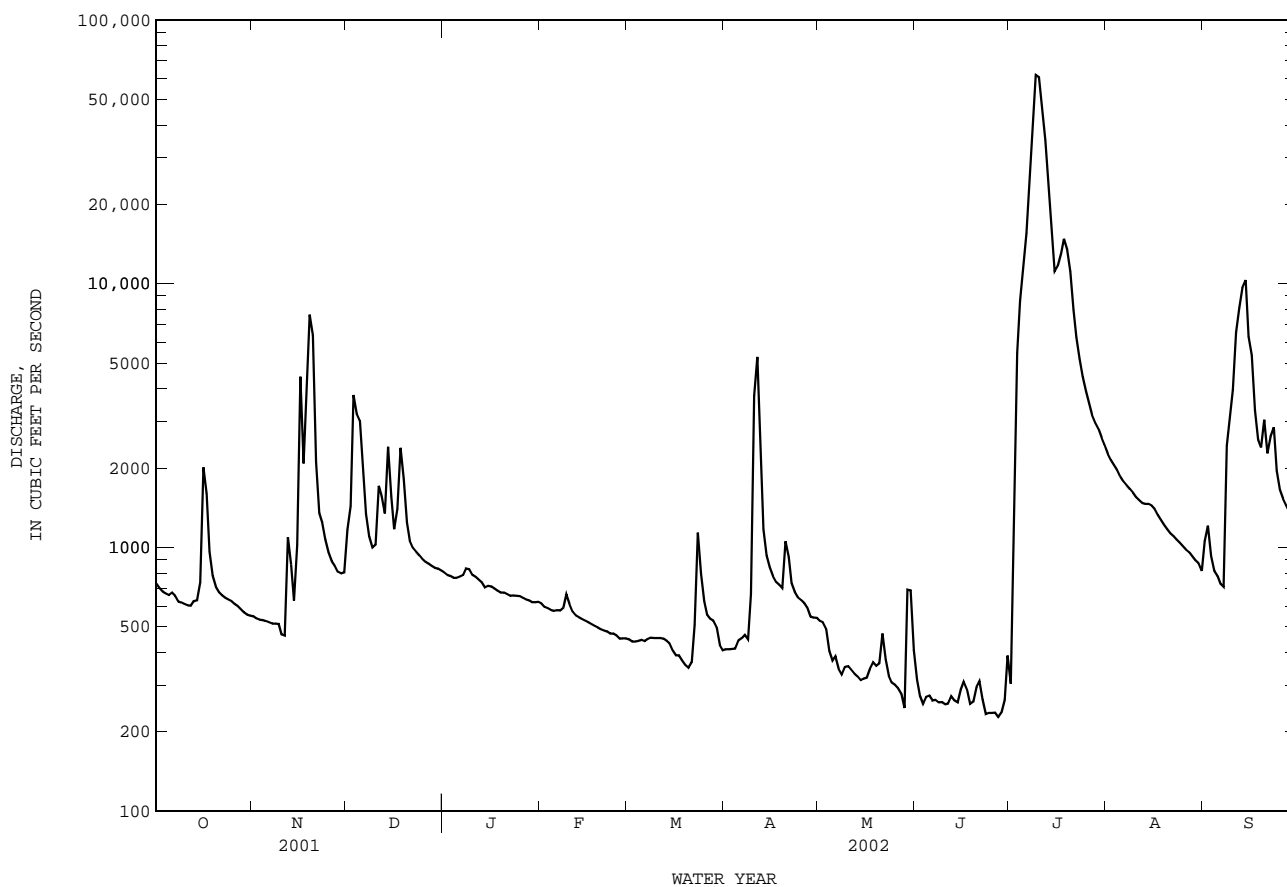
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1924 - 2002h	
ANNUAL TOTAL	463473		823984		755.1	
ANNUAL MEAN	1270		2257		3289	
HIGHEST ANNUAL MEAN					98.2	
LOWEST ANNUAL MEAN					121000	
HIGHEST DAILY MEAN	26500	Sep 2	62000	Jul 9	121000	Sep 23 1967
LOWEST DAILY MEAN	126	Jul 27	227	Jun 27	2.1	Jun 14 1956
ANNUAL SEVEN-DAY MINIMUM	131	Jul 25	238	Jun 22	5.0	Jun 12 1956
MAXIMUM PEAK FLOW			70600	Jul 9	1138000	Sep 23 1967
MAXIMUM PEAK STAGE			a52.81	Jul 9	a53.70	Sep 23 1967
ANNUAL RUNOFF (AC-FT)	919300		1634000		547000	
10 PERCENT EXCEEDS	1890		3770		1250	
50 PERCENT EXCEEDS	625		685		341	
90 PERCENT EXCEEDS	206		317		123	

e Estimated

h See PERIOD OF RECORD paragraph.

i From indirect measurement of peak flow.

a From floodmark.



GUADALUPE RIVER BASIN

08188600 Guadalupe-Blanco River Authority Calhoun Canal Pump Station near Long Mott, TX

LOCATION.--Lat 28°29'35", long 96°46'43", Calhoun County, Hydrologic Unit 12100403, 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.--Mar. 1968 to Feb. 1970 (monthly discharge only), Mar. 1970 to current year.

GAGE.--Totalizing flow meters on rated pumps. Mar. 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, nonrecording gage at site 0.5 mi downstream. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. 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. No flow at times.

COOPERATION.--Log of pumping station on Goff Bayou provided by the Guadalupe-Blanco River Authority.

DISCHARGE TOTAL, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	7.2	26	25	34	40	59	94	148	112	119	110
2	66	28	26	25	35	49	66	112	146	112	122	110
3	65	18	37	40	40	58	75	95	148	106	113	126
4	64	16	52	32	49	32	69	98	147	106	108	117
5	74	26	36	32	49	29	58	115	132	97	116	110
6	34	e22	42	25	32	44	57	109	144	90	116	85
7	51	e42	40	24	25	49	60	144	134	93	132	68
8	58	e109	26	39	25	49	55	139	125	94	128	110
9	62	95	26	49	25	43	48	128	125	88	125	120
10	59	72	26	49	24	49	47	138	152	86	120	115
11	64	72	25	33	42	53	32	124	165	83	125	111
12	51	69	26	24	32	60	56	129	149	85	137	112
13	43	73	26	25	48	57	85	139	143	64	152	113
14	51	72	26	60	24	36	72	161	145	64	152	113
15	52	71	26	80	25	25	77	139	154	59	152	101
16	59	18	27	62	24	25	98	121	157	53	133	96
17	51	0.0	26	64	25	29	98	107	136	53	135	96
18	79	12	40	72	24	41	103	95	132	52	135	106
19	57	16	41	72	41	41	102	89	145	51	106	96
20	54	25	26	41	25	73	96	97	156	52	110	95
21	37	25	26	25	38	81	99	108	154	52	121	84
22	51	25	42	49	36	81	96	126	150	52	115	84
23	51	25	27	32	25	79	110	85	149	59	109	63
24	76	41	26	25	25	79	72	88	153	51	111	70
25	80	38	26	33	25	87	97	96	150	58	110	60
26	90	26	41	25	43	79	90	104	127	50	123	60
27	68	26	51	34	33	84	82	93	122	50	127	60
28	35	26	42	25	41	82	89	93	124	50	128	70
29	7.3	26	50	25	---	73	83	102	113	57	127	68
30	0.0	26	49	50	---	73	92	138	106	68	127	55
31	0.0	---	31	50	---	64	---	145	---	85	113	---
TOTAL	1641.3	1147.2	1037	1246	914	1744	2323	3551	4231	2232	3847	2784
MEAN	52.95	38.24	33.45	40.19	32.64	56.26	77.43	114.5	141.0	72.00	124.1	92.80
MAX	90	109	52	80	49	87	110	161	165	112	152	126
MIN	0.00	0.00	25	24	24	25	32	85	106	50	106	55
AC-FT	3260	2280	2060	2470	1810	3460	4610	7040	8390	4430	7630	5520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2002h, BY WATER YEAR (WY)

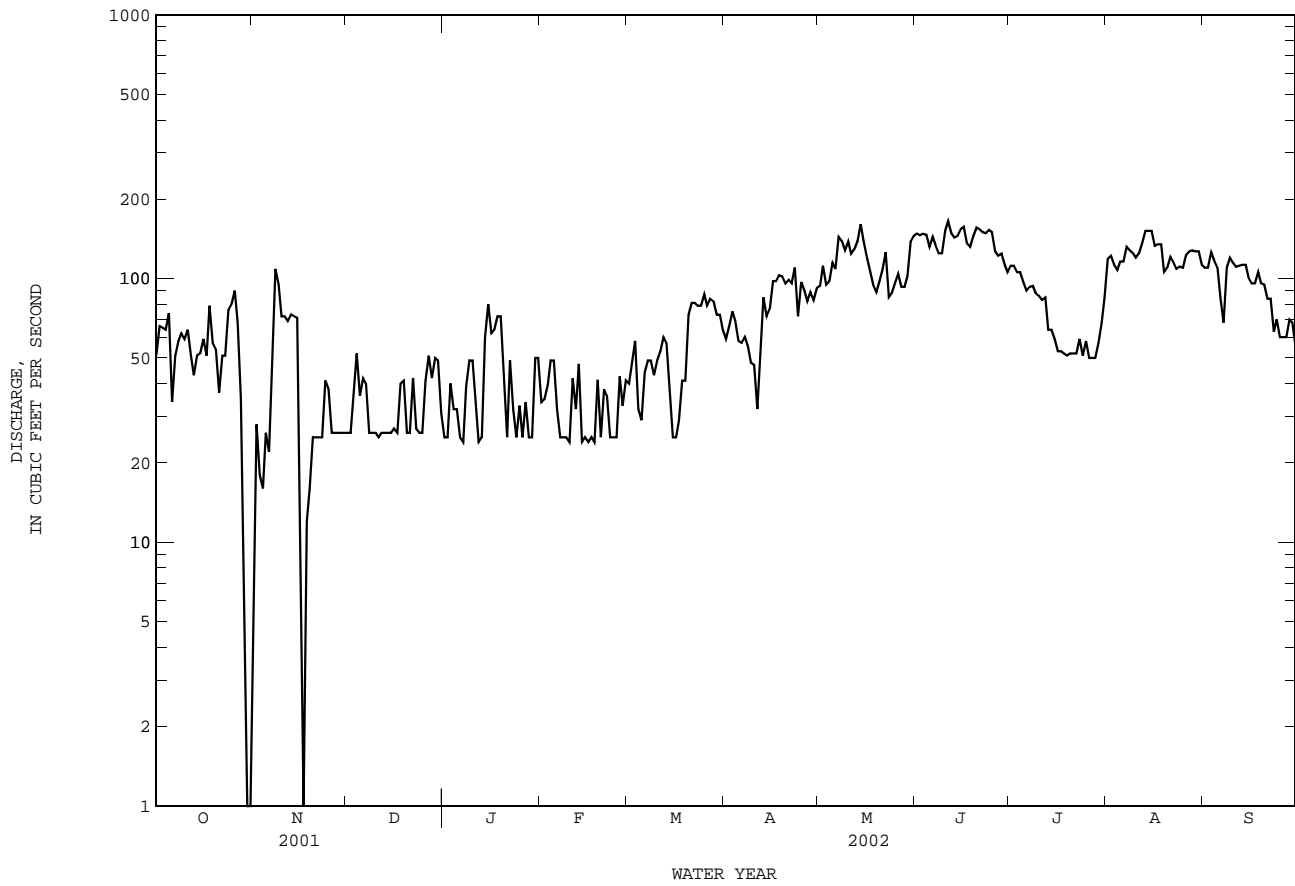
	MEAN	74.24	32.14	31.13	31.14	31.86	42.67	86.72	122.6	175.0	161.5	127.6	123.6
MAX	167	83.8	55.7	58.9	112	96.9	169	209	268	247	193	225	225
(WY)	1989	2000	1976	2000	2002	1975	1971	1978	1980	1973	1977	1980	1980
MIN	37.2	10.1	11.7	12.4	10.7	11.6	13.8	42.9	90.7	72.0	67.0	42.0	42.0
(WY)	1998	1982	1983	1982	1992	1983	1992	1997	1997	2002	1996	1998	1998

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1970 - 2002h	
ANNUAL TOTAL	26217.5		26697.5			
ANNUAL MEAN	71.83		73.14		87.10	
HIGHEST ANNUAL MEAN					126	
LOWEST ANNUAL MEAN					55.9	
HIGHEST DAILY MEAN	230	Jun 17	165	Jun 11	301	Jun 23 1977
LOWEST DAILY MEAN	0.00	Jan 18	0.00	Oct 30	0.00	Aug 3 1970
ANNUAL SEVEN-DAY MINIMUM	11	Oct 29	11	Oct 29	0.00	Dec 21 1970
MAXIMUM PEAK FLOW					311	
ANNUAL RUNOFF (AC-FT)	52000		52950		63100	
10 PERCENT EXCEEDS	122		132		192	
50 PERCENT EXCEEDS	66		64		68	
90 PERCENT EXCEEDS	26		25		15	

e Estimated

h See PERIOD OF RECORD paragraph.

08188600 Guadalupe-Blanco River Authority Calhoun Canal Pump Station near Long Mott, TX--Continued



GUADALUPE RIVER BASIN

08188800 Guadalupe River near Tivoli, TX
(Partial-record station)

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.

PERIOD OF RECORD.--Sept. 1965 to current year (daily maximum stage). Aug. 2000 to current year (daily mean discharges below 3,250 ft³/s).

Water-quality records.--Chemical data: Aug. 1965 to Aug. 1999. Biochemical data: Jan. 1968 to Sept. 1996. Pesticide data: Oct. 1970 to Aug. 1999. Specific conductance: Aug. 1965 to Oct. 1982. Water temperature: Aug. 1965 to Oct. 1982.

REVISED RECORDS.--WRD TX-68-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 0.04 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair. Interruptions in the record were due to malfunction of the instrument. Since installation of gage in Sept. 1965, at least 10% of contributing drainage area has been regulated. Many small diversions above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height (upstream from barrier), 14.8 ft Oct. 21, 1998. Maximum gage height (downstream from barrier), 14.7 ft Oct. 21, 1998. Maximum stage since at least 1936, that of Oct. 21, 1998.

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), 12.6 ft July 11. Maximum gage height (downstream from barrier), 12.3 ft July 11, 12.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	6.9	6.8	6.1	6.0	7.5	7.2	7.3	6.9	6.3	6.1	5.2	5.1
2	6.6	6.5	6.1	6.0	7.7	7.4	7.3	6.9	6.2	6.0	5.3	5.2
3	6.4	6.3	6.2	6.0	7.8	7.5	7.2	6.8	6.3	6.1	4.9	4.7
4	6.2	6.1	6.1	5.9	8.0	7.6	7.2	6.7	6.3	6.1	4.9	4.7
5	6.2	6.1	5.9	5.8	8.0	7.7	7.2	6.7	6.3	6.1	4.8	4.6
6	6.2	6.1	5.8	5.6	8.0	7.8	7.2	6.6	6.3	6.2	4.9	4.7
7	6.6	6.5	5.7	5.5	8.0	7.7	7.1	6.6	6.3	6.2	5.0	4.8
8	6.6	6.5	5.5	5.3	8.0	7.7	7.0	6.5	6.2	6.1	5.1	4.8
9	6.5	6.3	5.1	5.0	7.9	7.6	7.0	6.5	6.2	6.0	5.1	4.8
10	6.2	6.1	5.0	4.8	7.8	7.5	7.1	6.5	6.2	6.0	5.0	4.7
11	6.2	6.1	5.0	4.8	7.7	7.4	7.1	6.4	6.2	6.1	5.0	4.8
12	6.3	6.1	4.9	4.7	7.8	7.5	6.8	6.0	6.2	6.0	5.0	4.8
13	6.5	6.3	5.3	5.1	7.8	7.5	7.0	5.8	6.2	5.9	4.8	4.5
14	6.9	6.8	5.8	5.6	7.8	7.5	7.1	5.8	6.0	5.8	5.0	4.8
15	6.9	6.8	6.2	5.9	7.9	7.5	6.5	5.2	6.0	5.7	5.0	4.9
16	6.9	6.7	8.0	7.7	7.9	7.6	7.3	6.6	5.9	5.7	5.0	4.8
17	7.4	7.2	8.1	7.9	7.9	7.5	7.2	7.0	5.9	5.6	4.8	4.6
18	7.5	7.3	8.2	7.9	7.8	7.4	7.0	6.9	5.8	5.5	4.8	4.6
19	7.5	7.3	8.1	7.8	7.8	7.4	6.9	6.8	5.8	5.6	4.9	4.8
20	7.3	7.2	8.1	7.8	7.9	7.5	6.8	6.6	5.8	5.5	4.9	4.8
21	7.0	6.8	8.1	7.8	7.8	7.5	6.8	6.6	5.6	5.5	4.3	4.1
22	6.8	6.7	8.2	7.9	7.8	7.4	6.8	6.6	5.4	5.3	4.2	4.0
23	6.8	6.6	8.2	7.9	7.8	7.3	6.7	6.6	5.3	5.2	4.6	4.4
24	6.7	6.5	8.0	7.8	7.7	7.3	6.7	6.5	5.4	5.2	5.5	5.3
25	6.5	6.4	7.9	7.6	7.6	7.2	6.5	6.3	5.3	5.2	5.7	5.5
26	6.5	6.3	7.8	7.5	7.6	7.2	6.4	6.2	5.2	5.0	5.2	5.1
27	6.4	6.3	7.8	7.6	7.5	7.1	6.5	6.2	4.9	4.8	5.0	4.9
28	6.4	6.3	7.7	7.4	7.4	7.0	6.5	6.2	5.0	4.8	4.9	4.8
29	6.3	6.2	7.6	7.3	7.4	7.0	6.4	6.2	---	---	4.8	4.7
30	6.2	6.0	7.6	7.3	7.3	6.9	6.5	6.3	---	---	5.1	5.0
31	6.1	6.0	---	---	7.3	6.9	6.5	6.3	---	---	4.8	4.6
MAX	7.5	7.3	8.2	7.9	8.0	7.8	7.3	6.9	6.3	6.2	5.7	5.5
MIN	6.1	6.0	4.9	4.7	7.3	6.9	6.4	5.2	4.9	4.8	4.2	4.0

08188800 Guadalupe River near Tivoli, TX--Continued
(Partial-record station)

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	4.4	4.3	5.2	5.0	4.4	4.3	4.5	4.4	---	---	---	---
2	4.3	4.2	5.1	4.9	4.3	4.2	5.1	5.1	---	---	---	---
3	4.3	4.1	5.0	4.8	4.0	4.0	6.8	6.7	---	---	---	---
4	4.2	4.0	4.7	4.5	4.0	4.0	7.6	7.4	---	---	---	---
5	4.3	4.2	4.5	4.3	3.8	3.8	7.9	7.8	---	---	7.7	7.6
6	4.5	4.4	4.5	4.2	3.6	---	8.1	7.9	7.7	7.5	7.7	7.5
7	4.7	4.6	4.4	4.1	3.5	---	8.2	8.0	7.7	7.5	7.7	7.6
8	4.9	4.8	4.5	4.2	3.4	---	8.5	8.3	7.6	7.4	7.7	7.6
9	5.4	5.3	4.5	4.2	3.6	---	9.8	9.3	7.6	7.4	8.0	7.8
10	6.5	6.3	4.4	4.2	3.6	---	12.0	11.7	7.9	6.2	8.2	8.0
11	7.3	7.1	4.5	4.3	3.6	---	12.6	12.3	8.0	6.2	8.2	8.0
12	7.8	7.5	4.5	4.3	3.4	---	12.5	12.3	---	---	8.2	8.0
13	7.9	7.6	4.3	4.0	3.4	---	12.0	11.8	---	---	8.2	8.0
14	7.8	7.6	3.8	3.5	3.3	---	11.3	11.1	---	---	8.3	8.1
15	7.7	7.4	3.7	3.6	3.0	---	10.6	10.4	---	---	8.4	8.2
16	7.5	7.2	4.0	4.0	3.4	---	---	---	---	---	8.4	8.2
17	7.4	7.0	4.1	4.0	3.0	---	---	---	---	---	8.4	8.3
18	7.2	6.8	3.8	3.7	2.7	---	---	---	---	---	8.4	8.2
19	6.9	6.5	3.6	3.5	3.1	---	---	---	---	---	8.3	8.1
20	7.0	6.2	3.6	3.5	3.1	---	---	---	---	---	8.2	8.0
21	7.0	5.8	3.9	3.8	3.1	3.1	---	---	---	---	8.1	7.9
22	7.0	5.8	4.2	4.1	2.9	2.9	---	---	---	---	8.1	7.9
23	7.0	5.7	4.3	4.2	3.1	3.1	---	---	---	---	8.0	7.8
24	6.8	5.6	4.1	4.0	3.1	3.1	---	---	---	---	8.0	7.8
25	6.7	6.1	3.8	3.7	3.0	3.0	---	---	---	---	8.0	7.8
26	6.2	6.0	3.6	3.5	3.1	3.1	---	---	---	---	8.0	7.8
27	6.0	5.7	3.7	3.6	3.0	3.0	---	---	---	---	7.9	7.7
28	5.8	5.6	3.7	3.6	2.9	2.9	---	---	---	---	7.8	7.6
29	5.5	5.3	3.8	3.7	3.1	3.1	---	---	---	---	7.8	7.6
30	5.4	5.2	3.6	3.5	4.1	4.1	---	---	---	---	7.7	7.5
31	---	---	4.3	4.3	---	---	---	---	---	---	---	---
MAX	7.9	7.6	5.2	5.0	4.4	---	---	---	---	---	---	---
MIN	4.2	4.0	3.6	3.5	2.7	---	---	---	---	---	---	---

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

[illegible]

GUADALUPE RIVER BASIN

08188800 Guadalupe River near Tivoli, TX--Continued
(Partial-record station)

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	583	1300	2750	2550	2550	2360	2360	2670	2110	1500	746	3110
2	601	1140	2740	2490	2610	2360	2320	2550	2010	1340	811	---
3	509	1060	2740	2410	2630	2360	2340	2450	1980	1280	780	---
4	479	987	2720	2390	2580	2400	2320	2390	1910	1190	786	---
5	467	1140	2700	2340	2580	2460	2300	2330	1880	1200	742	---
6	482	2240	2650	2330	2540	2500	2250	2460	1840	1370	801	---
7	542	2530	2610	2280	2530	2580	2200	2720	1760	1200	730	---
8	518	2870	2580	2320	2480	2630	2220	2890	1660	1240	740	---
9	456	2980	2540	2300	2470	2640	2200	2850	1580	1130	819	---
10	526	3000	2530	2270	2490	2580	2130	2780	1560	1070	803	---
11	560	3010	2490	2400	2520	2540	2140	2710	1450	995	661	---
12	716	2890	2440	2490	2470	2520	2190	e2660	1370	1070	703	---
13	1050	2820	2480	2420	2440	2550	2240	e2630	1390	1030	692	---
14	1170	2810	2480	2390	2420	2520	2210	e2580	1370	948	703	3000
15	1020	2810	2430	2420	2440	2460	2230	e2540	1390	895	662	2870
16	850	2700	2400	2370	2390	2510	2220	e2530	1360	898	633	2880
17	776	2700	2480	2210	2400	2600	2170	e2440	1260	896	673	2870
18	766	2680	2550	2210	2440	2560	2140	e2350	1220	894	634	2890
19	841	2690	2560	2420	2420	2610	e2160	e2410	1210	940	634	2860
20	790	2720	2410	2710	2430	2630	e2040	e2450	1360	976	656	2800
21	706	2650	2370	2700	2440	2570	e2060	e2330	1470	945	729	2740
22	1000	2740	2400	2730	2450	2530	e2080	e2190	1410	934	779	2720
23	1180	2770	2390	2730	2420	2550	e2100	2320	1350	846	698	2750
24	1000	2740	2380	2740	2350	2560	2050	2290	1250	810	659	2720
25	888	2780	2340	2690	2370	2520	1990	2290	1150	762	672	2720
26	937	2730	2310	2620	2410	2490	2050	2290	1120	804	650	2790
27	1250	2700	2290	2600	2410	2420	2230	2290	1320	841	615	2800
28	1820	2750	2380	2530	2410	2370	2330	2310	1620	864	669	2720
29	1870	2810	2420	2480	---	2380	2600	2300	1790	868	720	2650
30	1860	2810	2470	2540	---	2380	2730	2260	1630	812	986	2680
31	1580	---	2570	2530	---	2350	---	2170	---	762	1790	---
TOTAL	27793	74557	77600	76610	69090	77490	66600	76430	45780	31310	23376	---
MEAN	896.5	2485	2503	2471	2468	2500	2220	2465	1526	1010	754.1	---
MAX	1870	3010	2750	2740	2630	2640	2730	2890	2110	1500	1790	---
MIN	456	987	2290	2210	2350	2350	1990	2170	1120	762	615	---
AC-FT	55130	147900	153900	152000	137000	153700	132100	151600	90800	62100	46370	---

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2620	2260	2970	2860	2440	1820	1490	1780	1600	1630	e2300	e2910
2	2520	2240	2960	2800	2460	1850	1440	1760	1430	1760	e2350	e2900
3	2420	2280	3010	2750	2440	1830	1430	1710	1300	2230	e2400	e2910
4	2380	2260	2990	2710	2450	1810	1370	1680	1240	2670	e2550	e2920
5	2300	2140	2990	2650	2450	1840	1410	1510	1170	2910	e2600	2930
6	2330	2050	3040	2640	2450	1820	1400	1440	1130	3140	2760	2850
7	2480	2090	3070	2630	2440	1830	1470	1420	1120	3250	2790	2790
8	2480	1900	3110	2630	2430	1760	1500	1370	1020	---	2830	2740
9	2350	1950	3130	2600	2390	1820	1750	1340	980	---	2430	2720
10	2260	1880	3120	2590	2410	1730	2260	1320	1070	---	2120	2670
11	2170	1820	3030	2460	2440	1730	2550	1270	1000	---	2320	2820
12	2130	1810	2960	2290	2450	1730	2530	1250	913	---	e2400	2800
13	2190	1870	3020	2320	2400	1660	2820	1280	1020	---	e2500	2930
14	2490	2090	3120	2160	2320	1710	2870	1240	962	---	e2600	2990
15	2630	2040	3110	1860	2270	1750	2800	1180	875	---	e2700	3030
16	2620	2570	3030	2160	2300	1790	2720	1140	1040	---	e2800	3210
17	2710	3050	3040	2770	2270	1570	2590	1240	1030	---	e2900	3230
18	2740	3160	3060	2730	2210	1640	2490	1270	893	---	e3000	3120
19	2770	3220	3060	2680	2120	1500	2410	1230	923	---	e3100	2950
20	2740	3110	3090	2680	2030	1700	2150	1120	863	---	e3050	2920
21	2640	3190	3080	2660	2060	1640	2150	1190	1020	e3250	e3000	2880
22	2550	3220	3000	2580	2080	1600	2130	1210	934	e3000	e3000	2910
23	2520	3100	2990	2570	2030	1640	2090	1240	945	e2820	e2980	2920
24	2470	3030	3000	2560	2000	1820	2030	1200	982	e2700	e3000	2880
25	2470	3070	2990	2550	1950	1930	2160	1110	867	e2600	e3000	2780
26	2420	3020	2960	2510	1930	1860	2240	1080	804	e2550	e2950	2780
27	2380	3010	2950	2510	1950	1750	2120	1070	843	e2500	e2950	2800
28	2340	3050	2900	2500	1940	1710	2010	1110	946	e2450	e2900	2870
29	2290	3040	2880	2420	---	1650	1970	1070	835	e2400	e2920	2800
30	2320	3010	2900	2390	---	1600	1830	1110	1270	e2400	e2910	2770
31	2290	---	2870	2390	---	1570	---	1500	---	e2350	e2900	---
TOTAL	76020	76530	93430	78610	63110	53660	62180	40440	31025	---	85010	86730
MEAN	2452	2551	3014	2536	2254	1731	2073	1305	1034	---	2742	2891
MAX	2770	3220	3130	2860	2460	1930	2870	1780	1600	---	3100	3230
MIN	2130	1810	2870	1860	1930	1500	1370	1070	804	---	2120	2670
AC-FT	150800	151800	185300	155900	125200	106400	123300	80210	61540	---	168600	172000

e Estimated

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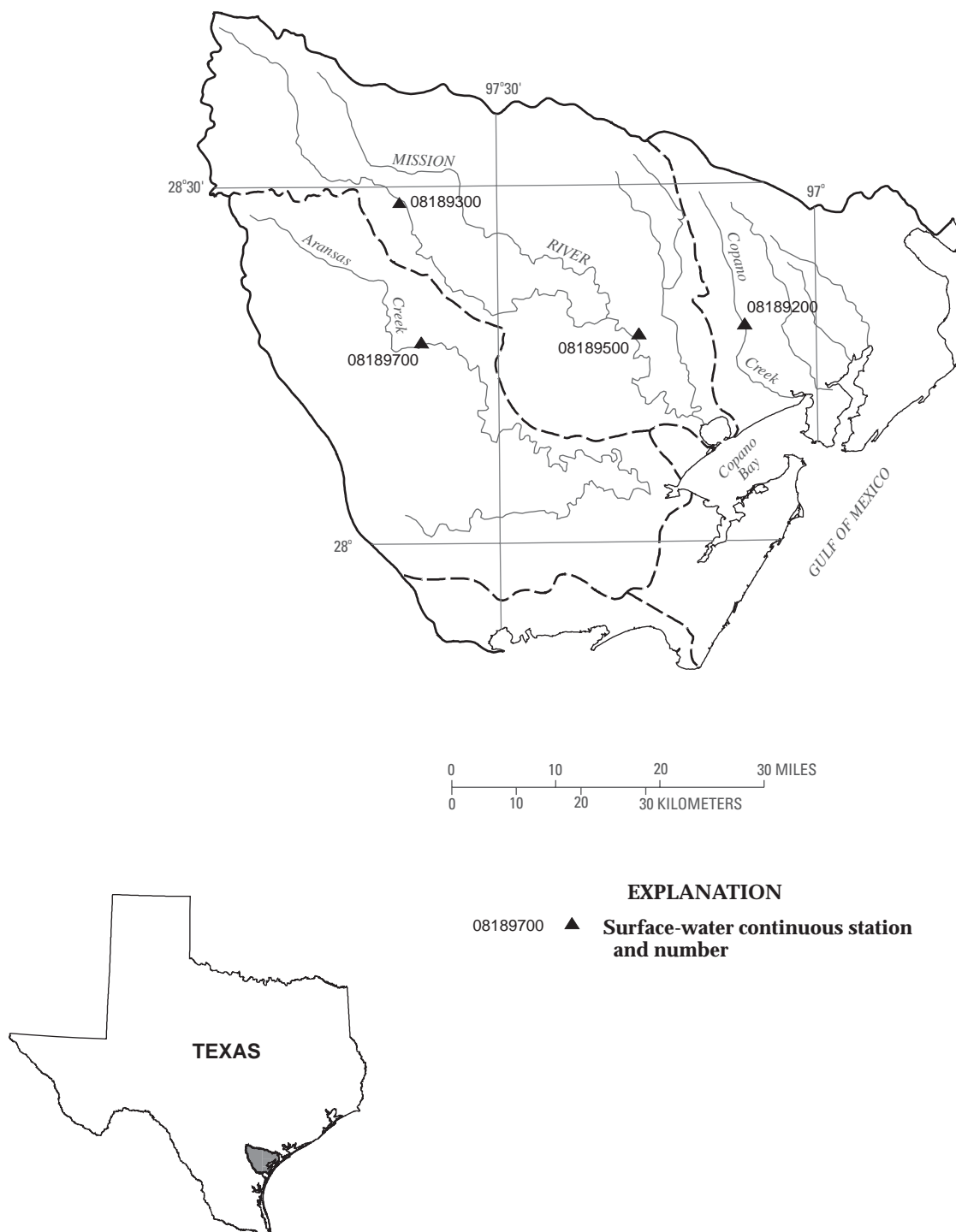


Figure 6.--Map showing location of gaging stations in the Copano, Mission and Aransas River Basins

08189200	Copano Creek near Refugio, TX	202
08189300	Medio Creek near Beeville, TX	204
08189500	Mission River at Refugio, TX	208
08189700	Aransas River near Skidmore, TX	210

COPANO CREEK BASIN

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 data: July 1970 to Dec. 1988. Biochemical data: July 1970 to Dec. 1988. Pesticide data: July 1970 to July 1981.

GAGE.--Water-stage recorder. Datum of gage is 17.25 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation or diversions. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1921, 22 ft in Sept. 1967, from information by local residents.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	8.9	9.5	0.00	e0.00	0.00	0.00	0.00	0.00	e37	0.00	0.00
2	0.00	2.6	10	0.00	e0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00
3	0.00	1.3	274	0.00	e0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00
4	0.00	0.72	440	0.00	e0.85	0.00	0.00	0.00	0.00	e0.00	0.00	0.00
5	0.00	0.39	289	0.04	e0.20	0.00	0.00	0.00	0.00	e0.00	0.00	0.00
6	1.1	0.26	147	0.52	0.05	0.00	0.00	0.00	0.00	e0.00	0.00	0.00
7	4.7	0.18	102	0.21	0.00	0.00	0.00	0.00	0.00	e570	0.00	0.00
8	2.8	0.13	76	0.02	0.00	0.00	0.00	0.00	0.00	e117	0.00	0.00
9	1.1	0.14	72	0.00	0.00	0.00	0.00	0.00	0.00	e63	0.00	5.7
10	0.43	0.19	66	0.00	0.00	0.00	0.00	0.00	0.00	e52	0.00	41
11	0.10	0.17	55	0.00	0.00	0.00	0.00	0.00	0.00	e49	0.00	38
12	22	9.4	77	0.00	0.00	0.00	0.00	0.00	0.00	e40	0.00	20
13	107	1.1	82	0.00	0.00	0.00	0.00	0.00	0.00	25	0.00	19
14	221	0.06	73	0.00	0.00	0.00	0.00	0.00	0.00	8.7	0.00	20
15	197	0.05	64	0.00	0.00	0.00	0.00	0.00	0.00	5.1	9.3	68
16	135	638	50	0.00	0.00	0.00	0.00	0.00	0.00	194	12	101
17	77	1090	39	0.00	0.00	0.00	0.00	0.00	0.00	680	11	157
18	41	1090	35	0.00	0.00	0.00	0.00	0.00	0.00	771	3.2	150
19	21	910	34	0.00	0.00	0.00	0.00	0.00	0.00	763	1.1	75
20	12	829	20	0.00	0.00	0.00	0.00	0.00	0.00	680	0.20	101
21	6.9	660	13	0.00	0.00	0.00	0.00	0.00	0.00	460	0.00	139
22	4.5	484	8.3	0.00	0.00	0.00	0.00	0.00	0.00	231	0.00	86
23	3.0	313	5.2	0.00	0.00	0.00	0.00	0.00	0.00	98	0.00	59
24	2.2	155	3.4	0.00	0.00	0.00	0.00	0.00	0.00	64	0.00	51
25	1.5	90	2.1	0.00	0.00	0.00	0.00	0.00	0.00	49	0.00	43
26	1.0	73	1.4	0.00	0.00	0.00	0.00	0.00	e0.00	39	0.00	35
27	0.62	50	0.91	0.0	0.00	0.00	0.00	0.00	e0.00	25	0.00	23
28	0.28	31	0.58	e0.00	0.00	0.00	0.00	0.00	e0.00	6.9	0.00	12
29	14	18	0.34	e0.00	---	0.00	0.00	0.00	e0.00	1.9	0.00	3.9
30	15	13	0.17	e0.00	---	0.00	0.00	0.00	e13	0.63	0.00	1.7
31	22	---	0.02	e0.00	---	0.00	---	0.00	---	0.04	0.00	---
TOTAL	914.23	6469.59	2049.92	0.79	1.10	0.00	0.00	0.00	13.00	5030.27	36.80	1249.30
MEAN	29.49	215.7	66.13	0.025	0.039	0.000	0.000	0.000	0.433	162.3	1.187	41.64
MAX	221	1090	440	0.52	0.85	0.00	0.00	0.00	13	771	12	157
MIN	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	1810	12830	4070	1.6	2.2	0.00	0.00	0.00	26	9980	73	2480

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2002, BY WATER YEAR (WY)

	MEAN	69.73	50.44	22.42	23.57	35.14	35.56	25.87	57.07	60.81	42.33	3.359	89.63
MAX	551	589	240	189	459	524	229	508	499	416	29.9	1028	
(WY)	1984	1982	1992	1979	1992	1997	1992	1981	1981	1990	1998	1971	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
(WY)	1978	1989	1971	1983	1971	1971	1971	1971	1971	1971	1974	1977	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

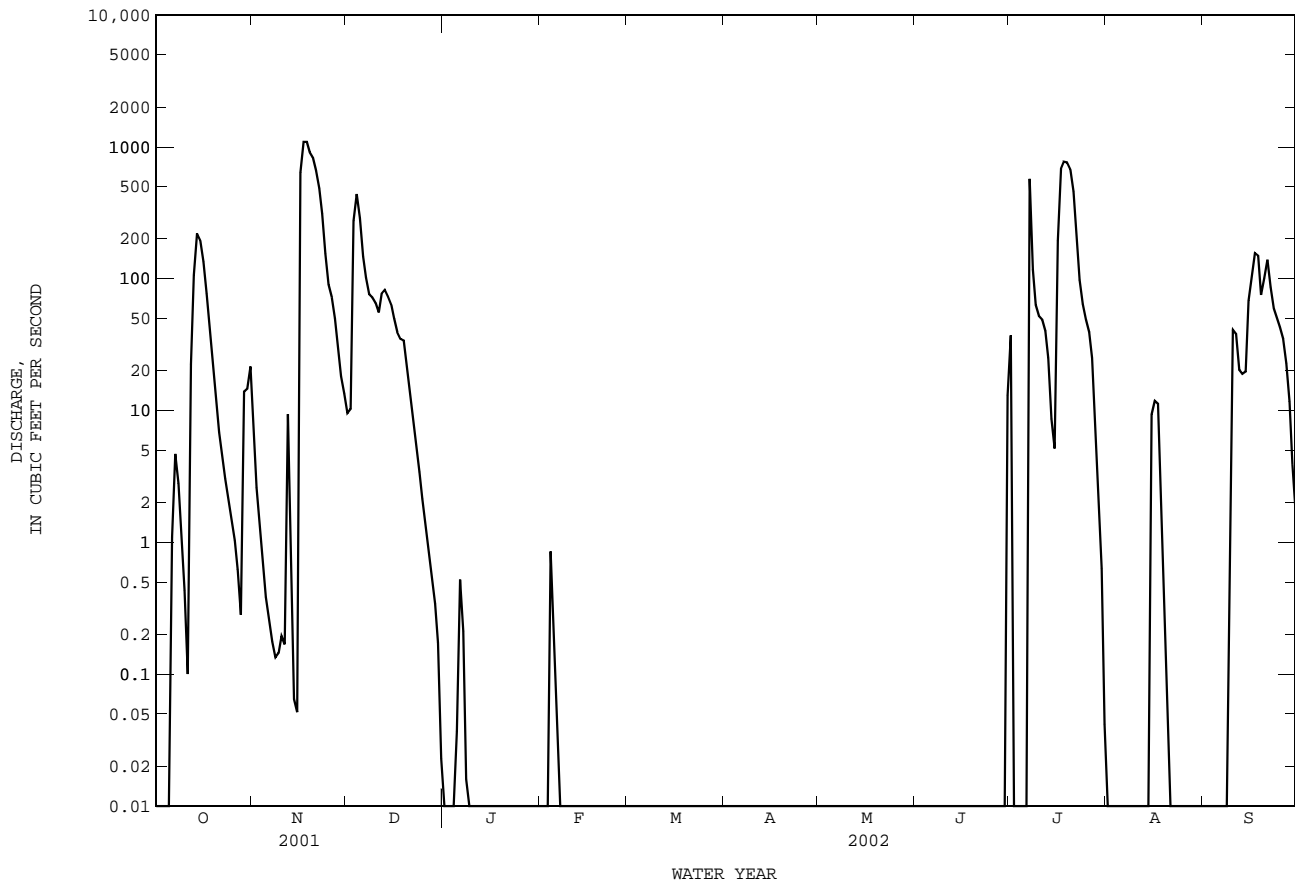
FOR 2002 WATER YEAR

WATER YEARS 1970 - 2002

ANNUAL TOTAL	20290.52	15765.00	
ANNUAL MEAN	55.59	43.19	43.06
HIGHEST ANNUAL MEAN			138
LOWEST ANNUAL MEAN			0.52
HIGHEST DAILY MEAN	1090	Nov 17	5960
LOWEST DAILY MEAN	0.00	Jan 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Feb 6	0.00
MAXIMUM PEAK FLOW			6300
MAXIMUM PEAK STAGE			21.00
ANNUAL RUNOFF (AC-FT)	40250	31270	31190
10 PERCENT EXCEEDS	132	79	62
50 PERCENT EXCEEDS	0.00	0.00	0.02
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

08189200 Copano Creek near Refugio, TX--Continued

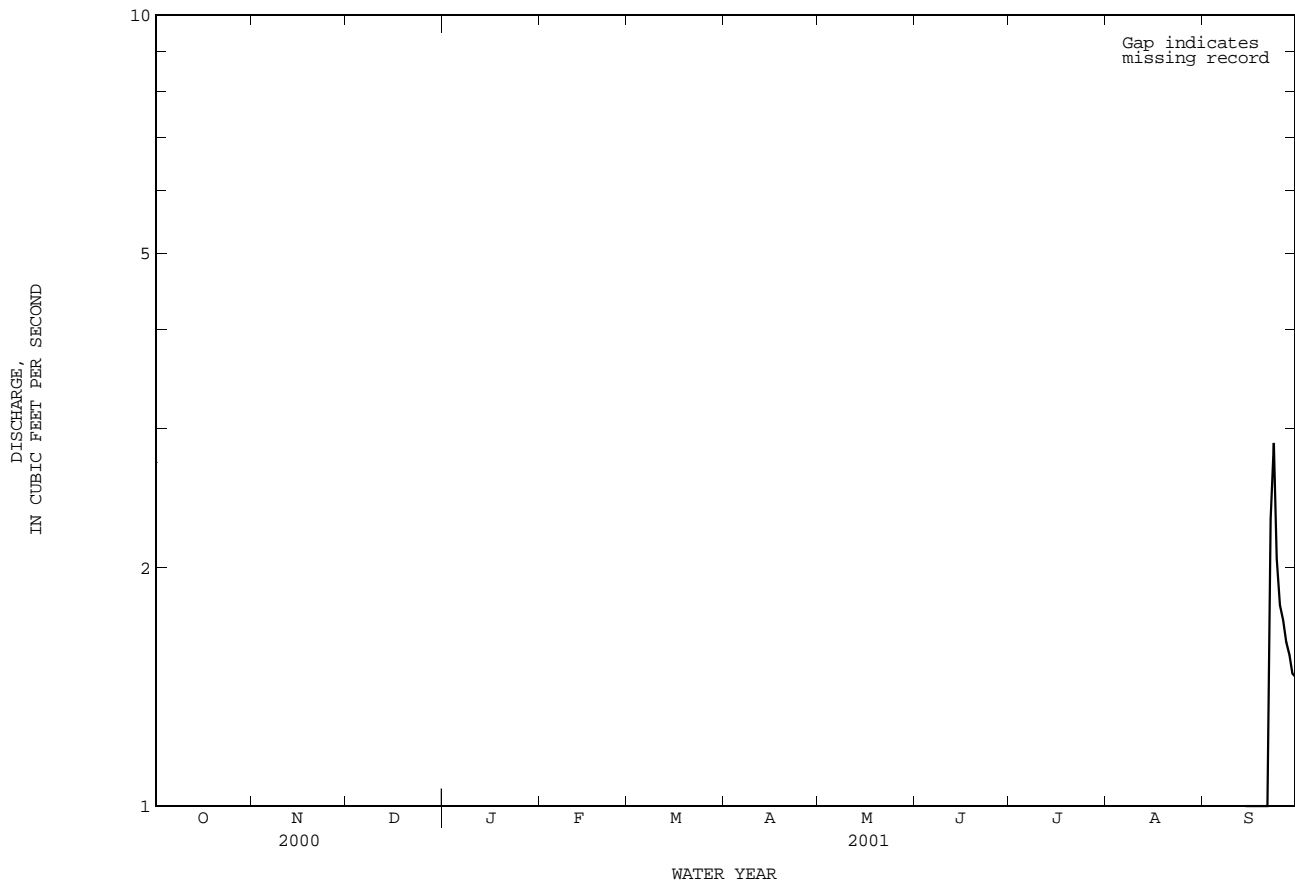


LOCATION.--Lat 28°28'58", long 97°39'23", Bee County, Hydrologic Unit 12100406, on left bank at downstream side of bridge on U.S. Highway 59, 8 mi northeast of Beeville, and 9 mi upstream from Parker Hollow Creek.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1914, that of Sept. 22, 1967. A stage of about 31 ft, discharge 25,500 ft³/s, occurred in Sept. 1919, from information from local resident.

[illegible]

08189300 Medio Creek near Beeville, TX--Continued



MISSION RIVER BASIN

08189300 Medio Creek near Beeville, TX--Continued

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	0.62	4.2	2.1	1.5	1.1	0.78	0.42	0.18	0.00	0.63	e0.00
2	1.4	0.66	64	2.0	1.6	1.1	0.80	0.39	0.12	0.00	0.60	e0.00
3	1.3	0.65	808	2.0	1.6	0.95	0.75	0.38	0.06	0.11	0.54	e0.00
4	1.3	0.62	34	2.0	1.5	0.90	0.70	0.36	0.0	11	0.51	e0.00
5	1.3	0.55	8.8	2.1	1.6	0.93	0.73	0.27	0.00	141	0.46	e0.00
6	1.3	0.50	5.8	2.0	1.5	1.0	0.86	0.31	0.00	589	0.43	e0.00
7	1.3	0.50	4.8	1.9	1.4	1.1	0.89	0.28	0.00	24	0.40	e0.00
8	1.3	0.50	4.5	1.9	1.5	1.1	0.93	0.25	0.00	6.7	0.37	e0.00
9	1.2	0.50	4.1	1.9	1.5	0.98	0.81	0.24	0.00	3.6	0.36	e0.00
10	1.2	0.51	3.8	2.0	1.5	0.84	0.77	0.21	0.00	11	0.36	e0.46
11	1.1	0.53	3.7	1.9	1.5	0.95	0.77	0.18	0.00	11	0.35	e0.45
12	1.1	0.52	3.6	1.8	1.5	0.95	0.76	0.15	0.00	4.4	0.35	e0.42
13	1.2	0.47	3.5	1.8	e1.5	0.92	0.73	0.12	0.00	2.6	0.41	e0.42
14	1.1	0.52	3.3	1.8	e1.4	1.0	0.72	0.08	0.00	1.9	0.39	e0.40
15	1.0	64	3.2	1.8	1.4	0.98	0.73	0.07	0.00	3.6	0.33	e0.41
16	0.93	8930	3.2	1.8	1.4	0.91	0.73	0.07	0.00	38	0.30	e3.1
17	0.90	1320	3.0	1.8	1.3	0.95	0.71	0.25	0.00	20	0.27	e2.4
18	0.87	98	3.0	1.8	1.4	0.95	0.68	1.1	0.00	5.7	0.24	e1.6
19	0.68	30	2.8	1.8	1.3	0.96	0.65	0.76	0.00	3.1	0.18	e1.9
20	0.66	11	2.7	1.7	1.2	0.89	0.66	0.45	0.00	2.1	0.12	e76
21	0.81	7.7	2.7	1.7	1.1	0.81	0.64	0.34	0.00	1.6	0.04	e64
22	0.79	6.5	2.7	1.8	1.1	0.77	0.63	0.28	0.00	1.4	0.00	e1.4
23	0.80	5.9	2.6	1.8	1.1	0.81	0.61	0.24	0.00	1.2	0.00	e1.3
24	0.78	5.5	2.4	1.7	1.1	0.88	0.59	0.21	0.00	1.1	e0.00	e1.2
25	0.73	5.1	2.3	1.5	1.1	0.91	0.56	0.20	0.00	1.1	e0.00	e1.2
26	0.67	4.9	2.3	1.5	0.95	0.79	0.55	0.19	0.00	1.00	e0.00	e1.2
27	0.62	4.5	2.3	1.6	0.94	0.79	0.53	0.16	0.00	0.91	e0.00	e1.2
28	0.59	4.1	2.3	1.7	1.0	0.85	0.52	0.13	0.00	0.83	e0.00	e1.2
29	0.58	4.2	2.2	e1.6	---	0.88	0.48	0.14	0.00	0.79	e0.00	e1.2
30	0.57	4.0	2.2	e1.5	---	0.83	0.45	0.23	0.00	0.73	e0.00	e1.2
31	0.59	---	2.2	e1.7	---	0.76	---	0.23	---	0.67	e0.00	---
TOTAL	30.07	10513.05	1000.2	56.0	37.49	28.54	20.72	8.69	0.36	890.14	7.64	162.66
MEAN	0.970	350.4	32.26	1.806	1.339	0.921	0.691	0.280	0.012	28.71	0.246	5.422
MAX	1.4	8930	808	2.1	1.6	1.1	0.93	1.1	0.18	589	0.63	76
MIN	0.57	0.47	2.2	1.5	0.94	0.76	0.45	0.07	0.00	0.00	0.00	0.00
AC-FT	60	20850	1980	111	74	57	41	17	0.7	1770	15	323

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002h, BY WATER YEAR (WY)

	MEAN	9.702	24.69	3.506	2.250	7.219	1.523	15.93	17.38	14.68	2.454	3.624	142.2
MAX	42.5	350	32.3	9.62	86.4	15.9	110	116	63.0	28.7	37.5	2177	
(WY)	1977	2002	2002	1972	1965	1970	1977	1968	1973	2002	1964	1967	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1965	1965	1965	1963	1963	1962	1962	1962	1964	1962	1962	1963	

SUMMARY STATISTICS

FOR 2002 WATER YEAR

WATER YEARS 1962 - 2002h

ANNUAL TOTAL	12755.56		
ANNUAL MEAN	34.95	20.86	
HIGHEST ANNUAL MEAN		180	1967
LOWEST ANNUAL MEAN		0.62	1975
HIGHEST DAILY MEAN	8930	Nov 16	46300 Sep 22 1967
LOWEST DAILY MEAN	0.00	Jun 4	0.00 Mar 1 1962
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 4	0.00 Mar 1 1962
MAXIMUM PEAK FLOW	15300	Nov 16	c105000 Sep 22 1967
MAXIMUM PEAK STAGE	28.54	Nov 16	a38.68 Sep 22 1967
ANNUAL RUNOFF (AC-FT)	25300		15110
10 PERCENT EXCEEDS	4.1		5.4
50 PERCENT EXCEEDS	0.90		0.03
90 PERCENT EXCEEDS	0.00		0.00

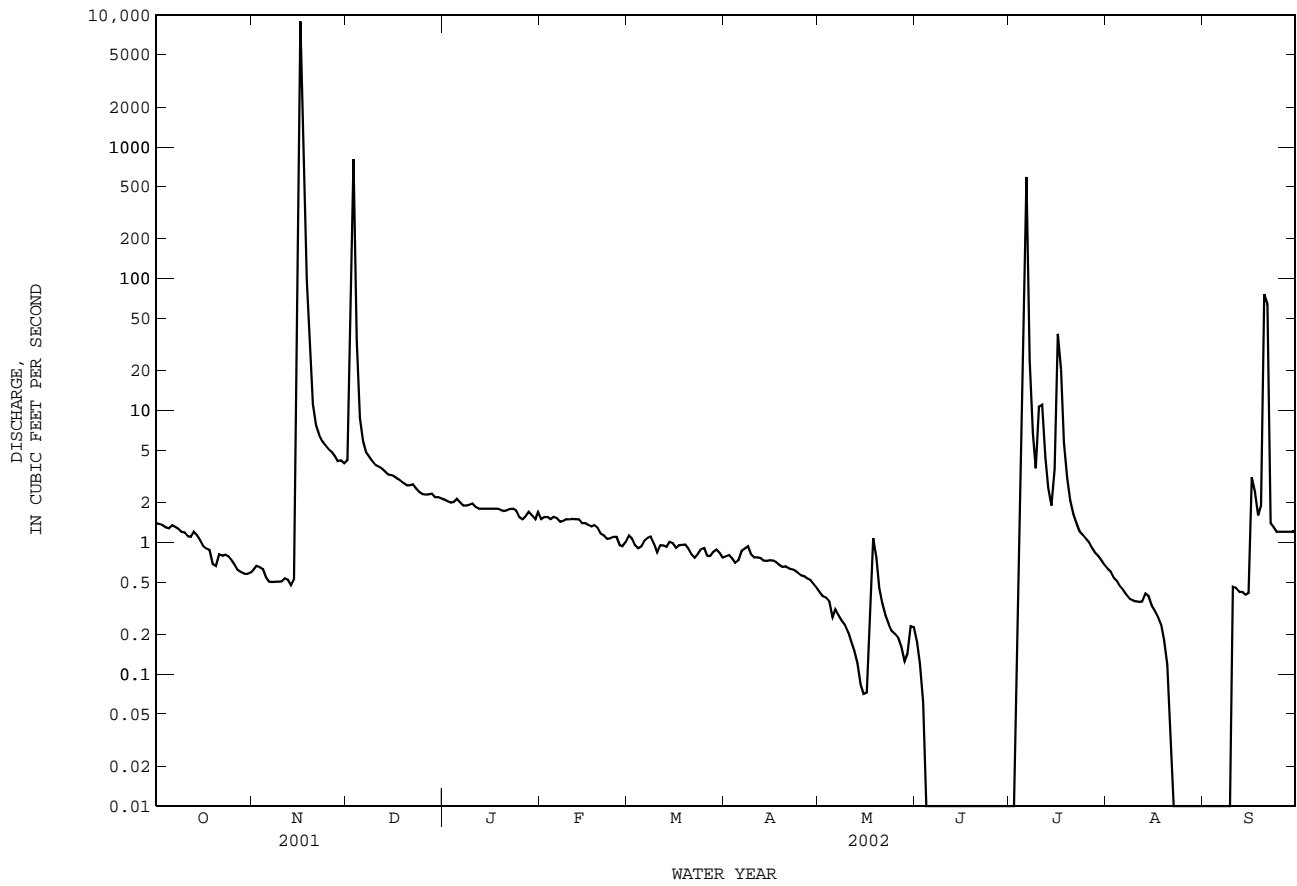
e Estimated.

h See PERIOD OF RECORD paragraph.

c From rating curve extended above indirect measurement of peak flow.

a From floodmark.

08189300 Medio Creek near Beeville, TX--Continued



MISSION RIVER BASIN

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 data: Sept. 1961 to Aug. 1993. Biochemical data: Jan. 1968 to Aug. 1993. Pesticide data: Oct. 1970 to Apr. 1979. Sediment data: Jan. 1978 to Aug. 1993. Specific conductance: Oct. 1961 to Sept. 1981. Water temperature: Oct. 1961 to Sept. 1981.

REVISED RECORDS.--WSP 1923: Drainage area. WDR TX-71-1: 1967

GAGE.--Water-stage recorder. Datum of gage is 1.00 ft above NGVD of 1929. 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. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. There are several small diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in Aug. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	24	118	67	43	38	20	11	7.6	10	22	9.1
2	57	24	245	65	41	37	20	11	7.6	31	20	8.2
3	54	138	391	63	41	38	18	11	7.4	41	17	8.1
4	52	84	1110	63	41	38	17	11	7.3	21	16	8.6
5	51	39	487	65	39	37	17	11	7.3	12	16	7.9
6	126	28	229	64	38	37	17	11	7.3	11	15	7.6
7	203	24	189	62	38	37	17	10	7.2	355	14	13
8	121	22	168	60	38	37	18	10	6.9	220	13	320
9	83	26	244	59	39	38	17	9.8	6.8	107	14	2140
10	66	39	234	59	39	e36	17	9.7	6.6	69	13	3010
11	61	27	177	58	38	e35	17	9.4	6.6	57	13	1530
12	71	22	288	56	38	e34	17	9.3	6.3	70	12	385
13	109	21	584	55	38	e32	16	9.3	6.3	59	12	193
14	343	21	288	55	38	e32	16	9.6	6.1	38	31	119
15	221	29	190	53	37	e30	16	9.3	6.1	31	62	212
16	112	1490	162	52	37	e30	15	9.3	5.7	284	114	1190
17	77	10700	180	52	38	e28	15	10	5.7	2600	38	3340
18	61	13000	151	51	38	e28	15	10	5.5	3100	21	1390
19	51	5620	119	51	38	e26	14	9.8	5.3	600	16	398
20	44	1030	106	50	38	e26	14	9.4	5.4	207	14	752
21	40	379	98	49	38	e24	14	9.9	5.3	127	13	1260
22	37	256	93	49	37	23	13	9.8	5.3	94	12	539
23	36	219	88	49	37	23	13	9.4	5.2	74	11	238
24	34	199	84	49	37	23	13	9.3	4.9	61	10	161
25	32	181	80	47	38	23	13	8.8	4.9	52	9.8	120
26	30	163	77	47	38	22	13	8.8	5.3	44	9.3	102
27	29	150	75	46	38	22	12	8.7	6.8	38	9.2	86
28	27	136	74	45	38	22	12	8.5	7.0	34	8.8	74
29	26	127	72	45	---	22	12	12	16	30	8.5	67
30	25	122	70	45	---	22	11	9.2	19	26	8.2	60
31	25	---	68	45	---	21	---	8.0	---	24	8.1	---
TOTAL	2363	34340	6539	1676	1076	921	459	303.3	210.7	8527	600.9	17748.5
MEAN	76.23	1145	210.9	54.06	38.43	29.71	15.30	9.784	7.023	275.1	19.38	591.6
MAX	343	13000	1110	67	43	38	20	12	19	3100	114	3340
MIN	25	21	68	45	37	21	11	8.0	4.9	10	8.1	7.6
AC-FT	4690	68110	12970	3320	2130	1830	910	602	418	16910	1190	35200
CFSM	0.11	1.66	0.31	0.08	0.06	0.04	0.02	0.01	0.01	0.40	0.03	0.86
IN.	0.13	1.85	0.35	0.09	0.06	0.05	0.02	0.02	0.01	0.46	0.03	0.96

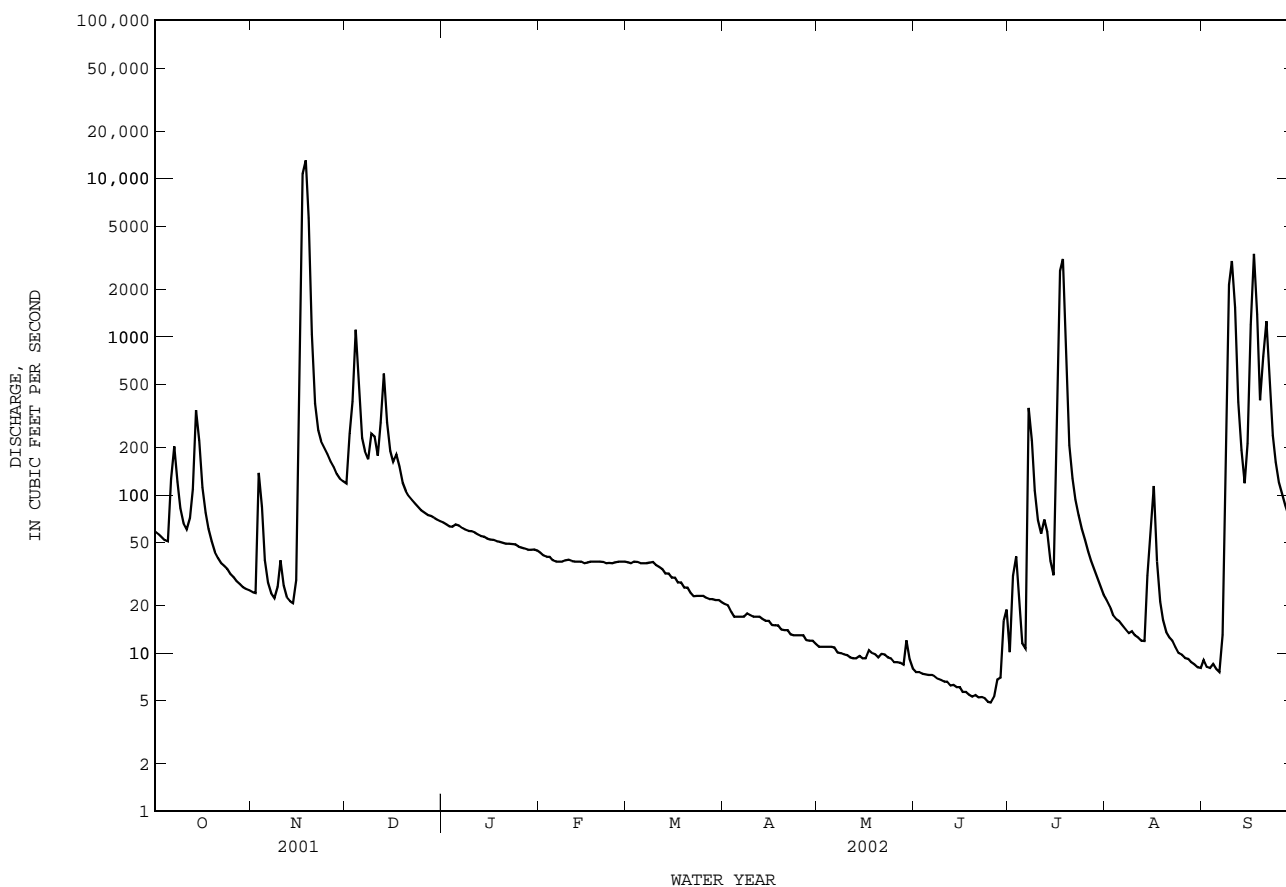
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002, BY WATER YEAR (WY)

	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950
MEAN	187.7	87.35	61.72	47.06	102.6	58.25	98.44	182.7	171.5	132.5	61.99	300.8
MAX	1882	1380	849	417	1178	595	851	1387	1848	2135	1076	5349
(WY)	1974	1982	1992	1992	1958	1997	1992	1972	1973	1990	1942	1967
MIN	0.051	0.64	0.62	0.66	0.66	2.20	1.90	0.46	0.65	0.40	0.096	0.027
(WY)	1990	1990	1990	1990	1990	1989	1940	1989	1990	1989	1989	1989

08189500 Mission River at Refugio, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1939 - 2002	
ANNUAL TOTAL	151377.7		74764.4		124.6	
ANNUAL MEAN	414.7		204.8		459	
HIGHEST ANNUAL MEAN					1.74	
LOWEST ANNUAL MEAN					67200	
HIGHEST DAILY MEAN	32100	Sep 1	13000	Nov 18	1967	1989
LOWEST DAILY MEAN	1.7	Aug 27	4.9	Jun 24	0.00	Sep 1 1989
ANNUAL SEVEN-DAY MINIMUM	2.1	Aug 21	5.2	Jun 19	0.00	Aug 30 1989
MAXIMUM PEAK FLOW			16300	Nov 17	79000	Sep 12 1971
MAXIMUM PEAK STAGE			30.07	Nov 17	38.25	Sep 12 1971
ANNUAL RUNOFF (AC-FT)	300300		148300		90300	
ANNUAL RUNOFF (CFSM)	0.60		0.30		0.18	
ANNUAL RUNOFF (INCHES)	8.16		4.03		2.45	
10 PERCENT EXCEEDS	231		224		97	
50 PERCENT EXCEEDS	29		37		11	
90 PERCENT EXCEEDS	5.3		8.5		2.3	

e Estimated



ARANSAS RIVER BASIN

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.--Mar. 1964 to current year.

Water-quality records.--Chemical data: Oct. 1965 to Sept. 1966. Sediment data: Feb. 1966 to Sept. 1975.

GAGE.--Water-stage recorder. Datum of gage is 72.37 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. The city of Beeville discharges wastewater effluent into the river via Poesta Creek 3.8 mi upstream. No known regulation or diversions. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	6.1	26	9.6	7.9	7.1	5.5	4.1	3.8	136	6.0	3.9
2	13	6.2	133	9.3	7.3	7.4	5.6	4.0	3.4	232	5.7	3.8
3	12	6.3	427	9.6	7.1	7.0	5.3	4.1	3.1	44	5.6	4.2
4	12	6.1	126	9.8	7.4	6.8	5.5	4.2	3.0	50	5.3	4.1
5	12	5.8	57	9.8	7.7	7.1	5.9	4.1	3.2	1700	4.9	4.0
6	26	5.4	40	9.8	7.9	7.3	5.8	3.8	2.7	862	4.7	3.9
7	25	5.5	33	9.0	7.9	7.2	5.5	3.8	2.6	103	4.6	4.1
8	13	5.6	41	9.2	7.6	7.0	6.0	3.8	2.4	43	4.4	5.2
9	11	6.4	49	9.4	7.2	7.0	6.0	3.7	2.5	283	5.1	55
10	9.8	6.6	36	9.7	7.1	6.7	6.6	3.5	2.3	146	5.3	277
11	9.5	6.8	33	9.9	6.6	5.9	6.1	3.4	2.2	74	5.3	76
12	9.0	6.0	68	9.6	6.7	5.5	5.7	3.1	2.3	31	5.4	26
13	9.6	5.5	43	9.2	7.1	5.5	5.5	3.3	2.3	15	5.0	13
14	9.7	5.4	31	9.1	6.9	5.7	5.3	2.5	2.0	9.6	4.2	8.7
15	9.7	9.1	28	8.8	6.5	5.9	5.0	2.4	1.8	829	7.3	505
16	8.1	1850	e23	8.8	6.7	5.7	5.1	2.9	1.8	2300	12	2410
17	7.5	1370	e20	8.9	6.3	5.6	5.3	3.5	1.8	1360	6.2	245
18	7.3	215	e17	9.0	6.3	5.9	5.2	13	1.8	171	4.3	66
19	7.2	80	e15	9.2	6.6	6.2	5.1	19	1.5	52	3.8	38
20	7.2	131	e13	8.6	6.6	6.8	4.8	7.0	1.4	30	3.7	251
21	7.3	65	e12	8.5	6.4	6.1	4.9	4.3	1.7	19	4.3	99
22	7.3	42	11	8.7	6.2	5.6	4.7	3.8	1.7	14	4.2	37
23	7.0	36	11	8.6	6.0	5.7	4.8	3.5	1.8	14	4.4	22
24	7.0	33	10	9.1	6.1	6.2	4.9	3.4	2.0	11	4.2	17
25	6.4	30	10	8.7	6.3	6.8	4.8	3.5	2.0	9.5	4.0	14
26	5.7	28	10	7.8	6.2	6.8	4.7	3.3	3.3	8.6	3.8	11
27	6.2	28	10	7.8	6.1	6.2	4.5	2.8	4.0	8.2	3.6	11
28	6.0	27	10	7.8	6.3	6.8	4.4	3.1	3.4	7.5	3.9	10
29	5.5	27	10	7.9	---	6.7	4.3	3.3	3.7	6.9	3.9	9.7
30	5.9	28	10	8.3	---	6.2	4.0	3.1	4.4	6.6	3.9	9.3
31	6.4	---	10	8.3	---	5.7	---	3.4	---	6.3	3.9	---
TOTAL	303.3	4082.8	1373	277.8	191.0	198.1	156.8	136.7	75.9	8582.2	152.9	4243.9
MEAN	9.784	136.1	44.29	8.961	6.821	6.390	5.227	4.410	2.530	276.8	4.932	141.5
MAX	26	1850	427	9.9	7.9	7.4	6.6	19	4.4	2300	12	2410
MIN	5.5	5.4	10	7.8	6.0	5.5	4.0	2.4	1.4	6.3	3.6	3.8
AC-FT	602	8100	2720	551	379	393	311	271	151	17020	303	8420

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2002, BY WATER YEAR (WY)

	MEAN	40.72	14.17	18.65	7.685	14.00	15.50	28.54	50.59	46.06	32.83	20.98	131.8
MAX	346	136	327	38.9	119	117	255	349	512	451	297	2356	
(WY)	1998	2002	1992	1992	1969	1992	1992	1972	1973	1990	2001	1967	
MIN	0.000	0.17	0.72	1.05	1.10	0.55	0.31	1.04	0.026	0.031	0.000	0.000	
(WY)	1990	1965	1965	1971	1967	1966	1967	1989	1967	1986	1965	1965	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1964 - 2002

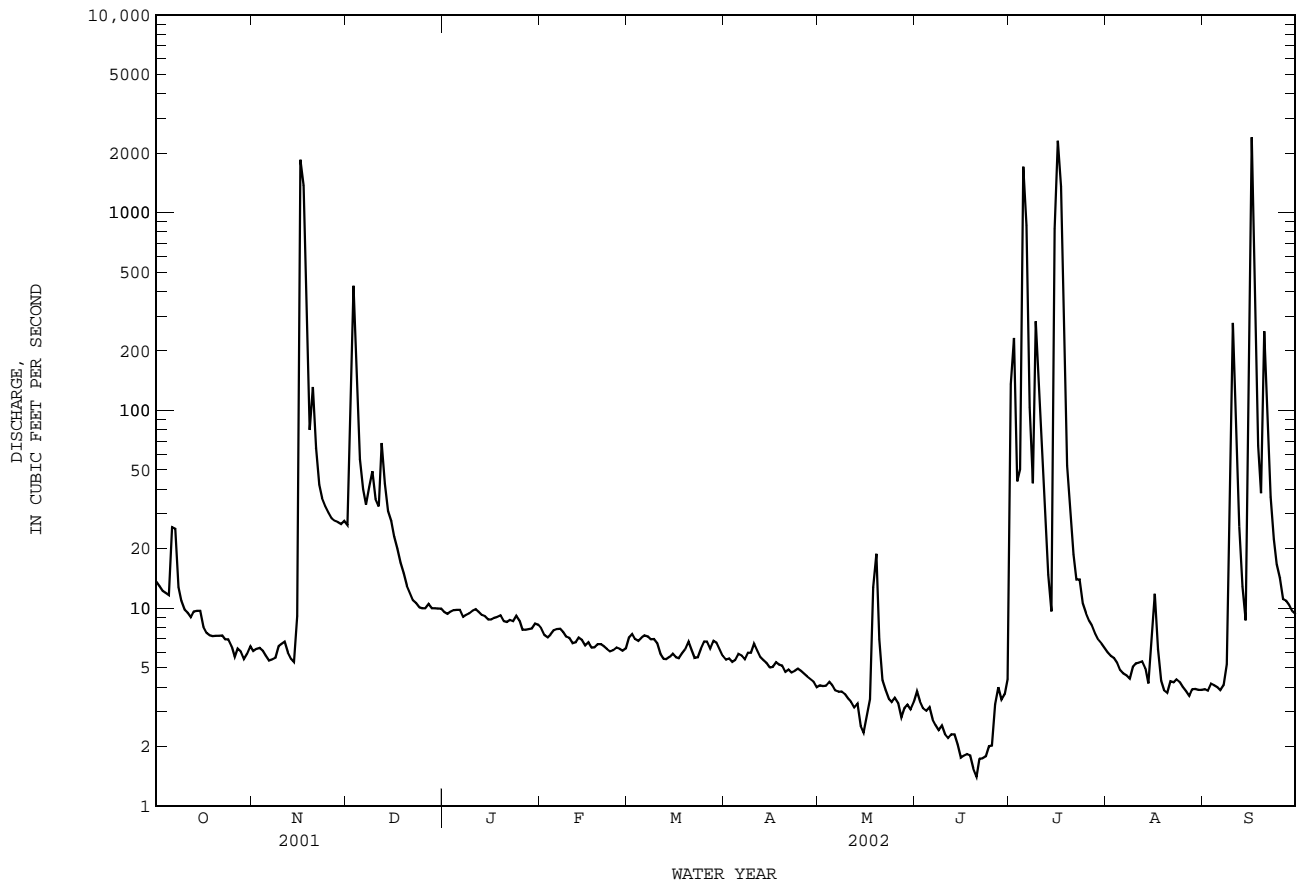
ANNUAL TOTAL	22895.20	19774.4	
ANNUAL MEAN	62.73	54.18	35.63
HIGHEST ANNUAL MEAN			199
LOWEST ANNUAL MEAN			3.15
HIGHEST DAILY MEAN	5500	Aug 31	49300
LOWEST DAILY MEAN	0.23	Jul 25	0.00
ANNUAL SEVEN-DAY MINIMUM	0.30	Jul 20	0.00
MAXIMUM PEAK FLOW			182800
MAXIMUM PEAK STAGE			a42.22
ANNUAL RUNOFF (AC-FT)	45410	39220	25810
10 PERCENT EXCEEDS	37	43	16
50 PERCENT EXCEEDS	5.0	6.8	4.0
90 PERCENT EXCEEDS	0.58	3.4	0.76

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08189700 Aransas River near Skidmore, TX--Continued



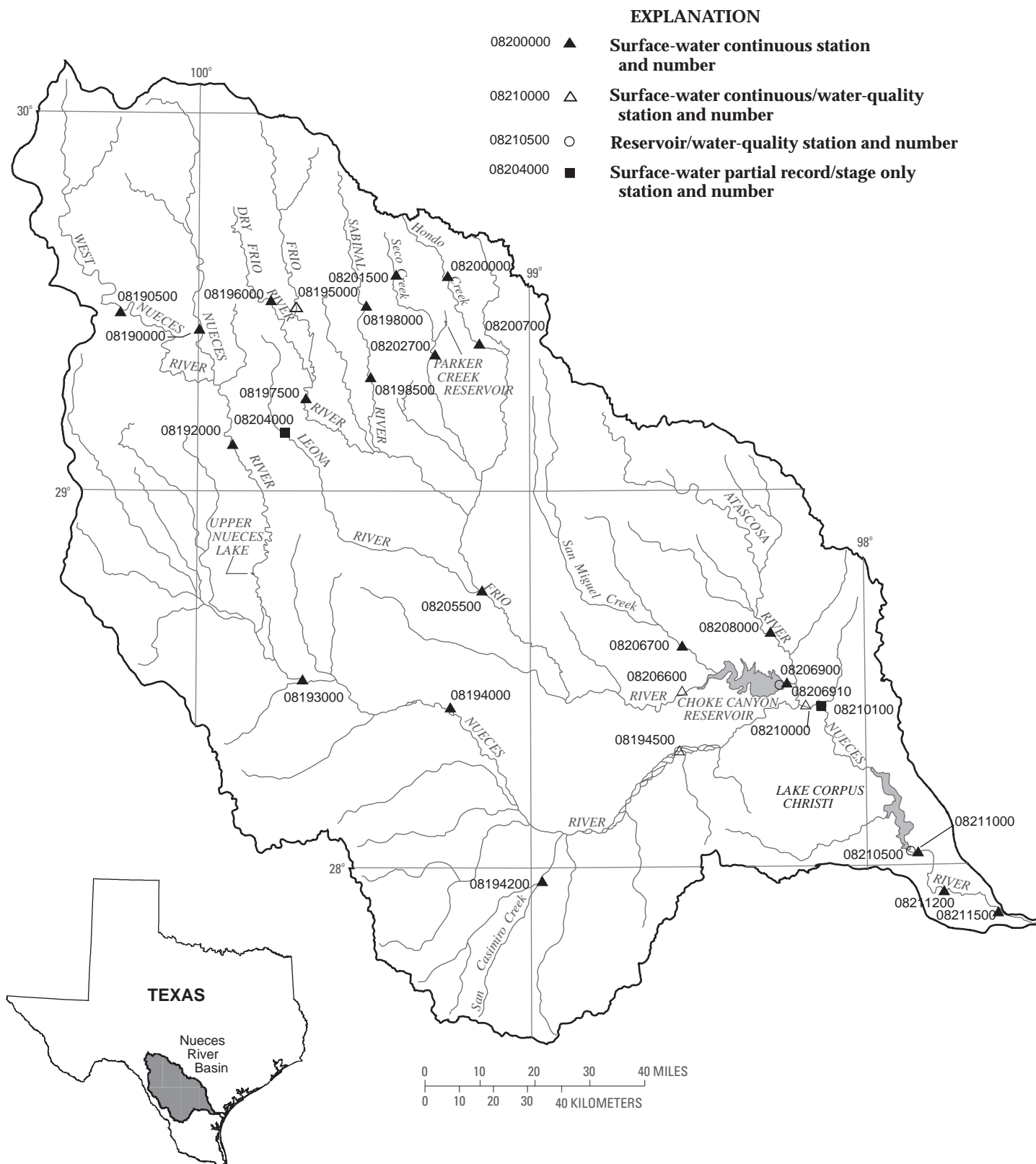


Figure 7.--Map showing location of gaging stations in the Nueces River Basin

08190000	Nueces River at Laguna, TX	214
08190500	West Nueces River near Brackettville, TX	216
08192000	Nueces River below Uvalde, TX	218
08193000	Nueces River near Asherton, TX	220
08194000	Nueces River at Cotulla, TX	222
08194200	San Casimiro near Freer, TX	224
08194500	Nueces River near Tilden, TX	226
08195000	Frio River at Concan, TX	232
08196000	Dry Frio River near Reagan Wells, TX	236
08197500	Frio River below Dry Frio River near Uvalde, TX	238
08198000	Sabinal River near Sabinal, TX	240
08198500	Sabinal River at Sabinal, TX	242
08200000	Hondo Creek near Tarpley, TX	244
08200700	Hondo Creek at King Waterhole near Hondo, TX	246
08201500	Seco Creek at Miller Ranch near Utopia, TX	248
08202700	Seco Creek at Rowe Ranch near D'Hanis, TX	250
08204000	Leona River Springflow near Uvalde, TX	371
08205500	Frio River near Derby, TX	252
08206600	Frio River at Tilden, TX	254
08206700	San Miguel Creek near Tilden, TX	260
08206900	Choke Canyon Reservoir near Three Rivers, TX	262
08206910	Choke Canyon Reservoir (Outlet Works Channel) near Three Rivers, TX	284
08208000	Atascosa River at Whitsett, TX	286
08210000	Nueces River near Three Rivers, TX	288
08210100	Nueces River at George West, TX	294
08210500	Lake Corpus Christi near Mathis, TX	298
08211000	Nueces River near Mathis, TX	314
08211200	Nueces River at Bluntzer, TX	316
08211500	Nueces River at Calallen, TX	318

NUECES RIVER BASIN

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.--Oct. 1923 to current year.

Water-quality records.--Chemical data: May 1949 to June 1952, Sept. 1964 to Sept. 1993. Biochemical data: Feb. 1970 to Sept. 1993. Pesticide data: Feb. 1970 to Sept. 1993. Sediment data: Jan. 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 NGVD of 1929. Prior to Jan. 26, 1925, nonrecording gage at site 2 mi downstream at different datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation. There are many small diversions above station for irrigation.

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.

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	58	673	284	125	92	73	79	56	55	146	41
2	62	57	671	277	127	92	72	76	55	4750	126	39
3	60	57	654	268	128	92	74	76	54	815	114	38
4	60	55	634	261	128	89	74	76	52	348	104	37
5	61	55	627	254	128	86	74	74	70	253	98	36
6	62	55	611	247	128	85	76	71	69	218	93	34
7	63	55	603	243	126	85	82	72	88	190	91	38
8	62	55	599	235	124	83	85	70	74	168	90	48
9	61	53	593	229	121	83	84	68	71	152	90	51
10	62	53	575	223	119	83	83	65	68	133	88	53
11	63	53	554	217	118	80	82	64	63	120	85	50
12	68	53	539	209	116	78	80	64	61	110	83	48
13	109	53	526	202	116	77	82	64	59	94	79	46
14	90	1090	510	198	114	74	87	64	57	90	75	43
15	79	24800	493	189	113	74	96	64	57	90	72	41
16	74	9420	496	184	112	74	97	64	56	91	71	40
17	71	3950	491	181	106	74	91	74	54	112	68	39
18	68	2100	478	177	105	73	91	74	51	113	67	39
19	68	1540	458	172	105	71	92	71	50	100	65	39
20	68	1280	440	166	105	72	90	69	48	92	63	38
21	66	1100	423	160	104	71	90	66	48	86	60	38
22	66	1020	410	157	103	69	89	63	47	84	57	37
23	66	942	392	155	102	68	87	63	46	80	57	35
24	65	880	374	151	100	70	87	64	45	80	55	35
25	64	828	361	146	97	70	85	62	45	79	53	34
26	62	796	346	142	97	71	86	60	44	74	52	34
27	60	753	333	137	94	71	85	58	44	71	49	33
28	60	725	323	132	92	70	83	58	43	71	48	33
29	59	716	311	125	---	72	82	59	42	79	46	33
30	58	686	299	125	---	73	79	58	47	429	45	32
31	58	---	292	125	---	74	---	58	---	174	43	---
TOTAL	2057	53338	15089	5971	3153	2396	2518	2068	1664	9401	2333	1182
MEAN	66.35	1778	486.7	192.6	112.6	77.29	83.93	66.71	55.47	303.3	75.26	39.40
MAX	109	24800	673	284	128	92	97	79	88	4750	146	53
MIN	58	53	292	125	92	68	72	58	42	55	43	32
AC-FT	4080	105800	29930	11840	6250	4750	4990	4100	3300	18650	4630	2340
CFSM	0.09	2.41	0.66	0.26	0.15	0.10	0.11	0.09	0.08	0.41	0.10	0.05
IN.	0.10	2.69	0.76	0.30	0.16	0.12	0.13	0.10	0.08	0.47	0.12	0.06

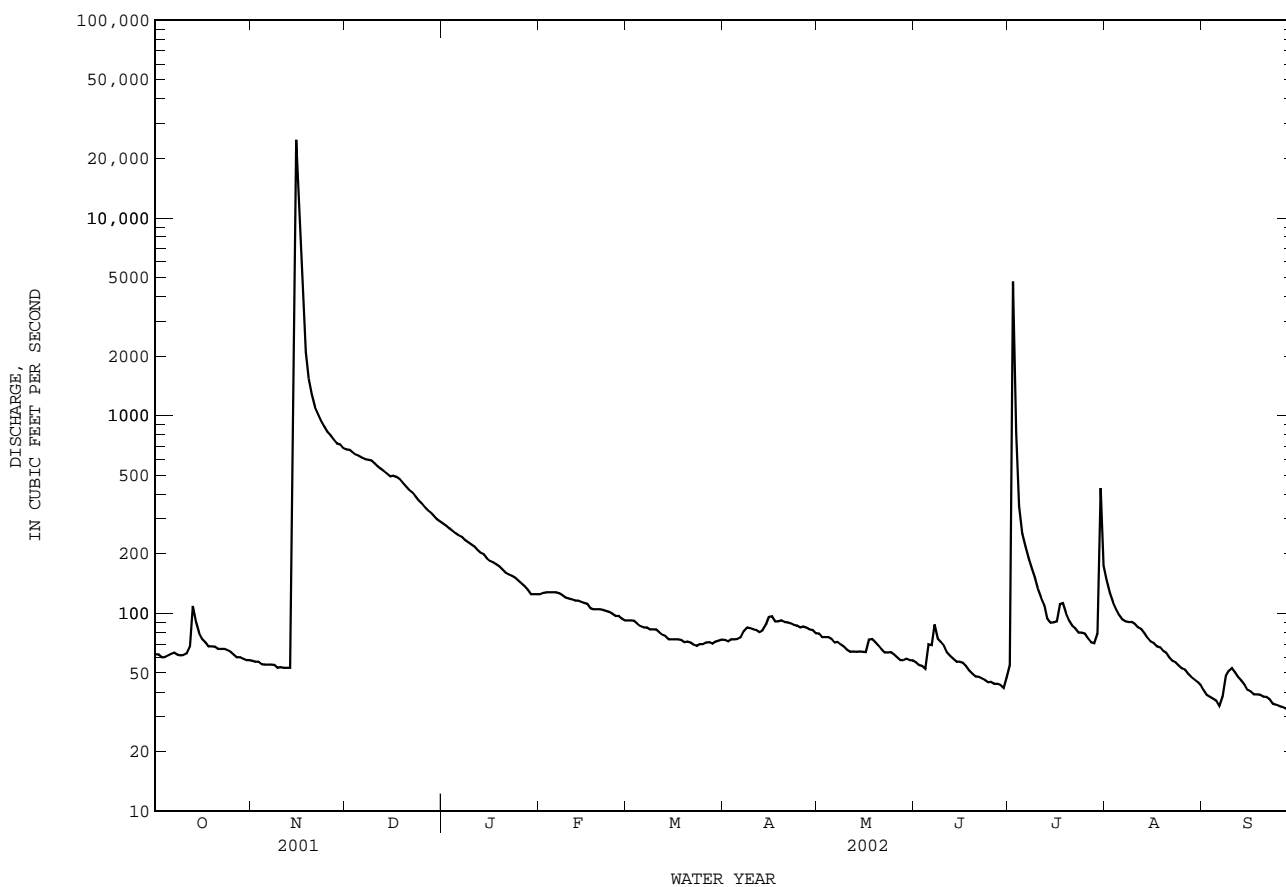
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2002, BY WATER YEAR (WY)

	MEAN	231.9	160.8	125.4	108.1	116.5	108.0	112.2	156.3	261.7	162.0	157.2	239.4
MAX	2030	1778	894	610	1160	867	766	868	5407	1580	2500	2668	
(WY)	1974	2002	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	

08190000 Nueces River at Laguna, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1924 - 2002	
ANNUAL TOTAL	111889		101170		161.6	
ANNUAL MEAN	306.5		277.2		611	
HIGHEST ANNUAL MEAN					23.1	
LOWEST ANNUAL MEAN					107000	
HIGHEST DAILY MEAN	24800	Nov 15	24800	Nov 15	3.0	Jun 14 1935
LOWEST DAILY MEAN	45	Aug 26	32	Sep 30	3.2	Feb 27 1957
ANNUAL SEVEN-DAY MINIMUM	47	Aug 20	33	Sep 24	1307000	Mar 10 1957
MAXIMUM PEAK FLOW			69600	Nov 15	a32.70	Sep 24 1955
MAXIMUM PEAK STAGE			20.20	Nov 15	117100	Sep 24 1955
ANNUAL RUNOFF (AC-FT)	221900		200700		0.22	
ANNUAL RUNOFF (CFSM)	0.42		0.38		2.98	
ANNUAL RUNOFF (INCHES)	5.65		5.11			
10 PERCENT EXCEEDS	492		483		244	
50 PERCENT EXCEEDS	143		79		77	
90 PERCENT EXCEEDS	54		47		24	

i From indirect measurement of peak flow.
a From floodmark.



NUECES RIVER BASIN

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.--Sept. 1939 to Sept. 1950, Apr. 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 NGVD of 1929. Prior to Mar. 14, 1940, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. A large part of the low flow enters the Edwards and associated limestones in the Balcones Fault Zone above station. No known regulation or diversions. No flow at times.

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).

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.69	0.84	1.2	1.8	3.3	2.7	1.2	0.59	0.52	0.59	0.62	0.06
2	0.70	0.84	1.2	1.9	3.4	2.7	1.2	0.54	0.54	0.87	0.56	0.04
3	0.71	0.84	1.1	2.0	3.3	2.9	1.4	0.47	0.55	0.98	0.48	0.03
4	0.72	0.84	1.0	2.0	3.2	2.8	1.4	0.50	0.59	1.8	0.42	0.03
5	0.76	0.84	1.0	2.0	3.2	2.6	1.2	0.58	0.92	3.5	0.39	0.01
6	0.80	0.84	1.0	2.0	3.1	2.2	1.2	0.47	0.65	5.2	0.54	0.00
7	0.75	0.89	1.0	2.0	3.1	2.0	1.1	0.50	0.59	13	0.72	0.04
8	0.76	0.93	1.1	2.0	3.0	1.9	1.1	0.56	0.59	8.8	1.00	0.03
9	0.86	0.93	1.2	2.0	2.9	2.1	1.0	0.56	0.57	5.8	1.0	0.0
10	0.84	0.93	1.4	1.9	3.1	2.3	1.0	0.58	0.57	4.5	0.91	0.00
11	0.79	0.93	1.4	2.0	3.1	2.1	0.99	0.56	0.56	3.5	0.80	0.00
12	0.79	0.93	1.3	2.0	3.0	1.8	0.98	0.59	0.55	2.5	0.72	0.00
13	1.2	0.93	1.4	2.1	2.9	1.7	0.87	0.75	0.57	1.8	0.66	0.00
14	0.96	0.93	1.4	2.1	2.9	1.6	0.98	0.68	0.55	1.2	0.59	0.00
15	1.0	10500	1.4	2.2	2.6	1.5	0.99	0.57	0.55	0.82	0.56	0.00
16	0.97	1360	1.3	2.2	2.8	1.6	0.90	0.58	0.52	12	0.48	0.00
17	0.94	59	1.3	2.2	2.8	1.6	0.85	0.82	0.53	25	0.43	0.00
18	0.93	2.0	1.5	2.2	2.7	1.6	0.83	0.81	0.50	18	0.42	0.00
19	0.93	1.7	1.5	2.2	2.4	1.6	0.79	0.62	0.47	13	0.39	0.00
20	0.91	1.7	1.5	2.3	2.4	1.8	0.84	0.64	0.45	8.2	0.35	0.00
21	0.85	1.7	1.5	2.2	2.7	1.8	0.81	0.66	0.43	4.7	0.31	0.00
22	0.78	1.6	1.5	2.2	2.8	1.8	0.75	0.66	0.41	2.7	0.27	0.00
23	0.75	1.5	1.6	2.1	2.8	1.7	0.73	0.73	0.39	1.9	0.22	0.00
24	0.75	1.4	1.6	2.4	2.5	1.4	0.72	0.75	0.39	1.6	0.21	0.00
25	0.75	1.4	1.6	2.6	2.3	1.4	0.72	0.75	0.38	1.4	0.17	0.00
26	0.75	1.3	1.6	2.7	2.9	1.7	0.75	0.73	0.37	1.2	0.16	0.00
27	0.77	1.3	1.7	2.6	3.1	1.5	0.68	0.70	0.42	1.0	0.14	0.00
28	0.84	1.6	1.7	2.4	2.9	1.4	0.61	0.70	0.42	0.90	0.14	0.00
29	0.84	1.5	1.7	2.6	---	1.2	0.63	0.72	0.47	0.93	0.12	0.00
30	0.84	1.4	1.8	2.9	---	1.1	0.63	0.66	0.55	0.89	0.11	0.0
31	0.84	---	1.8	3.0	---	1.3	---	0.60	---	0.67	0.09	---
TOTAL	25.77	11951.54	43.3	68.8	81.2	57.4	27.85	19.63	15.57	148.95	13.98	0.24
MEAN	0.831	398.4	1.397	2.219	2.900	1.852	0.928	0.633	0.519	4.805	0.451	0.008
MAX	1.2	10500	1.8	3.0	3.4	2.9	1.4	0.82	0.92	25	1.0	0.06
MIN	0.69	0.84	1.0	1.8	2.3	1.1	0.61	0.47	0.37	0.59	0.09	0.00
AC-FT	51	23710	86	136	161	114	55	39	31	295	28	0.5

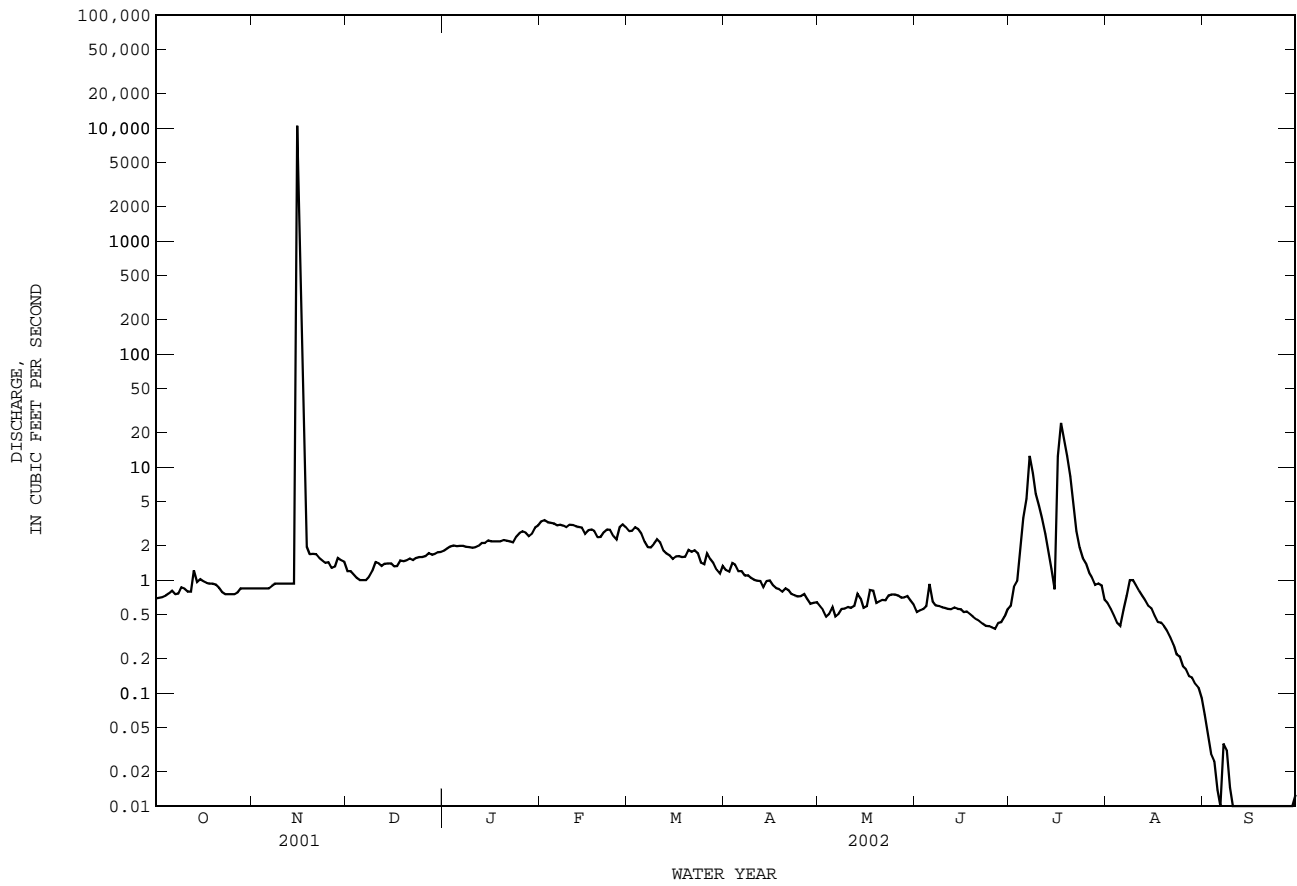
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002h, BY WATER YEAR (WY)

MEAN	79.35	15.59	4.877	2.440	19.84	3.566	9.199	13.49	99.95	44.08	60.61	67.18
MAX	1145	398	164	68.4	978	60.2	238	266	1880	737	1308	2180
(WY)	1997	2002	1985	1985	1949	1979	1990	1957	1958	1976	1971	1964
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1941	1941	1940	1940	1940	1940	1942	1942	1942	1941	1940	1940

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1939 - 2002h	
ANNUAL TOTAL	16260.77		12454.23			
ANNUAL MEAN	44.55		34.12		35.42	
HIGHEST ANNUAL MEAN					237	
LOWEST ANNUAL MEAN					0.000	
HIGHEST DAILY MEAN	10500	Nov 15	10500	Nov 15	42500	Sep 20 1964
LOWEST DAILY MEAN	0.69	Oct 1	0.00	Sep 6	0.00	Sep 28 1939
ANNUAL SEVEN-DAY MINIMUM	0.72	Sep 28	0.00	Sep 9	0.00	Sep 28 1939
MAXIMUM PEAK FLOW			43600	Nov 15	246000	Sep 20 1964
MAXIMUM PEAK STAGE			19.79	Nov 15	31.30	Sep 20 1964
ANNUAL RUNOFF (AC-FT)	32250		24700		25660	
10 PERCENT EXCEEDS	7.1		2.8		8.6	
50 PERCENT EXCEEDS	1.7		0.93		0.07	
90 PERCENT EXCEEDS	0.84		0.17		0.00	

h See PERIOD OF RECORD paragraph.

08190500 West Nueces River near Brackettville, TX--Continued



NUECES RIVER BASIN

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.-- Apr. 1939 to current year.

REVISED RECORDS.--WSP 1732: 1956(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 796.12 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--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 the basin between Nueces River at Laguna (station 08190000) and this station. No known regulation. There are many small diversions above station for irrigation. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1836, 40.4 ft Jun. 14, 1935, from floodmark (discharge 616,000 ft³/s at discontinued station 08191500 Nueces River near Uvalde 8.5 miles upstream, by slope-area measurement). Large floods also occurred in 1901 and 1913, stages unknown.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	21	128	56	37	36	34	34	13	17	127	7.9
2	23	21	137	52	37	33	35	33	13	5690	95	7.2
3	23	21	128	52	38	34	34	33	13	3450	76	6.9
4	23	21	120	53	42	34	34	34	12	2570	63	6.6
5	23	21	111	51	44	34	34	34	12	890	54	6.3
6	23	20	106	51	46	34	35	33	11	522	48	5.7
7	23	20	99	50	46	34	36	33	12	167	43	7.1
8	23	21	113	49	45	36	36	32	9.8	104	41	7.3
9	24	21	108	48	43	34	34	30	9.5	77	43	16
10	24	21	106	49	42	34	35	29	9.2	57	39	18
11	24	21	103	46	41	34	35	28	8.8	44	36	14
12	24	21	98	45	39	33	35	27	8.7	35	35	13
13	26	21	90	45	40	34	35	26	7.9	31	32	12
14	24	21	86	44	39	34	38	25	7.9	32	30	11
15	23	e19600	83	44	39	34	34	25	7.4	41	27	9.7
16	22	e15800	86	43	38	34	46	24	6.8	36	26	9.3
17	22	e4380	89	43	38	36	36	28	6.4	31	24	8.9
18	22	e200	91	42	40	36	37	25	6.0	34	21	8.6
19	22	e1420	85	42	38	37	37	22	5.8	37	20	8.1
20	22	783	82	41	38	35	38	21	5.8	33	19	7.9
21	22	565	77	41	37	36	38	19	5.8	29	18	7.9
22	22	434	75	41	37	36	37	19	5.7	26	17	7.4
23	22	366	71	41	37	37	37	19	5.4	25	15	6.9
24	22	303	69	41	36	37	37	19	5.4	23	14	6.5
25	21	257	66	38	36	37	36	18	5.3	22	13	6.1
26	21	224	64	38	35	36	37	17	5.1	21	12	5.8
27	21	196	63	39	36	36	37	16	5.8	20	12	5.8
28	21	168	62	40	35	36	37	16	5.9	19	11	5.5
29	21	155	60	40	---	36	36	16	5.4	19	9.4	5.4
30	21	142	57	40	---	35	35	14	6.0	544	9.2	5.2
31	21	---	56	38	---	34	---	14	---	222	8.7	---
TOTAL	698	45285	2769	1383	1099	1086	1085	763	241.8	14868	1038.3	254.0
MEAN	22.52	1510	89.32	44.61	39.25	35.03	36.17	24.61	8.060	479.6	33.49	8.467
MAX	26	19600	137	56	46	37	46	34	13	5690	127	18
MIN	21	20	56	38	35	33	34	14	5.1	17	8.7	5.2
AC-FT	1380	89820	5490	2740	2180	2150	2150	1510	480	29490	2060	504

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002, BY WATER YEAR (WY)

	MEAN	265.5	123.5	82.62	71.13	95.01	62.69	74.26	100.3	258.6	142.9	206.5	216.1
MAX	3153	1510	811	656	2487	909	785	972	3496	1525	4057	3081	
(WY)	1974	2002	1992	1985	1949	1992	1977	1987	1958	1976	1998	1964	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1953	1953	1952	1952	1952	1952	1952	1953	1953	1951	1951	1951	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1939 - 2002

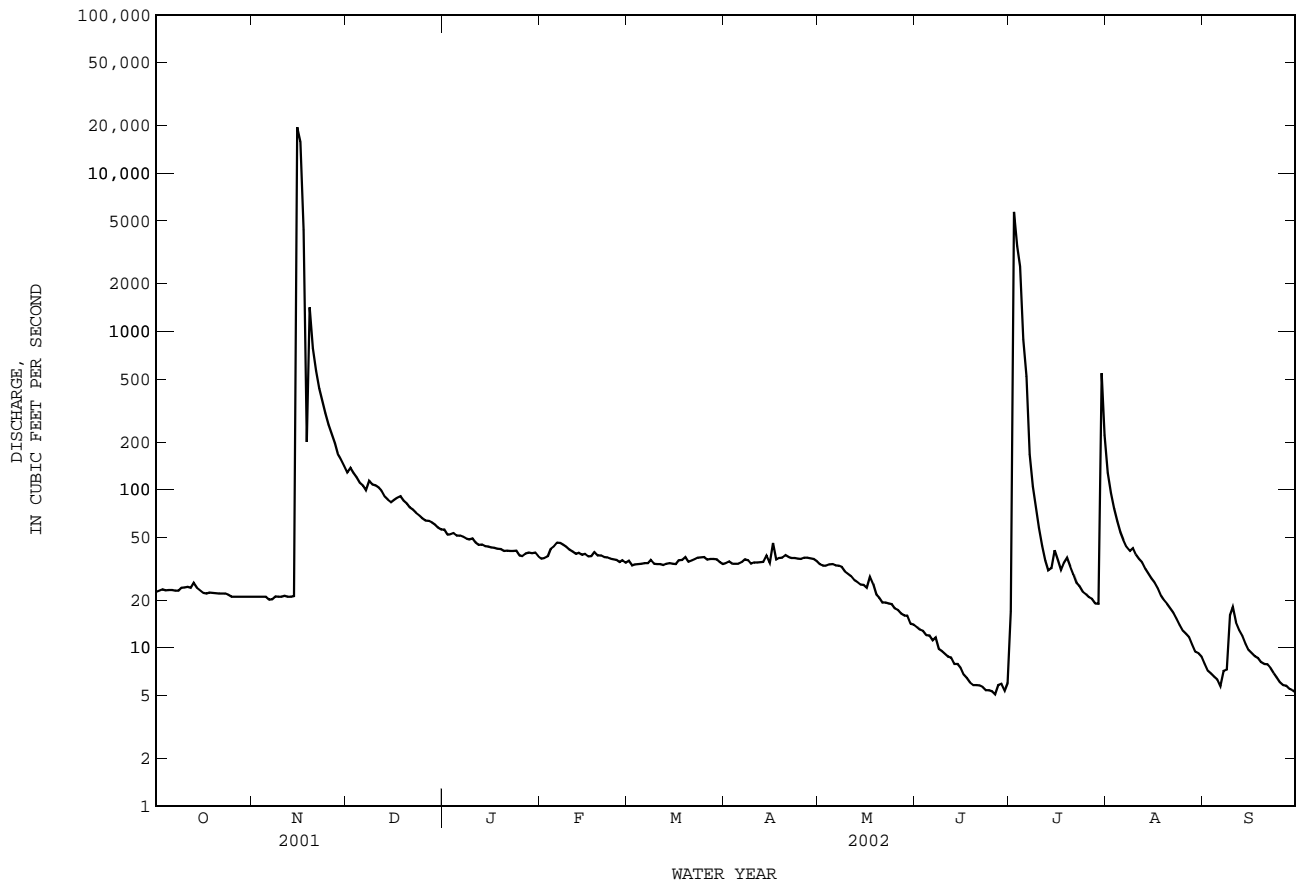
ANNUAL TOTAL	72875		70570.1										
ANNUAL MEAN	199.7		193.3							141.4			
HIGHEST ANNUAL MEAN										678		1997	
LOWEST ANNUAL MEAN										3.63		1956	
HIGHEST DAILY MEAN	19600	Nov 15	19600	Nov 15						51600	Oct 29	1996	
LOWEST DAILY MEAN	19	Aug 13	5.1	Jun 26						0.00	May 10	1951	
ANNUAL SEVEN-DAY MINIMUM	19	Aug 10	5.5	Jun 23						0.00	Jun 18	1951	
MAXIMUM PEAK FLOW			65300	Nov 15						1201000	Oct 28	1996	
MAXIMUM PEAK STAGE			a16.42	Nov 15						a24.88	Oct 28	1996	
ANNUAL RUNOFF (AC-FT)	144500		140000							102400			
10 PERCENT EXCEEDS	148		101							201			
50 PERCENT EXCEEDS	67		34							27			
90 PERCENT EXCEEDS	21		7.9							3.3			

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08192000 Nueces River below Uvalde, TX--Continued



NUECES RIVER BASIN

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.--Oct. 1939 to current year.

REVISED RECORDS.--WSP 1118: 1944.

GAGE.--Water-stage recorder. Datum of gage is 470.92 ft above NGVD of 1929. Prior to Feb. 2, 1940, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records fair. Since Mar. 1948, at least 10% of contributing drainage area has been regulated. 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 the basin between Nueces River at Laguna (station 08190000) and Nueces River below Uvalde (station 08192000). Some loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. There are many small diversions above station for irrigation. No flow at times.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--8 years (water years 1940-48), 140 ft³/s (101,700 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1940-48).--Maximum discharge, 24,000 ft³/s Sept. 2, 1944 (gage height 30.40, corrected); no flow at times.

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.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.0	0.0	314	133	69	13	0.04	0.38	0.12	16	237	31
2	0.0	0.0	306	133	65	9.8	0.05	0.28	0.16	653	365	29
3	0.0	0.0	298	128	62	8.2	0.06	0.24	0.18	3810	391	31
4	0.0	0.0	290	125	e61	7.6	0.03	0.24	0.23	8250	304	31
5	0.0	0.0	280	125	61	9.2	0.03	0.24	0.24	12000	234	29
6	0.0	0.0	274	125	63	9.1	0.03	0.22	0.24	12000	184	26
7	0.0	0.0	267	124	63	6.6	0.03	0.18	0.24	9720	152	26
8	0.0	0.0	260	120	60	4.8	0.03	0.18	0.32	6240	132	35
9	0.0	0.0	e255	113	58	4.1	0.02	0.18	0.27	2700	117	46
10	0.0	0.0	e245	108	55	3.2	0.02	0.16	0.15	862	111	58
11	0.0	0.0	237	105	54	2.7	0.03	0.10	0.10	470	105	65
12	0.0	0.0	e233	104	54	2.5	0.04	0.08	0.06	337	99	64
13	0.0	0.0	229	102	51	2.1	0.07	0.08	0.02	276	92	63
14	0.0	0.0	216	100	45	1.7	0.04	0.11	0.00	220	84	61
15	0.0	0.0	206	97	42	1.6	0.03	0.18	0.00	661	75	67
16	0.0	0.0	196	92	42	1.5	0.02	0.29	0.00	2670	68	94
17	0.0	3430	190	95	43	1.3	4.4	6.2	0.00	3740	64	207
18	e0.0	7830	184	95	44	1.4	8.5	116	0.00	3760	59	263
19	0.0	6910	181	93	44	1.5	9.4	86	0.00	3220	59	223
20	0.0	4090	181	92	41	1.0	7.5	62	0.00	1770	56	162
21	0.0	1610	179	91	37	0.67	5.2	26	0.00	645	50	115
22	0.0	e938	176	89	32	0.51	3.4	12	0.00	365	46	87
23	0.0	e727	170	86	26	0.42	2.2	5.9	0.00	257	43	71
24	0.0	609	163	85	24	0.56	1.4	3.0	0.00	192	42	60
25	0.0	e529	157	79	25	0.41	1.1	1.3	0.00	149	41	53
26	0.0	466	153	73	25	0.04	0.80	0.49	0.00	122	41	48
27	0.0	429	153	71	21	0.02	0.63	0.18	0.00	107	39	44
28	0.0	389	150	72	16	0.01	0.50	0.12	0.00	94	39	41
29	0.0	e361	139	72	---	0.01	0.43	0.15	0.00	82	39	39
30	0.0	e335	132	69	---	0.02	0.43	0.17	0.00	75	37	38
31	0.0	---	130	70	---	0.02	---	0.16	---	77	34	---
TOTAL	0.0	28653.0	6544	3066	1283	95.59	46.46	322.81	2.33	75540	3439	2207
MEAN	0.000	955.1	211.1	98.90	45.82	3.084	1.549	10.41	0.078	2437	110.9	73.57
MAX	0.00	7830	314	133	69	13	9.4	116	0.32	12000	391	263
MIN	0.00	0.00	130	69	16	0.01	0.02	0.08	0.00	16	34	26
AC-FT	0.00	56830	12980	6080	2540	190	92	640	4.6	149800	6820	4380

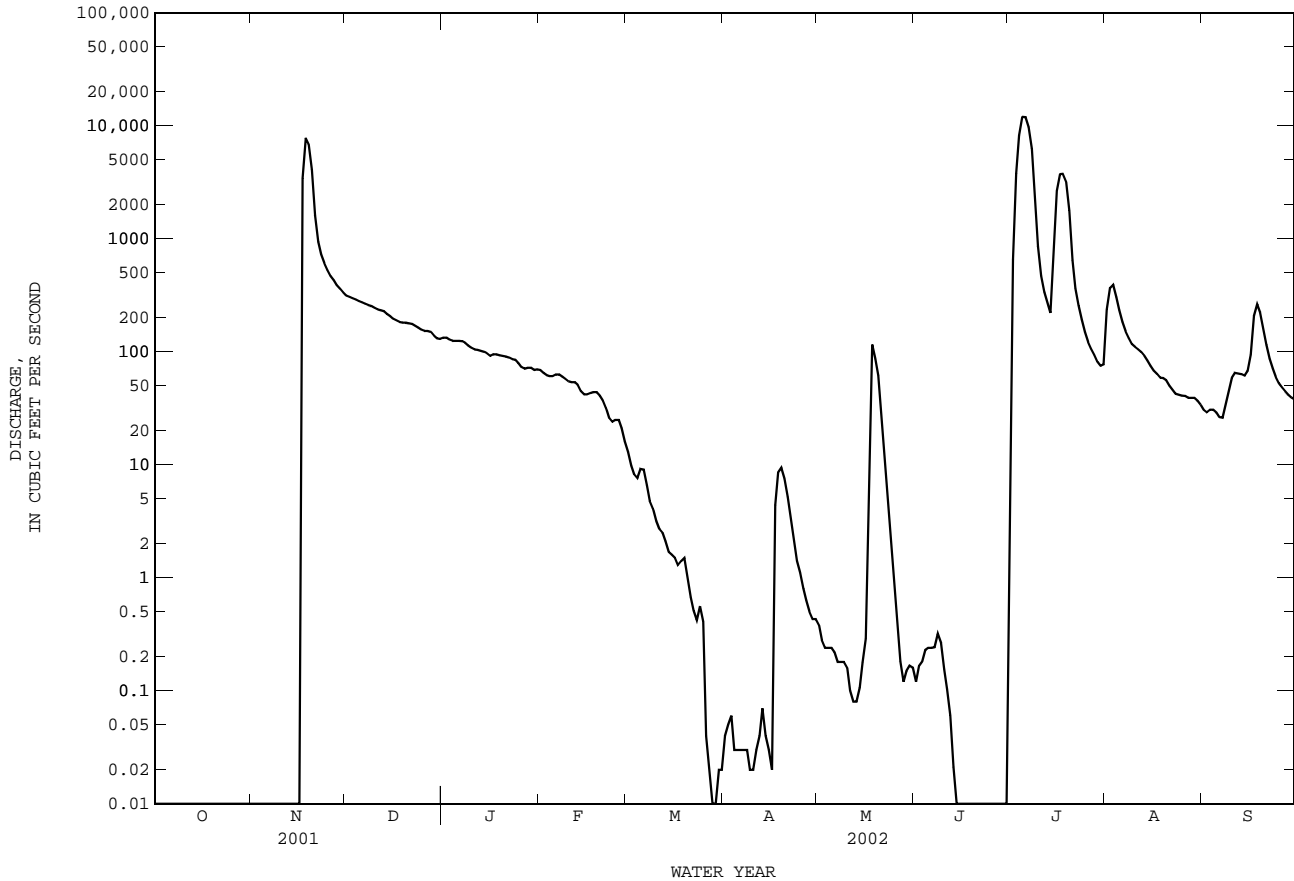
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2002z, BY WATER YEAR (WY)

	MEAN	358.7	132.1	64.66	66.59	79.46	77.01	92.32	223.8	432.1	254.3	235.8	271.8
MAX	3254	955	537	724	1498	1347	1256	1738	4349	2437	5246	3674	
(WY)	1960	2002	1992	1985	1949	1949	1957	1957	1987	2002	1971	1964	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
(WY)	1953	1951	1949	1949	1950	1950	1950	1956	1953	1951	1951	1952	

08193000 Nueces River near Asherton, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1949 - 2002z	
ANNUAL TOTAL	53734.47		121199.19		191.1	
ANNUAL MEAN	147.2		332.1		700	
HIGHEST ANNUAL MEAN					0.003	
LOWEST ANNUAL MEAN					24800	
HIGHEST DAILY MEAN	7830	Nov 18	12000	Jul 5	24800	Oct 6 1959
LOWEST DAILY MEAN	0.00	Jul 25	0.00	Oct 1	0.00	Oct 1 1948
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 25	0.00	Oct 1	0.00	Oct 1 1948
MAXIMUM PEAK FLOW			12600	Jul 5	28500	Oct 6 1959
MAXIMUM PEAK STAGE			29.20	Jul 5	30.88	Oct 6 1959
ANNUAL RUNOFF (AC-FT)	106600		240400		138500	
10 PERCENT EXCEEDS	211		309		287	
50 PERCENT EXCEEDS	53		35		0.32	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated
z Period of regulated streamflow.



NUECES RIVER BASIN

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.--Nov. 1923 to Sept. 1926 (monthly discharge only), Oct. 1926 to current year. Gage-height records collected in this vicinity in 1914-17 and since 1922 are contained in reports of the National Weather Service.

REVISED RECORDS.--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. WSP 1732: 1957(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 368.08 ft above NGVD of 1929. 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. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Mar. 1948, at least 10% of contributing drainage area has been regulated. 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 the basin between Nueces River at Laguna (station 08190000) and Nueces River below Uvalde (station 08192000). Some loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. There are many small diversions above station for irrigation. No flow at times.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1927-48), 315 ft³/s (228,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1927-48).--Maximum discharge 82,600 ft³/s June 18, 1935 (gage height 32.4 ft from flood marks), by slope-area method; no flow at times.

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.

DISCHARGE FROM THE DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	466	161	68	19	0.00	0.00	6.6	4070	98	40
2	0.00	0.00	443	155	63	18	0.00	0.00	5.1	7190	97	38
3	0.00	0.00	414	159	63	15	0.00	0.00	4.1	4680	248	31
4	0.00	0.00	401	162	63	12	0.00	0.00	2.9	9770	414	35
5	0.00	0.00	387	158	60	8.2	0.00	0.00	1.9	12200	463	29
6	0.00	0.00	374	152	57	5.9	0.00	0.00	3.9	14200	397	25
7	0.00	0.00	361	151	55	4.4	0.00	0.00	10	13900	309	31
8	0.00	0.00	350	152	57	3.7	0.00	0.00	1.5	17600	244	62
9	0.00	0.00	335	153	59	3.1	0.00	0.00	0.59	15700	198	363
10	0.00	0.00	326	148	59	2.8	0.00	0.00	0.31	10800	167	479
11	0.00	0.00	328	138	57	3.1	0.00	0.00	0.19	6480	145	603
12	0.00	0.00	322	129	54	3.2	0.00	0.00	0.06	3340	134	910
13	0.00	0.00	311	123	52	2.7	0.00	0.00	0.0	1860	126	818
14	0.00	0.00	306	121	52	2.1	0.00	0.00	0.00	1150	119	261
15	0.00	0.00	300	119	51	1.6	0.00	0.00	0.00	7840	111	169
16	0.00	0.00	285	115	49	1.2	0.00	0.00	0.00	15100	102	148
17	0.00	0.00	265	112	44	1.1	0.00	0.00	0.00	10800	91	156
18	0.00	0.00	252	106	40	0.89	0.00	155	0.00	13200	80	170
19	0.00	173	244	104	40	0.79	0.00	314	0.00	8260	73	275
20	0.00	896	235	106	41	0.81	0.00	496	0.00	5770	67	340
21	0.00	3830	231	104	42	0.54	0.00	1050	0.00	4790	64	302
22	0.00	6380	230	102	42	0.34	0.00	1370	0.00	3570	62	235
23	0.00	4460	231	102	39	0.27	0.00	740	0.00	2180	58	173
24	0.00	2440	227	100	35	0.21	0.00	231	0.00	1290	53	132
25	0.00	1630	218	94	29	0.18	0.00	106	0.00	594	48	107
26	0.00	1230	207	89	23	0.12	0.00	62	0.00	352	42	88
27	0.00	928	198	82	19	0.08	0.00	42	0.00	232	38	74
28	0.00	712	192	73	18	0.06	0.00	29	0.00	179	35	65
29	0.00	597	190	69	---	0.06	0.00	21	0.00	148	35	57
30	0.00	515	187	68	---	0.05	0.00	16	0.00	127	36	53
31	0.00	---	175	69	---	0.01	---	10	---	109	35	---
TOTAL	0.00	23791.00	8991	3676	1331	111.51	0.00	4642.00	37.15	197481	4189	6269
MEAN	0.000	793.0	290.0	118.6	47.54	3.597	0.000	149.7	1.238	6370	135.1	209.0
MAX	0.00	6380	466	162	68	19	0.00	1370	10	17600	463	910
MIN	0.00	0.00	175	68	18	0.01	0.00	0.00	0.00	109	35	25
AC-FT	0.00	47190	17830	7290	2640	221	0.00	9210	74	391700	8310	12430

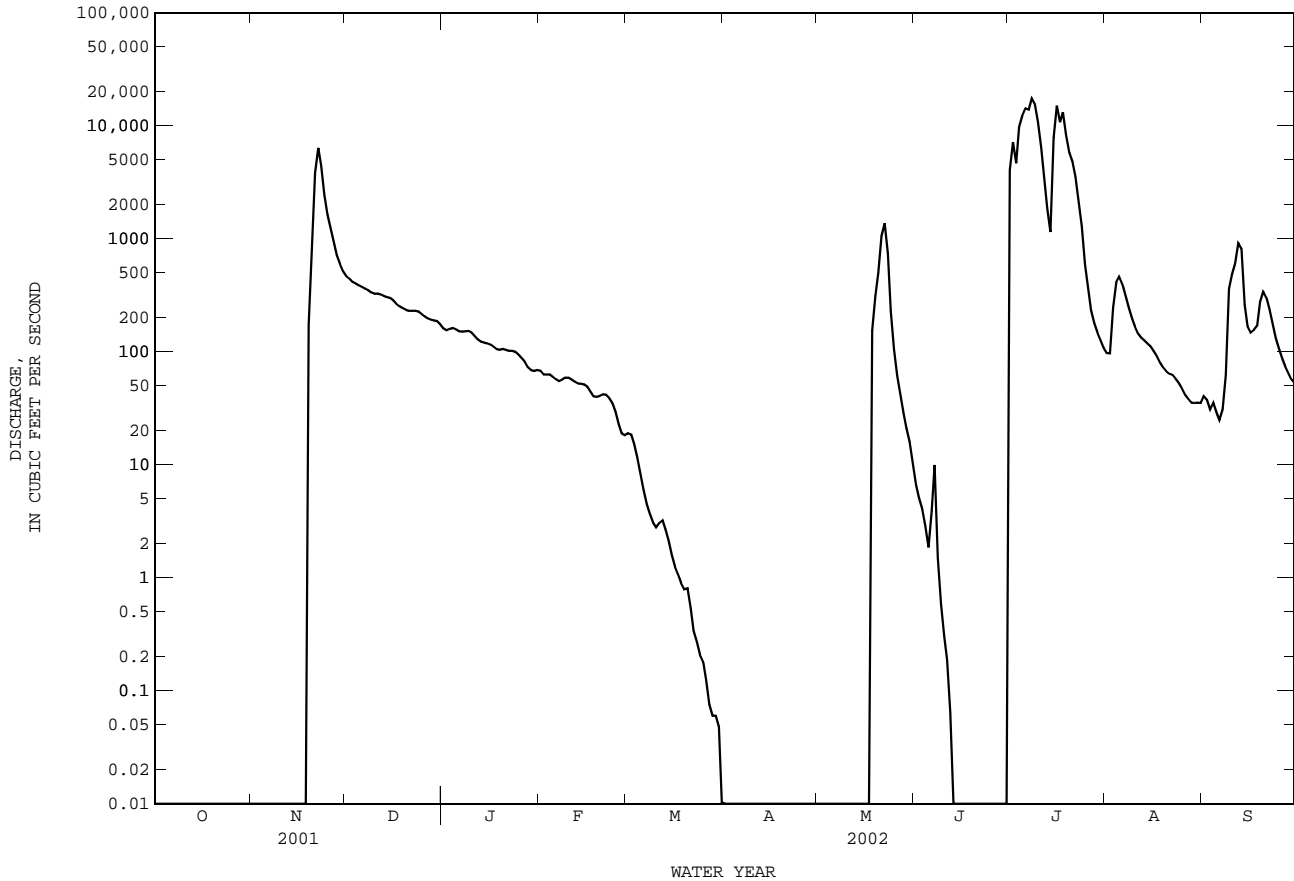
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2002z, BY WATER YEAR (WY)

	MEAN	463.5	164.6	68.83	71.87	54.81	96.24	106.6	246.0	513.7	396.5	277.6	356.4
MAX	3906	1098	414	761	619	2351	1444	1873	5280	6370	6412	5417	
(WY)	1960	1977	1970	1985	1992	1949	1957	1957	1987	2002	1971	1964	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1953	1951	1949	1949	1951	1950	1950	1950	1956	1953	1951	1951	1951

08194000 Nueces River at Cotulla, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1949 - 2002z	
ANNUAL TOTAL	48556.64		250518.66		235.5	
ANNUAL MEAN	133.0		686.4		1003	
HIGHEST ANNUAL MEAN					2.24	
LOWEST ANNUAL MEAN					37400	
HIGHEST DAILY MEAN	6380	Nov 22	17600	Jul 8	1971	1989
LOWEST DAILY MEAN	0.00	Jun 19	0.00	Oct 1	0.00	Oct 8 1948
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 19	0.00	Oct 1	0.00	Oct 8 1948
MAXIMUM PEAK FLOW			18700	Jul 16	46000	Sep 17 1964
MAXIMUM PEAK STAGE			a21.78	Jul 16	27.75	Sep 17 1964
ANNUAL RUNOFF (AC-FT)	96310		496900		170600	
10 PERCENT EXCEEDS	239		771		364	
50 PERCENT EXCEEDS	24		42		0.73	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

z Period of regulated streamflow.
a From floodmark.



NUECES RIVER BASIN

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.--Jan. 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 298.00 ft above NGVD of 1929, from Texas Department of Transportation datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. No flow at times.

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.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.02	2.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.01	2.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.01	1.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.02	1.4	0.00	0.00	0.00	0.00	0.00	0.00	59	0.00	0.00
5	0.00	0.02	1.3	0.00	0.00	0.00	0.00	0.00	0.00	1290	0.00	0.00
6	0.00	0.02	1.2	0.00	0.00	0.00	0.00	0.00	0.00	398	0.00	0.00
7	0.00	0.02	0.98	0.00	0.00	0.00	0.00	0.00	0.00	64	0.00	0.00
8	0.00	0.03	0.97	0.00	0.00	0.00	0.00	0.00	0.00	23	0.00	0.00
9	0.00	0.03	1.3	0.00	0.00	0.00	0.00	0.00	0.00	4.4	0.00	891
10	0.00	0.03	1.0	0.00	0.00	0.00	0.00	0.00	0.00	1.8	3.1	6870
11	0.00	0.03	2.1	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.02	5280
12	0.00	0.03	1.9	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	4690
13	0.00	0.03	1.1	0.00	0.00	0.00	0.00	0.00	0.00	118	0.00	1400
14	0.00	0.05	0.78	0.00	0.00	0.00	0.00	0.00	0.00	144	0.00	389
15	0.00	0.06	0.66	0.00	0.00	0.00	0.00	0.00	0.00	4450	0.00	1670
16	0.00	2.4	0.58	0.00	0.00	0.00	0.00	0.00	0.00	11900	0.00	3300
17	0.00	6570	0.36	0.00	0.00	0.00	0.00	6.5	0.00	4730	0.00	1860
18	0.00	6120	0.25	0.00	0.00	0.00	0.00	469	0.00	2110	0.00	1060
19	0.00	2220	0.21	0.00	0.00	0.00	0.00	409	0.00	978	0.00	652
20	0.00	775	0.11	0.00	0.00	0.00	0.00	100	0.00	265	0.00	276
21	0.00	409	0.07	0.00	0.00	0.00	0.00	48	0.00	49	0.00	75
22	0.00	545	0.06	0.00	0.00	0.00	0.00	21	0.00	20	0.00	37
23	0.00	503	0.05	0.00	0.00	0.00	0.00	4.0	0.00	3.8	0.00	17
24	0.00	125	0.03	0.00	0.00	0.00	0.00	1.2	0.00	0.03	0.00	7.5
25	0.00	61	0.01	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	4.0
26	0.00	40	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	2.9
27	0.00	28	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	2.2
28	0.00	21	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	2.0
29	0.00	14	0.00	0.00	---	0.00	0.00	0.03	0.00	0.00	0.00	1.8
30	0.01	6.4	0.00	0.00	---	0.00	0.00	0.01	0.00	0.00	0.00	1.9
31	0.02	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.03	17440.21	22.82	0.00	0.00	0.00	0.00	1059.40	0.00	26609.27	3.12	28489.30
MEAN	0.001	581.3	0.736	0.000	0.000	0.000	0.000	34.17	0.000	858.4	0.101	949.6
MAX	0.02	6570	2.7	0.00	0.00	0.00	0.00	469	0.00	11900	3.1	6870
MIN	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.06	34590	45	0.00	0.00	0.00	0.00	2100	0.00	52780	6.2	56510

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002, BY WATER YEAR (WY)

	MEAN	114.5	31.38	7.521	1.916	2.069	8.040	17.37	108.0	73.53	35.37	32.35	160.0
MAX	3021	581	247	40.2	19.5	145	297	747	606	858	398	2367	
(WY)	1972	2002	1977	1977	1973	1985	1985	1981	1981	2002	1999	1967	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1964	1965	1965	1962	1962	1962	1965	1962	1965	1965	1963	1965	

SUMMARY STATISTICS

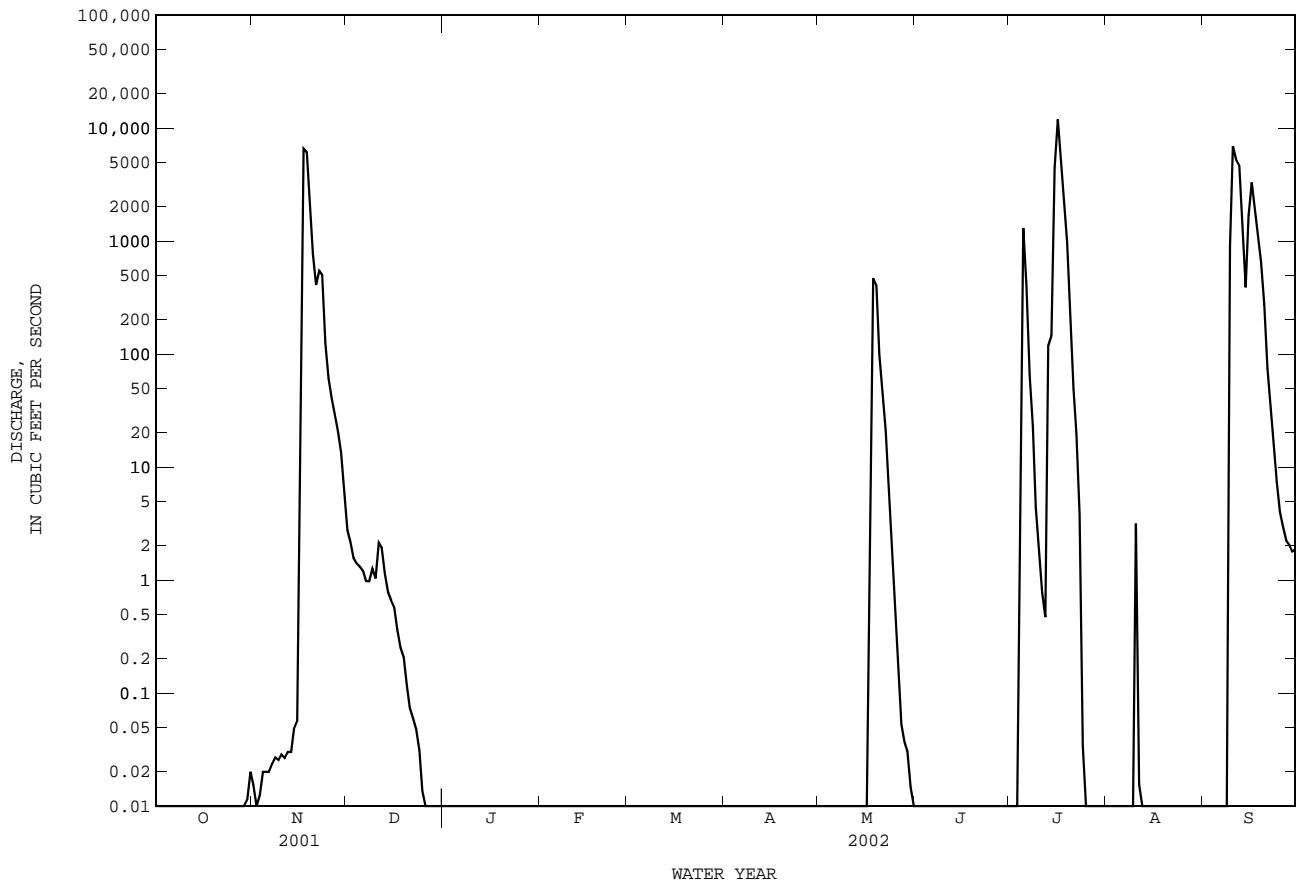
FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1962 - 2002

ANNUAL TOTAL	30973.49	73624.15	
ANNUAL MEAN	84.86	201.7	49.45
HIGHEST ANNUAL MEAN			323
LOWEST ANNUAL MEAN			1.54
HIGHEST DAILY MEAN	6720	11900	36600
LOWEST DAILY MEAN	0.00	0.00	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	0.00	0.00
MAXIMUM PEAK FLOW		15600	82000
MAXIMUM PEAK STAGE		23.37	26.87
ANNUAL RUNOFF (AC-FT)	61440	146000	35830
10 PERCENT EXCEEDS	1.5	60	15
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

08194200 San Casimiro Creek near Freer, TX--Continued



NUECES RIVER BASIN

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.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Nov. 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since Mar. 1948, at least 10% of contributing drainage area has been regulated. 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 the basin between Nueces River at Laguna (station 08190000) and Nueces River below Uvalde (station 08192000). Some loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. There are many small diversions above station for irrigation. No flow at times.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--6 years (water years 1943-48), 510 ft³/s (369,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1943-48).--Maximum discharge 57,500 ft³/s, Oct. 11, 1946 (gage height 26.46 ft), from rating curve extended above 46,400 ft³/s; no flow at times.

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.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	2150	150	77	36	0.37	0.00	20	4000	622	34
2	0.00	0.00	2330	147	72	31	0.30	0.00	13	3890	141	33
3	0.00	0.00	2150	142	69	26	0.22	0.00	8.5	2160	107	32
4	0.00	0.00	1860	133	69	22	0.21	0.00	5.6	1750	89	31
5	0.00	0.00	1300	127	69	21	0.21	0.00	3.5	1190	80	32
6	0.00	0.00	519	127	66	21	0.25	0.00	2.3	1570	119	33
7	0.00	0.00	396	127	67	20	0.33	0.00	1.5	1590	269	29
8	0.00	0.00	367	129	66	17	0.34	0.00	0.97	4260	360	30
9	0.00	0.00	370	126	64	14	0.40	0.00	0.55	11100	366	4280
10	0.00	0.00	356	124	61	12	0.47	0.00	0.27	13300	294	14000
11	0.00	0.00	338	122	59	10	0.45	0.00	16	12500	218	6060
12	0.00	0.00	315	e121	59	9.1	0.34	0.00	25	14200	177	3970
13	0.00	0.00	302	e120	60	7.9	0.21	0.00	9.8	15900	162	16900
14	0.00	0.00	297	e120	60	6.9	0.11	0.00	4.0	13300	145	17700
15	0.00	0.00	288	116	58	6.5	0.08	0.00	1.9	15900	128	16000
16	0.00	0.00	275	111	56	5.2	0.07	0.00	0.85	27200	106	22700
17	0.00	187	267	107	54	4.4	0.04	0.00	0.24	22400	95	28800
18	0.00	1410	259	105	52	4.3	0.03	0.00	0.02	27900	88	26800
19	0.00	2610	246	104	51	4.2	0.02	16	0.00	30800	81	20000
20	0.00	4880	230	101	50	3.4	0.00	246	0.00	24700	73	13700
21	0.00	9190	216	99	47	3.2	0.00	439	0.00	17300	67	8260
22	0.00	6180	204	96	43	2.2	0.00	504	0.00	14200	61	4820
23	0.00	3980	196	95	42	1.8	0.00	478	0.00	11200	57	3370
24	0.00	2960	189	95	42	1.5	0.00	501	0.00	7320	53	2600
25	0.00	2380	185	94	42	1.1	0.00	540	0.00	5030	49	2080
26	0.00	2060	185	92	42	0.77	0.00	562	0.00	3940	47	1490
27	0.00	1880	183	92	42	0.64	0.00	530	0.00	3290	45	326
28	0.00	1850	178	90	40	0.64	0.00	192	0.09	2870	42	166
29	0.00	1790	169	88	---	0.64	0.00	67	0.91	2510	39	124
30	0.00	1910	161	84	---	0.62	0.00	43	2.1	2170	37	101
31	0.00	---	155	81	---	0.51	---	31	---	1820	35	---
TOTAL	0.00	43267.00	16636	3465	1579	295.52	4.45	4149.00	117.10	321260	4252	214501
MEAN	0.000	1442	536.6	111.8	56.39	9.533	0.148	133.8	3.903	10360	137.2	7150
MAX	0.00	9190	2330	150	77	36	0.47	562	25	30800	622	28800
MIN	0.00	0.00	155	81	40	0.51	0.00	0.00	0.00	1190	35	29
AC-FT	0.00	85820	33000	6870	3130	586	8.8	8230	232	637200	8430	425500

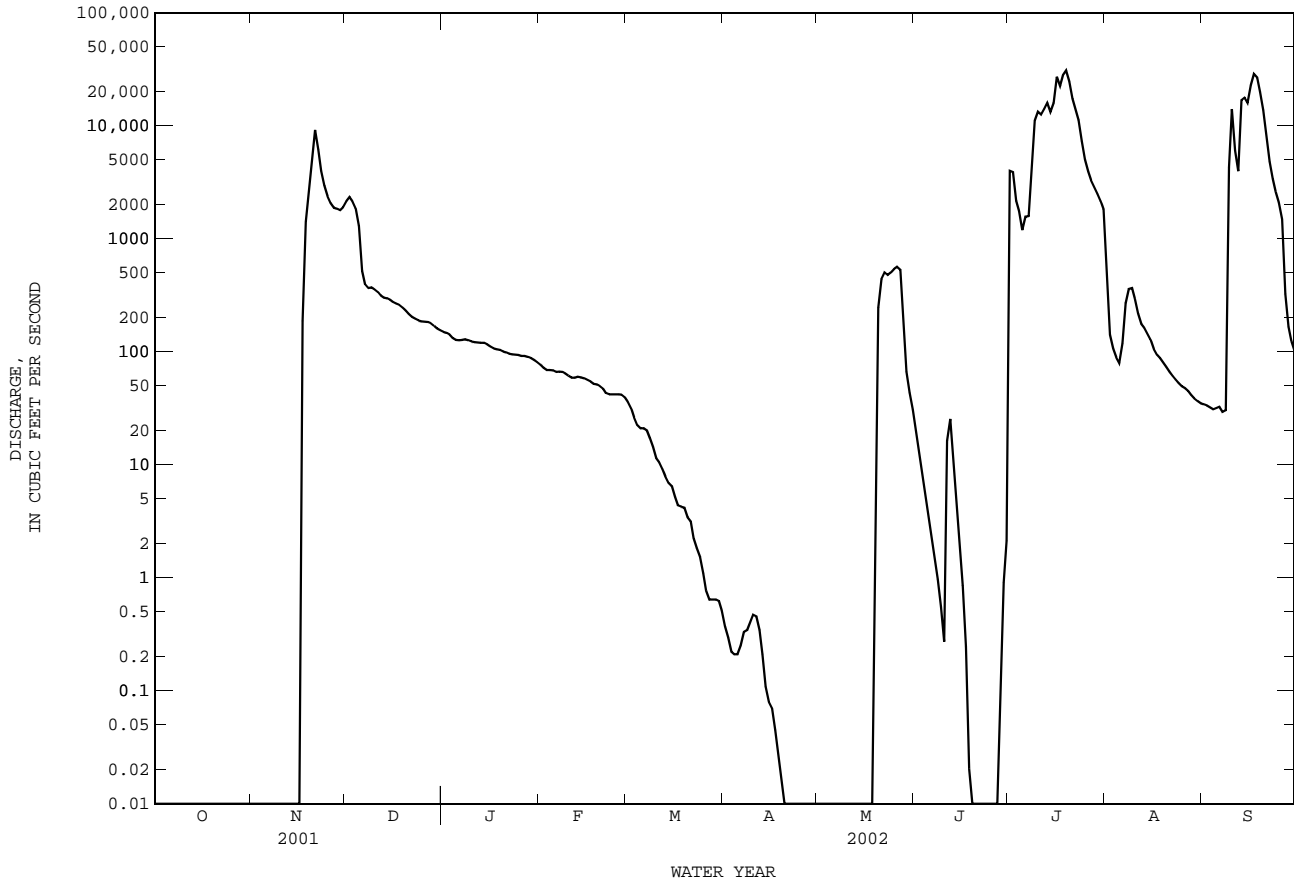
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2002z, BY WATER YEAR (WY)

	MEAN	780.7	300.1	103.9	116.7	144.9	114.4	156.6	492.2	661.0	587.6	328.6	838.6
MAX	11250	3509	1275	1912	4793	2104	2028	4122	5404	10220	7197	10150	
(WY)	1972	1977	1977	1958	1958	1949	1949	1957	1987	2002	1971	1967	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
(WY)	1953	1953	1951	1951	1964	1954	1955	1971	1998	1953	1951	1952	

08194500 Nueces River near Tilden, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1949 - 2002z	
ANNUAL TOTAL	106037.20		609526.07		386.1	
ANNUAL MEAN	290.5		1670		1736	
HIGHEST ANNUAL MEAN					14.0	
LOWEST ANNUAL MEAN					70000	
HIGHEST DAILY MEAN	9190	Nov 21	30800	Jul 19	70000	Sep 24 1967
LOWEST DAILY MEAN	0.00	Jun 20	0.00	Oct 1	0.00	Oct 15 1948
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 20	0.00	Oct 1	0.00	Jan 6 1949
MAXIMUM PEAK FLOW			31500	Jul 19	76500	Sep 24 1967
MAXIMUM PEAK STAGE			23.32	Jul 16	26.57	Sep 24 1967
ANNUAL RUNOFF (AC-FT)	210300		1209000		279700	
10 PERCENT EXCEEDS	345		3970		724	
50 PERCENT EXCEEDS	60		50		7.3	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated
z Period of regulated streamflow.



NUECES RIVER BASIN

08194500 Nueces River near Tilden, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Dec. 1997 to current year.

BIOCHEMICAL DATA: Dec. 1997 current year.

PESTICIDE DATA: Dec. 1997 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD) (UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)
DEC 18...	1245	258	591	8.2	14.0	9.8	96	240	57	75.7	12.3	31.1	.9
MAR 13...	1200	9.3	509	7.7	17.0	9.0	94	210	43	58.6	14.5	35.7	1
JUN 05...	1600	3.1	478	7.8	29.0	5.6	73	160	9	53.0	6.71	27.3	.9
AUG 19...	1315	80	446	7.8	29.5	6.9	91	170	22	55.9	7.85	20.2	.7
Date	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT IT TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
DEC 18...	22	2.77	2	220	184	29.2	62.6	E.1	11.8	343	1.58	.009	1.59
MAR 13...	27	2.40	1	198	163	39.2	49.2	.1	3.31	302	--	<.008	<.05
JUN 05...	26	8.24	1	182	151	21.0	36.1	.2	14.7	259	--	E.005	E.04
AUG 19...	20	4.86	1	180	150	23.4	32.3	.2	10.2	246	--	E.004	.24
Date	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
DEC 18...	E.02	.29	E.04	.02	.067	1	.05	E2	81	<.06	<.04	<.8	.21
MAR 13...	<.04	.25	<.06	<.02	--	<1	.31	<2	84	<.06	<.04	<.8	.25
JUN 05...	<.04	.69	.14	.12	.371	<1	.28	7	99	<.06	<.04	<.8	.32
AUG 19...	<.04	.27	E.05	.05	.144	<1	.28	3	99	<.06	<.04	<.8	.20
Date	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
DEC 18...	1.1	<10	<.08	7	.7	<.01	1.1	1.45	E2	<1	372	E6	1
MAR 13...	1.3	<10	.09	8	6.2	<.01	1.3	.33	<2	<1	334	<8	1
JUN 05...	2.5	E8	<.08	9	4.1	<.01	1.7	2.40	<2	<1	287	12	1
AUG 19...	1.7	<10	<.08	6	1.3	<.01	1.2	1.17	E1	<1	281	10	3

08194500 Nueces River near Tilden, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	2,4,5-T DIS- SOLVED (UG/L) (39742)	2,4-D, DIS- SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	SILVEX, DIS- SOLVED (UG/L) (39762)	3HYDRXY CARBO- FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	DNOC WAT,FLT GF 0.7U REC (UG/L) (49299)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL- UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI- CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALDI- CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)
DEC 18...	1.07	<.07	<.16	<.25	<.002	<.03	<.11	<.25	<.004	<.05	<.002	<.21	<.20
MAR 13...	1.01	<.07	<.16	<.25	<.006	<.03	<.19	<.25	<.006	<.05	<.004	<.21	<.20
JUN 05...	.56	<.07	<.16	<.25	<.006	<.03	<.21	<.25	<.006	<.05	<.004	<.21	<.20
AUG 19...	.79	<.07	<.16	<.25	<.006	<.03	<.11	<.25	<.006	<.05	<.004	<.21	<.20
Date	ALDICA- RB SUL- FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENTA- ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	BRO- MACIL, WATER, DISS, REC (UG/L) (04029)	BRO- MOXYNIL WATER, FLTRD, DISS, GF 0.7U REC (UG/L) (49311)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
DEC 18...	<.27	<.005	<.007	<.050	<.010	<.05	<.09	<.07	<.002	<.080	<.041	<.15	<.020
MAR 13...	<.27	<.005	<.007	<.050	<.010	<.05	<.09	<.07	<.002	<.080	<.041	<.15	<.020
JUN 05...	<.27	<.005	.014	<.050	<.010	<.05	<.09	<.07	<.002	<.080	<.041	<.15	<.020
AUG 19...	<.27	<.005	<.007	<.050	<.010	<.05	<.09	<.07	<.002	<.080	<.041	<.15	<.020
Date	CHLORO- THALO- NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CLOPYR- ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA- ALIN WATER, DISS, REC (UG/L) (04041)	DACTHAL MONO- ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLO- BENIL, WATER, FLTRD, GF 0.7U REC (UG/L) (49303)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)
DEC 18...	<.25	<.005	<.006	<.42	<.018	<.07	<.003	<.006	<.005	<.11	<.09	<.12	<.005
MAR 13...	<.25	<.005	<.006	<.42	<.018	<.07	<.003	<.006	<.005	<.11	<.09	<.12	<.005
JUN 05...	<.25	<.005	<.006	<.42	<.018	<.07	<.003	E.006	<.005	<.19	<.09	<.12	<.005
AUG 19...	<.25	<.005	<.006	<.42	<.018	<.07	<.003	<.006	<.005	<.11	<.09	<.12	<.005
Date	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DISUL- FOTON WATER, FLTRD, GF 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN- URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUO- METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)
DEC 18...	<.09	<.02	<.12	<.002	<.009	<.005	<.07	<.06	<.003	<.004	<.06	<.035	<.027
MAR 13...	<.09	<.02	<.12	<.002	<.009	<.005	<.07	<.06	<.003	<.004	<.06	<.035	<.027
JUN 05...	<.09	<.02	<.12	<.002	<.009	<.005	<.07	<.13	<.003	<.004	<.06	<.035	<.027
AUG 19...	<.14	<.02	<.12	<.002	<.009	<.005	<.07	<.06	<.003	<.004	<.06	<.035	<.027
Date	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METHIO- CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH- OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB- URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY- ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE DISSOLV (UG/L) (34653)
DEC 18...	<.20	<.26	<.07	<.22	<.013	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003
MAR 13...	<.20	<.26	<.07	<.20	<.013	<.006	<.002	E.005n	<.07	<.04	<.28	<.16	<.003
JUN 05...	<.20	<.26	<.07	<.30	E.005n	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003
AUG 19...	<.20	<.26	<.07	<.22	<.013	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003

NUECES RIVER BASIN

08194500 Nueces River near Tilden, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL-PARA-THION, WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	
	DEC 18...	<.007	<.006	<.002	<.010	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.12	<.004
	MAR 13...	<.010	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.12	<.004
JUN 05...	<.010	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.50	<.004	
AUG 19...	<.010	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.12	<.004	

Date	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	
	DEC 18...	<.011	<.02	<.034	<.02	<.005	<.002	<.07	<.009
	MAR 13...	<.005	<.02	<.034	<.02	<.005	<.002	<.07	<.009
JUN 05...	<.005	<.02	<.034	<.02	<.005	<.002	<.07	<.009	
AUG 19...	<.005	<.02	<.034	<.02	<.005	<.002	<.07	<.009	

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:

n -- Below the NDV

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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.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1923 to Sept. 1929, Oct. 1930 to current year.

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 NGVD of 1929. 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. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. Many small diversions for irrigation above station. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1869, that of July 1, 1932, from information by local residents.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	40	96	67	70	50	44	37	54	34	117	40
2	46	40	93	65	68	49	44	37	49	e24700	104	40
3	44	40	92	64	67	46	42	36	45	e1530	93	38
4	44	40	88	63	67	46	42	35	41	e6670	83	37
5	44	38	85	65	67	46	42	35	40	8530	78	37
6	48	38	82	64	65	46	42	34	41	1780	72	36
7	45	38	81	64	64	46	42	33	45	1040	69	35
8	44	38	80	65	63	47	44	33	41	814	66	54
9	44	38	78	65	62	46	44	32	39	834	65	e70
10	44	38	76	65	60	46	44	32	38	894	65	e88
11	45	38	74	65	59	46	44	30	36	813	64	81
12	55	38	75	66	58	44	44	30	35	614	63	81
13	94	38	72	65	57	44	43	28	36	660	60	77
14	64	156	72	67	56	47	43	27	35	1000	60	74
15	53	7960	71	65	56	48	44	26	33	1220	58	74
16	50	2750	71	67	56	46	56	26	33	1200	56	71
17	50	1130	72	67	56	46	54	28	32	1330	56	68
18	48	489	73	69	56	44	52	29	31	1380	55	68
19	48	312	72	70	56	44	50	29	29	1320	54	66
20	46	335	71	68	56	44	49	28	29	1140	54	62
21	46	251	72	69	54	44	46	27	27	938	53	61
22	46	210	71	68	54	44	46	27	26	862	51	57
23	45	188	71	70	54	44	44	27	26	734	51	55
24	44	171	70	68	52	44	44	26	24	534	50	55
25	43	155	70	70	52	44	42	26	24	376	49	54
26	42	145	68	70	52	42	42	42	23	263	48	52
27	42	133	69	70	50	42	40	90	23	214	48	52
28	42	123	67	70	50	41	40	78	23	177	46	52
29	41	112	67	71	---	40	39	65	24	151	45	52
30	40	104	67	72	---	43	38	63	30	137	45	51
31	40	---	67	72	---	44	---	58	---	130	43	---
TOTAL	1473	15226	2333	2086	1637	1393	1330	1154	1012	62019	1921	1738
MEAN	47.52	507.5	75.26	67.29	58.46	44.94	44.33	37.23	33.73	2001	61.93	57.93
MAX	94	7960	96	72	70	50	56	90	54	24700	117	88
MIN	40	38	67	63	50	40	38	26	23	34	43	35
AC-FT	2920	30200	4630	4140	3250	2760	2640	2290	2010	123000	3810	34500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2002h, BY WATER YEAR (WY)

MEAN	147.8	112.5	101.7	90.65	96.23	96.86	106.3	133.1	183.4	187.8	108.2	137.5
MAX	648	565	767	525	613	762	859	1041	2468	2823	1050	1333
(WY)	1970	2001	1992	1992	1992	1992	1981	1935	1935	1932	1971	1936
MIN	0.000	0.000	0.000	3.01	8.25	11.8	8.52	6.48	1.08	1.25	0.019	0.000
(WY)	1957	1957	1957	1957	1957	1956	1956	1956	1956	1953	1956	1956

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1924 - 2002h
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ANNUAL TOTAL	50022		93322				
ANNUAL MEAN	137.0		255.7			125.3	
HIGHEST ANNUAL MEAN						434	1992
LOWEST ANNUAL MEAN						8.80	1956
HIGHEST DAILY MEAN	7960	Nov 15	24700	Jul 2	52000		Jul 1 1932
LOWEST DAILY MEAN	17	Aug 25	23	Jun 26		0.00	Aug 5 1956
ANNUAL SEVEN-DAY MINIMUM	19	Aug 20	24	Jun 23		0.00	Aug 5 1956
MAXIMUM PEAK FLOW			119000	Jul 2	i162000		Jul 1 1932
MAXIMUM PEAK STAGE			a31.23	Jul 2		a34.44	Jul 1 1932
ANNUAL RUNOFF (AC-FT)	99220		185100			90780	
10 PERCENT EXCEEDS	171		173			198	
50 PERCENT EXCEEDS	94		53			68	
90 PERCENT EXCEEDS	31		34			19	

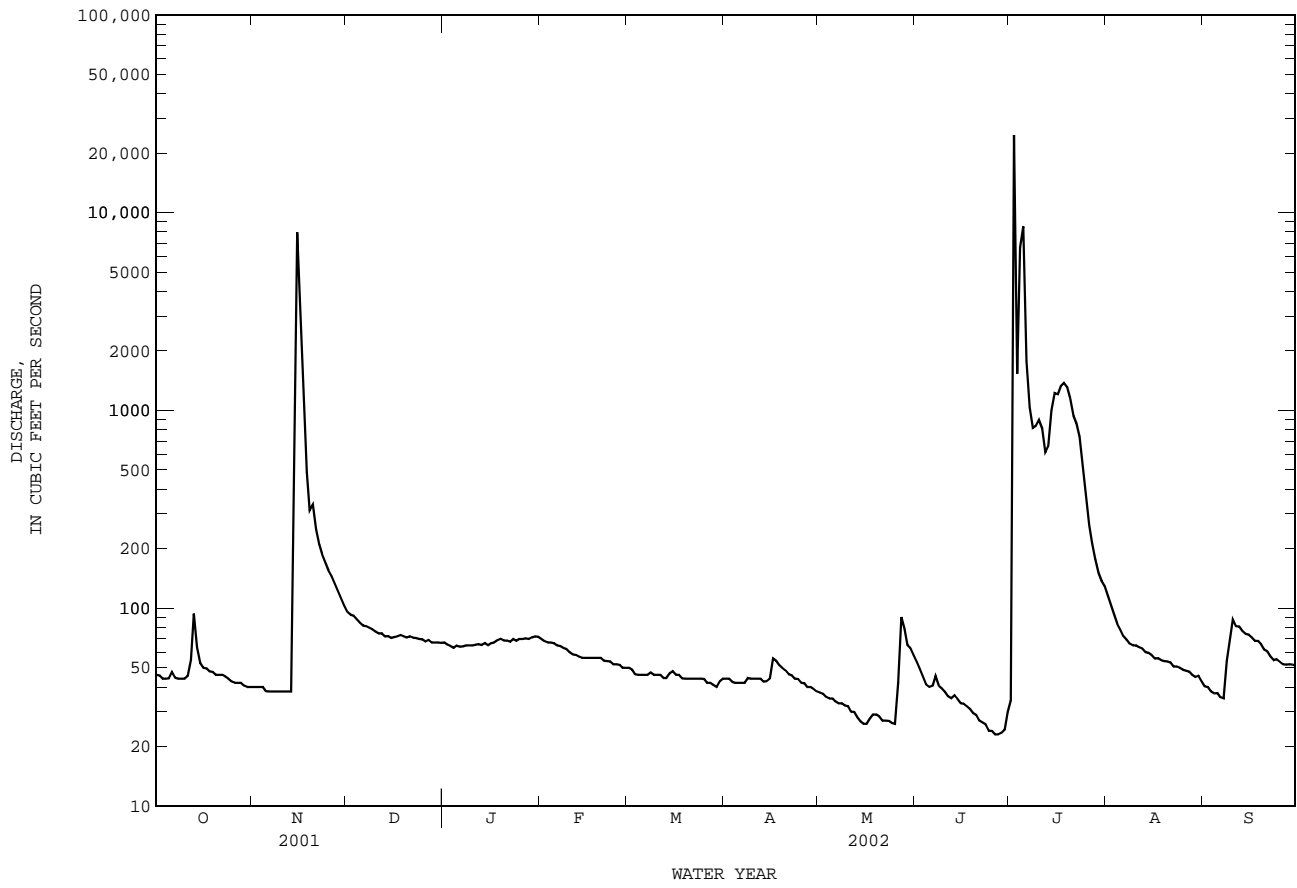
e Estimated

h See Period of Record paragraph.

i From indirect measurement of peak flow.

a From floodmark.

08195000 Frio River at Concan, TX--Continued



NUECES RIVER BASIN

08195000 FRIO RIVER AT CONCAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: June 1952, Dec. 1964 to July 1965, Aug. 1968 to Sept. 1993, Apr. 1996 to Apr. 1998, Nov. 2000 to current year.

BIOCHEMICAL DATA: Aug. 1968 to Sept. 1993, Apr. 1996 to Apr. 1998, Nov. 2000 to current year.

PESTICIDE DATA: Aug. 1968 to Sept. 1993, Nov. 2000 to current year.

SEDIMENT DATA: Apr. 1996 to Apr. 1998, Nov. 2000 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (PER- CENT SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L) AS SO4 (00945)	CHLO- RIDE, DIS- SOLVED (MG/L) AS CL (00940)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L) AS N (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) AS N (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) AS N (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) AS N (00608)
OCT 23...	1020	450	7.3	22.5	--e	--	--i	12.1	11.1	--	<.008	.44	<.04
DEC 18...	1100	450	7.5	14.0	9.6	97	190	11.9	8.05	--	<.008	1.00	<.04
JAN 15...	1030	430	8.3	12.5	10.0	98	200	11.3	8.88	--	<.008	.92	<.04
FEB 21...	1100	417	8.3	16.0	9.2	98	180	14.1	9.61	.59	.009	.60	.04
APR 17...	1100	406	7.2	24.0	7.4	92	170	13.6	9.50	--	<.008	.49	<.04
JUN 27...	1200	375	7.5	--e	8.5	--	--i	12.7	11.3	--	<.008	.22	<.04
JUL 30...	1320	440	7.9	27.0	7.4	97	210	14.3	10.2	--	E.004	.81	<.04
AUG 29...	0940	438	7.8	27.0	7.2	95	63	14.7	11.3	--	<.008	.53	<.04
SEP 24...	1200	429	7.8	23.0	8.4	103	200	14.0	9.89	--	<.008	.52	<.04

Date	NITRO- GEN, TOTAL (MG/L) AS N (00600)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L) AS N (00625)	PHOS- PHORUS TOTAL (MG/L) AS P (00665)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L) AS P (00671)	SEDI- MENT, SUS- PENDEED (MG/L) (80154)
OCT 23...	.61	.17	<.004	<.02	2.0
DEC 18...	--	E.10	<.004	<.02	1.0
JAN 15...	1.0	.11	<.004	<.02	.0
FEB 21...	--	E.06	<.004	<.02	4.0
APR 17...	.64	.15	E.002	<.02	7.0
JUN 27...	.36	.14	.004	<.02	8.0
JUL 30...	.93	.12	<.004	<.02	1.0
AUG 29...	.65	.11	E.002	<.02	2.0
SEP 24...	.64	.13	<.004	<.02	1.0

Remark codes used in this report:

< -- Less than
E -- Estimated value

Null value qualifier codes used in this report:

e -- Required equipment not functional/avail
i -- Required sample type not received

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NUECES RIVER BASIN

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.--Sept. 1952 to current year.

Water-quality records.--Chemical data: Jan. 1966 to Sept. 1993. Biochemical data: Jan. 1966 to Sept. 1993. Pesticide data: Jan. 1974 to Sept. 1993. Sediment data: Jan. 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 NGVD of 1929, from Texas Department of Transportation datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are several small diversions above station. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875 occurred in 1880 (about 33 ft). Flood of Jun. 14, 1935, reached a stage of 26.0 ft (discharge, 64,700 ft³/s, determined at site 2.6 mi upstream), and flood of Jul. 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.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.67	0.36	9.4	4.2	4.2	2.3	2.3	8.4	2.8	6.3	e23	e3.8
2	0.59	0.36	13	4.2	4.1	2.3	2.2	7.4	2.5	e12200	21	e3.5
3	0.51	0.36	11	3.9	4.1	2.2	2.1	6.6	2.5	e594	19	e3.4
4	0.49	0.32	9.9	4.0	3.8	2.1	1.9	5.3	2.5	e480	19	e3.2
5	0.51	0.32	9.1	4.1	3.9	2.1	1.8	5.2	2.9	411	18	e3.1
6	1.3	0.30	8.2	4.0	4.1	2.1	1.9	5.0	3.8	334	17	e3.0
7	0.84	0.29	7.3	4.0	4.1	2.2	2.3	4.4	e9.4	212	17	e96
8	0.61	0.29	7.7	3.8	3.8	2.3	2.6	3.9	e7.8	152	16	e90
9	0.71	0.29	7.1	4.0	3.5	2.3	2.7	3.7	e6.6	129	16	e79
10	0.84	0.29	6.9	4.1	3.5	2.0	2.7	3.4	6.1	102	e15	53
11	0.94	0.31	6.9	4.1	3.2	1.9	2.5	2.9	5.4	84	e15	34
12	1.9	0.32	7.1	4.0	3.0	1.9	2.3	2.6	5.0	72	e14	25
13	21	0.32	6.8	3.8	3.0	1.9	2.1	2.4	4.5	65	e13	20
14	5.9	119	6.1	4.0	3.0	1.9	3.2	2.3	4.0	62	e12	17
15	3.6	1880	6.2	4.1	3.0	1.9	6.0	2.2	3.7	69	e11	16
16	2.8	516	7.0	3.9	3.0	1.9	e12	2.0	3.5	e84	e9.9	16
17	2.1	232	7.1	4.3	3.0	1.9	e17	e5.8	3.3	e100	e9.0	15
18	1.7	108	6.7	4.4	3.0	2.0	e16	e7.0	3.1	e97	e8.5	15
19	1.4	70	6.2	4.3	3.0	2.4	e15	e5.2	2.9	90	e7.9	14
20	1.2	54	5.9	4.1	3.0	2.7	e15	3.9	2.6	81	e7.3	14
21	1.0	42	5.6	4.1	2.7	2.4	e14	3.1	2.4	75	e6.8	e13
22	0.90	35	5.7	4.2	2.7	2.1	e13	2.7	2.3	70	e6.4	e13
23	0.82	29	5.5	4.4	2.5	2.0	e12	2.7	2.4	e64	e6.0	e12
24	0.73	24	5.1	4.7	2.4	1.9	e12	2.6	2.1	e56	e5.5	e11
25	0.60	20	4.9	4.3	2.3	1.9	e11	2.5	2.2	e50	e5.1	e11
26	0.49	17	4.8	4.2	2.2	1.9	e10	7.5	2.2	e45	e4.8	e10
27	0.45	15	4.8	4.4	2.1	1.6	e11	5.5	2.2	e40	e4.5	e9.8
28	0.43	13	4.8	4.4	2.0	1.6	e10	4.1	2.2	e36	e4.2	e9.6
29	0.40	12	4.4	4.7	---	1.7	10	3.7	2.7	e32	e4.3	e9.4
30	0.38	10	4.6	4.8	---	2.7	9.3	3.1	4.3	e29	e4.1	e9.2
31	0.36	---	4.3	4.8	---	2.8	---	2.8	---	e26	e4.0	---
TOTAL	56.17	3200.13	210.1	130.3	88.2	64.9	225.9	129.9	109.9	15947.3	344.3	632.0
MEAN	1.812	106.7	6.777	4.203	3.150	2.094	7.530	4.190	3.663	514.4	11.11	21.07
MAX	21	1880	13	4.8	4.2	2.8	17	8.4	9.4	12200	23	96
MIN	0.36	0.29	4.3	3.8	2.0	1.6	1.8	2.0	2.1	6.3	4.0	3.0
AC-FT	111	6350	417	258	175	129	448	258	218	31630	683	1250

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2002, BY WATER YEAR (WY)

	MEAN	55.99	33.72	27.14	21.85	23.46	27.09	28.34	37.13	60.92	45.21	36.36	36.33
MAX	258	134	185	120	131	208	257	338	483	514	365	277	
(WY)	1970	1968	1992	1992	1992	1992	1981	1987	1987	2002	1966	1958	
MIN	0.000	0.000	0.055	0.51	0.87	2.09	1.50	0.86	0.19	0.077	0.000	0.000	
(WY)	1957	1957	1957	1957	1957	2002	1956	1956	1953	1953	1956	1956	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1952 - 2002

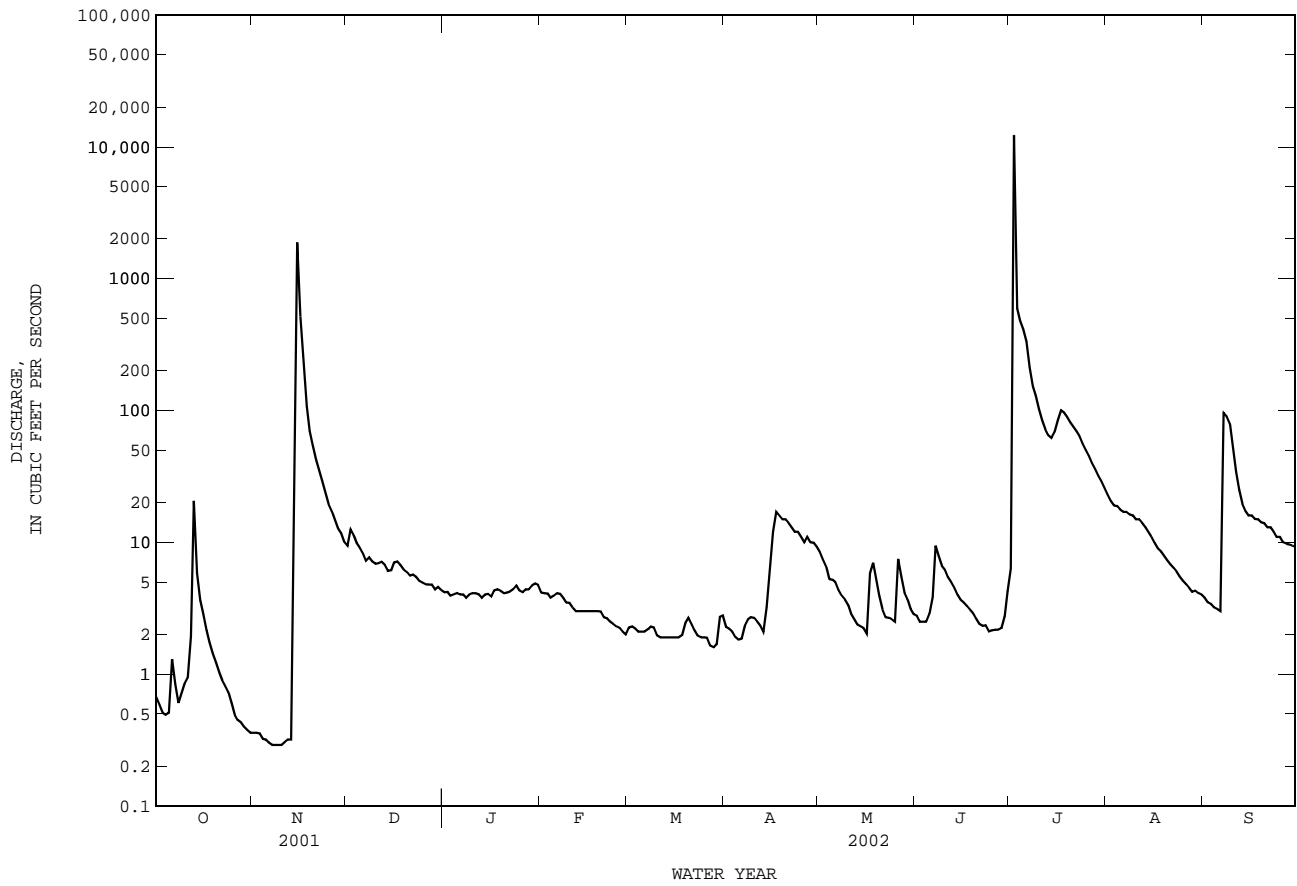
ANNUAL TOTAL	7569.77	21139.10	
ANNUAL MEAN	20.74	57.92	36.24
HIGHEST ANNUAL MEAN			121
LOWEST ANNUAL MEAN			2.99
HIGHEST DAILY MEAN	1880	Nov 15	12200
LOWEST DAILY MEAN	0.29	Nov 7	0.29
ANNUAL SEVEN-DAY MINIMUM	0.30	Nov 5	0.30
MAXIMUM PEAK FLOW			97900
MAXIMUM PEAK STAGE			a27.02
ANNUAL RUNOFF (AC-FT)	15010	41930	a27.60
10 PERCENT EXCEEDS	26	43	64
50 PERCENT EXCEEDS	9.8	4.2	14
90 PERCENT EXCEEDS	0.86	1.4	2.2

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08196000 Dry Frio River near Reagan Wells, TX--Continued



NUECES RIVER BASIN

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.--Oct. 1953 to current year. Sum of records published as Frio River at Knippa (discontinued station 08195700) and Dry Frio River at Knippa (discontinued station 08196500) for period Sept. 1952 to Sept. 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. Part of flow of Frio River enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses the basin between Frio River at Concan (station 08195000) and this station. Most of the low flow enters this formation. Many diversions for irrigation above station. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1887, about 35 ft in 1894. Flood of Jul. 1, 1932, reached a stage of about 30 ft. A higher flood than that of 1894 occurred prior to 1887, from information by local residents.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.6	0.05
2	0.00	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.00	e19900	1.4	0.05
3	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	e8100	0.88	0.05
4	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	e1500	0.52	0.05
5	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	e6000	0.27	0.05
6	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	e3300	0.20	0.04
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e2100	0.17	0.03
8	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	e1600	0.16	0.03
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e995	0.16	0.03
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e795	0.16	0.03
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e650	0.13	0.03
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e500	0.09	0.03
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e340	0.09	0.03
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e550	0.09	0.03
15	0.00	4930	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e810	0.09	0.03
16	0.00	5390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1500	0.09	0.03
17	0.00	2060	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e610	0.09	0.03
18	0.00	544	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e400	0.09	0.03
19	0.00	301	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e250	0.09	0.0
20	0.00	260	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e140	0.09	0.00
21	0.00	202	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e80	0.09	0.00
22	0.00	142	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e46	0.09	0.00
23	0.00	107	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e31	0.09	0.00
24	0.00	77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e19	0.08	0.00
25	0.00	50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e11	0.07	0.00
26	0.00	31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e7.0	0.07	0.00
27	0.00	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e2.5	0.07	0.00
28	0.00	7.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e2.2	0.07	0.00
29	0.00	4.4	0.00	0.00	---	0.00	0.00	0.00	0.00	e1.9	0.07	0.00
30	0.00	2.2	0.00	0.00	---	0.00	0.00	0.00	0.00	1.7	0.07	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	1.6	0.05	---
TOTAL	0.00	14126.10	2.31	0.00	0.00	0.00	0.00	0.00	0.00	50243.90	7.28	0.65
MEAN	0.000	470.9	0.075	0.000	0.000	0.000	0.000	0.000	0.000	1621	0.235	0.022
MAX	0.00	5390	0.99	0.00	0.00	0.00	0.00	0.00	0.00	19900	1.6	0.05
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
AC-FT	0.00	28020	4.6	0.00	0.00	0.00	0.00	0.00	0.00	99660	14	1.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2002, BY WATER YEAR (WY)

	MEAN	78.92	18.47	26.64	10.21	6.507	10.59	25.44	35.54	113.9	66.56	65.93	44.74
MAX	842	471	710	241	300	455	702	865	1584	1621	1224	699	
(WY)	1997	2002	1985	1992	1992	1992	1981	1987	1997	2002	1998	1958	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
(WY)	1954	1954	1954	1954	1954	1954	1954	1955	1954	1954	1954	1954	

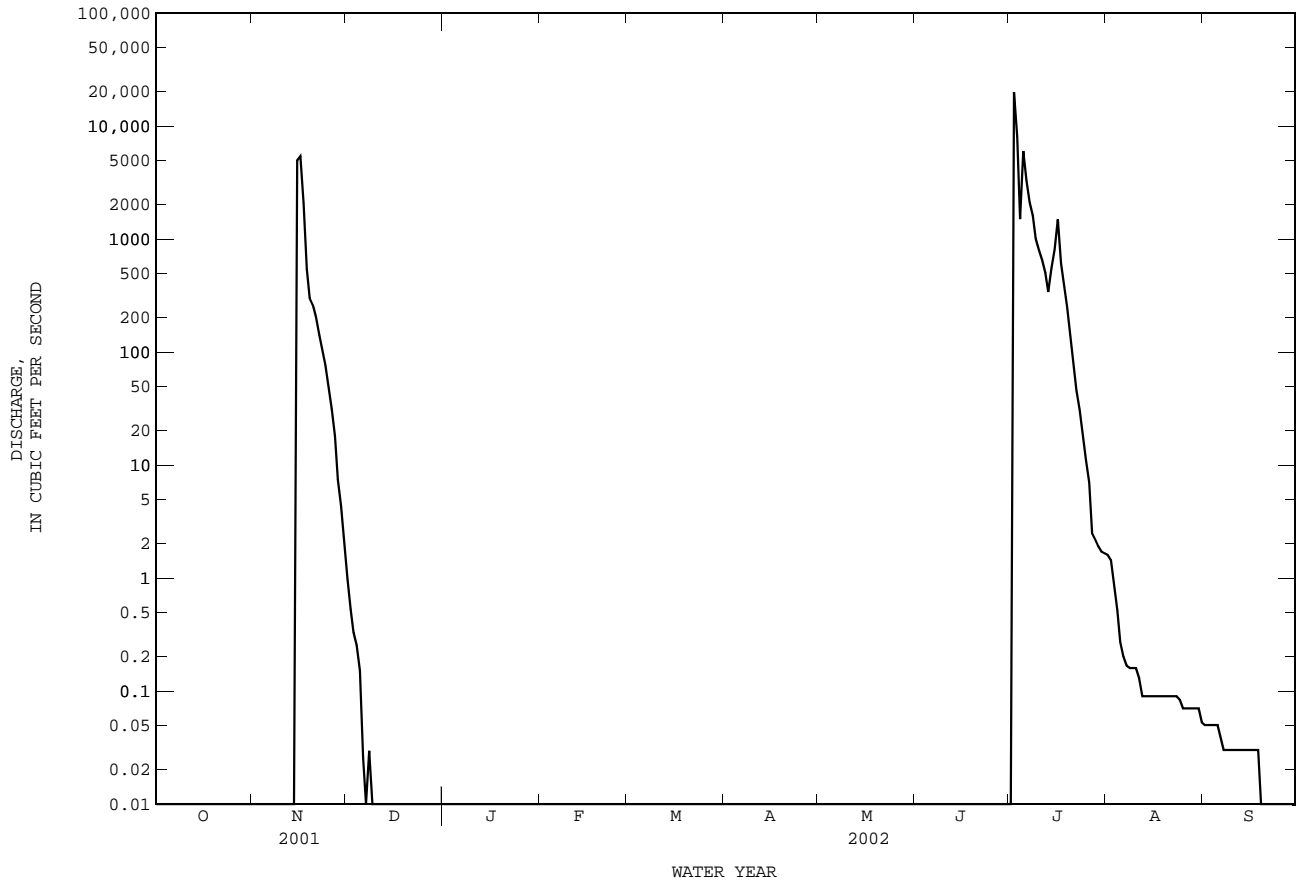
SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1954 - 2002
ANNUAL TOTAL	14128.41	64380.24	
ANNUAL MEAN	38.71	176.4	42.12
HIGHEST ANNUAL MEAN			221
LOWEST ANNUAL MEAN			0.000
HIGHEST DAILY MEAN	5390	Nov 16	19900
LOWEST DAILY MEAN	0.00	Jan 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00
MAXIMUM PEAK FLOW			i189000
MAXIMUM PEAK STAGE			a34.82
ANNUAL RUNOFF (AC-FT)	28020	127700	30520
10 PERCENT EXCEEDS	0.00	14	0.14
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08197500 Frio River below Dry Frio River near Uvalde, TX--Continued



NUECES RIVER BASIN

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.--Oct. 1942 to current year.

Water-quality records.--Chemical data: Nov. 1964 to July 1965, Feb. 1970 to Sept. 1993, Apr. 1996 to Apr. 1998. Biochemical data: Feb. 1970 to Sept. 1993, Apr. 1996 to Apr. 1998. Pesticide data: Aug. 1971 to Sept. 1993. Sediment data: Nov. 1965, Apr. 1996 to Apr. 1998.

REVISED RECORDS.--WSP 1312: 1943(M), 1944(M), 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 1,131.20 ft above NGVD of 1929. Prior to Apr. 9, 1971, at site 0.3 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation. There are several small diversions above station for irrigation. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--The 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. 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.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	23	98	66	49	37	34	33	32	39	115	29
2	27	23	104	65	49	36	32	32	30	7380	109	28
3	25	23	99	65	49	35	31	33	28	1910	102	27
4	24	22	93	65	49	35	32	34	28	11100	95	26
5	24	22	88	66	50	35	32	34	27	17100	91	26
6	27	22	85	64	50	34	34	32	26	2660	87	24
7	26	22	83	63	48	34	37	30	29	1430	83	37
8	23	22	87	62	47	33	43	29	28	1030	84	101
9	24	22	87	63	47	32	38	28	28	854	84	118
10	24	22	84	62	45	33	35	28	27	703	78	154
11	24	22	86	61	45	32	34	26	27	601	73	164
12	36	21	89	60	45	32	34	27	26	522	66	139
13	107	21	83	60	45	31	35	27	24	467	63	127
14	45	112	83	59	43	30	39	27	22	443	61	119
15	36	689	82	59	43	30	41	27	28	440	59	113
16	32	694	82	59	42	29	47	27	24	375	56	109
17	30	359	80	59	42	29	43	31	23	348	53	105
18	29	204	79	58	42	30	40	28	22	312	50	101
19	28	186	78	58	42	33	39	26	22	283	49	103
20	27	234	75	56	40	36	38	27	23	261	46	96
21	26	178	73	57	40	33	38	27	21	246	44	95
22	25	155	72	58	39	31	36	26	20	229	42	92
23	24	142	71	57	37	32	35	26	20	212	40	89
24	24	131	70	56	37	31	35	25	20	198	39	87
25	23	122	69	55	36	30	34	24	20	184	37	85
26	23	117	69	55	35	29	35	82	19	172	35	84
27	23	112	70	55	36	30	35	47	20	161	33	82
28	24	110	69	54	37	31	34	39	22	149	32	81
29	23	109	68	50	---	31	35	41	22	137	32	80
30	22	102	67	50	---	36	34	39	25	133	34	79
31	22	---	67	50	---	35	---	35	---	124	31	---
TOTAL	905	4043	2490	1827	1209	1005	1089	997	733	50203	1903	2600
MEAN	29.19	134.8	80.32	58.94	43.18	32.42	36.30	32.16	24.43	1619	61.39	86.67
MAX	107	694	104	66	50	37	47	82	32	17100	115	164
MIN	22	21	67	50	35	29	31	24	19	39	31	24
AC-FT	1800	8020	4940	3620	2400	1990	2160	1980	1450	99580	3770	5160
CFSM	0.14	0.65	0.39	0.29	0.21	0.16	0.18	0.16	0.12	7.86	0.30	0.42
IN.	0.16	0.73	0.45	0.33	0.22	0.18	0.20	0.18	0.13	9.07	0.34	0.47

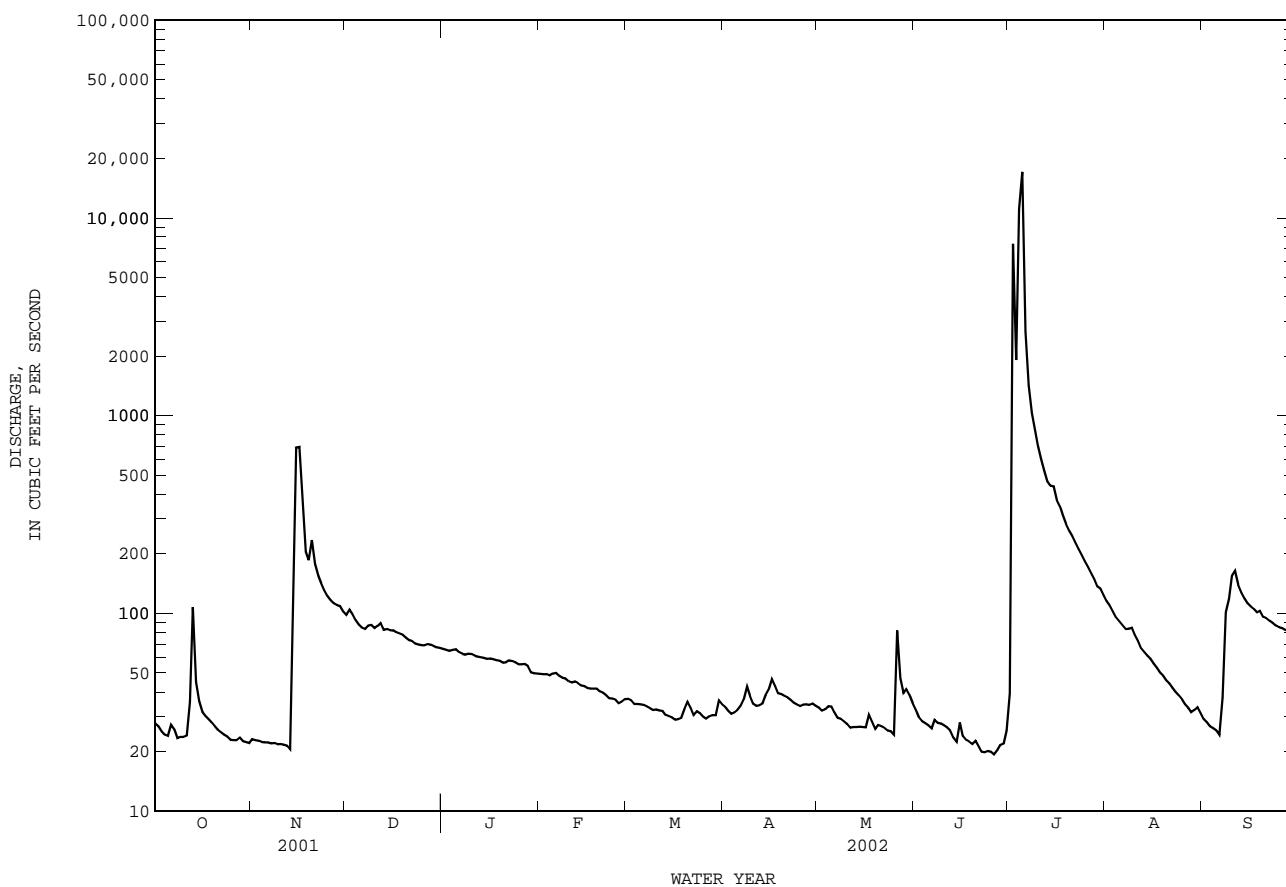
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2002, BY WATER YEAR (WY)

MEAN	66.75	57.21	51.14	47.18	52.78	58.88	57.51	68.04	120.6	102.3	56.36	50.21
MAX	318	388	612	408	584	624	392	389	1527	1619	669	306
(WY)	1972	2001	1992	1992	1992	1992	1992	1987	1987	2002	1971	1980
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1952	1952	1952	1952	1952	1952	1954	1953	1953	1953	1948	1951

08198000 Sabinal River near Sabinal, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1943 - 2002	
ANNUAL TOTAL	30227		69004		65.78	
ANNUAL MEAN	82.81		189.1		340	
HIGHEST ANNUAL MEAN					0.82	
LOWEST ANNUAL MEAN					17100	
HIGHEST DAILY MEAN	1180	Sep 6	17100	Jul 5	17100	Jul 5 2002
LOWEST DAILY MEAN	12	Aug 25	19	Jun 26	0.00	Aug 10 1946
ANNUAL SEVEN-DAY MINIMUM	14	Aug 20	20	Jun 21	0.00	Aug 10 1946
MAXIMUM PEAK FLOW			108000	Jul 5	108000	Jul 5 2002
MAXIMUM PEAK STAGE			33.74	Jul 5	33.74	Jul 5 2002
ANNUAL RUNOFF (AC-FT)	59960		136900		47660	
ANNUAL RUNOFF (CFSM)	0.40		0.92		0.32	
ANNUAL RUNOFF (INCHES)	5.46		12.46		4.34	
10 PERCENT EXCEEDS	133		151		123	
50 PERCENT EXCEEDS	78		40		26	
90 PERCENT EXCEEDS	23		24		0.00	

i From indirect measurement of peak flow.
a From floodmark.



NUECES RIVER BASIN

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 Rancho Creek, and 223 mi upstream from mouth.

DRAINAGE AREA.--241 mi².

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

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 882.17 ft above NGVD of 1929. Prior to Jul. 29, 1958, nonrecording gage, and Jul. 29, 1958, to Mar. 19, 1964, water-stage recorder at site 80 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation. 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). No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 40 ft Aug. 24, 1919, from information by local residents. Flood of Jul. 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.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	4.7	5.3	3.6	2.5	2.0	2.6	2.4	2.2	3.3	88	3.8
2	6.1	4.6	5.3	3.5	2.5	1.9	2.6	2.3	2.3	19400	78	3.7
3	6.0	4.6	5.1	3.5	2.4	1.9	2.5	2.3	2.3	2530	69	3.6
4	6.0	4.5	4.9	3.4	2.4	1.9	2.5	2.4	2.3	12700	61	3.6
5	6.0	4.5	4.6	3.4	2.4	1.9	2.5	2.4	2.2	22900	54	3.6
6	5.9	4.5	4.6	3.7	2.2	1.9	2.5	2.4	2.3	3150	48	3.5
7	5.8	4.5	4.5	4.2	2.3	2.0	2.9	2.4	2.4	1660	44	5.2
8	5.8	4.5	4.6	3.7	2.3	2.0	3.0	2.2	2.4	1230	40	5.5
9	5.8	4.5	4.6	3.6	2.2	1.9	2.5	2.1	2.3	1010	40	19
10	5.8	4.5	4.5	3.4	2.1	1.9	2.5	2.1	2.2	850	38	63
11	5.8	4.4	4.6	3.3	2.1	1.9	2.5	2.1	2.2	740	34	114
12	5.7	4.3	4.5	3.2	2.1	2.1	2.6	2.1	2.1	644	29	58
13	5.9	4.3	4.3	3.1	2.1	2.1	2.6	2.1	2.1	576	24	34
14	5.8	4.6	4.8	3.1	2.1	2.1	3.1	2.1	2.0	538	20	24
15	5.8	112	4.7	3.0	2.1	2.1	2.7	2.2	2.1	540	17	17
16	5.7	604	4.7	3.0	2.1	2.1	3.0	2.2	2.1	475	14	14
17	5.7	486	4.6	3.0	2.0	2.2	2.7	2.8	2.1	429	12	12
18	5.7	108	4.6	3.0	2.0	2.2	2.7	2.3	2.1	392	10	9.8
19	5.7	46	4.5	2.9	1.9	3.0	2.6	2.3	2.2	348	9.0	8.5
20	5.6	61	4.1	2.9	2.0	3.7	2.6	2.4	2.2	311	7.8	7.4
21	5.5	50	4.0	2.9	1.9	2.5	2.6	2.3	2.2	278	7.0	6.5
22	5.3	31	4.0	2.9	1.9	2.5	2.6	2.3	2.1	248	6.2	5.9
23	5.2	23	4.0	2.9	1.9	2.6	2.5	2.2	2.1	223	5.7	5.6
24	5.2	18	4.0	2.8	1.9	2.6	2.5	2.3	2.1	201	5.2	5.0
25	5.1	13	3.9	2.9	1.9	2.6	2.5	2.3	2.1	182	4.8	4.7
26	4.9	9.1	3.9	2.8	1.8	2.4	2.6	2.2	2.6	164	4.5	4.5
27	5.0	7.2	3.7	2.7	1.9	2.4	2.5	2.1	2.7	148	4.3	4.3
28	4.9	6.4	3.7	2.6	2.0	2.4	2.5	2.3	2.4	131	4.1	4.1
29	4.8	6.3	3.6	2.6	---	2.5	2.5	2.3	2.4	119	4.3	4.0
30	4.7	5.7	3.6	2.6	---	2.7	2.4	2.2	2.6	112	4.2	3.9
31	4.6	---	3.7	2.5	---	2.5	---	2.2	---	100	3.9	---
TOTAL	171.9	1649.7	135.5	96.7	59.0	70.5	78.4	70.3	67.4	72332.3	791.0	461.7
MEAN	5.545	54.99	4.371	3.119	2.107	2.274	2.613	2.268	2.247	2333	25.52	15.39
MAX	6.1	604	5.3	4.2	2.5	3.7	3.1	2.8	2.7	22900	88	114
MIN	4.6	4.3	3.6	2.5	1.8	1.9	2.4	2.1	2.0	3.3	3.9	3.5
AC-FT	341	3270	269	192	117	140	156	139	134	143500	1570	916

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2002, BY WATER YEAR (WY)

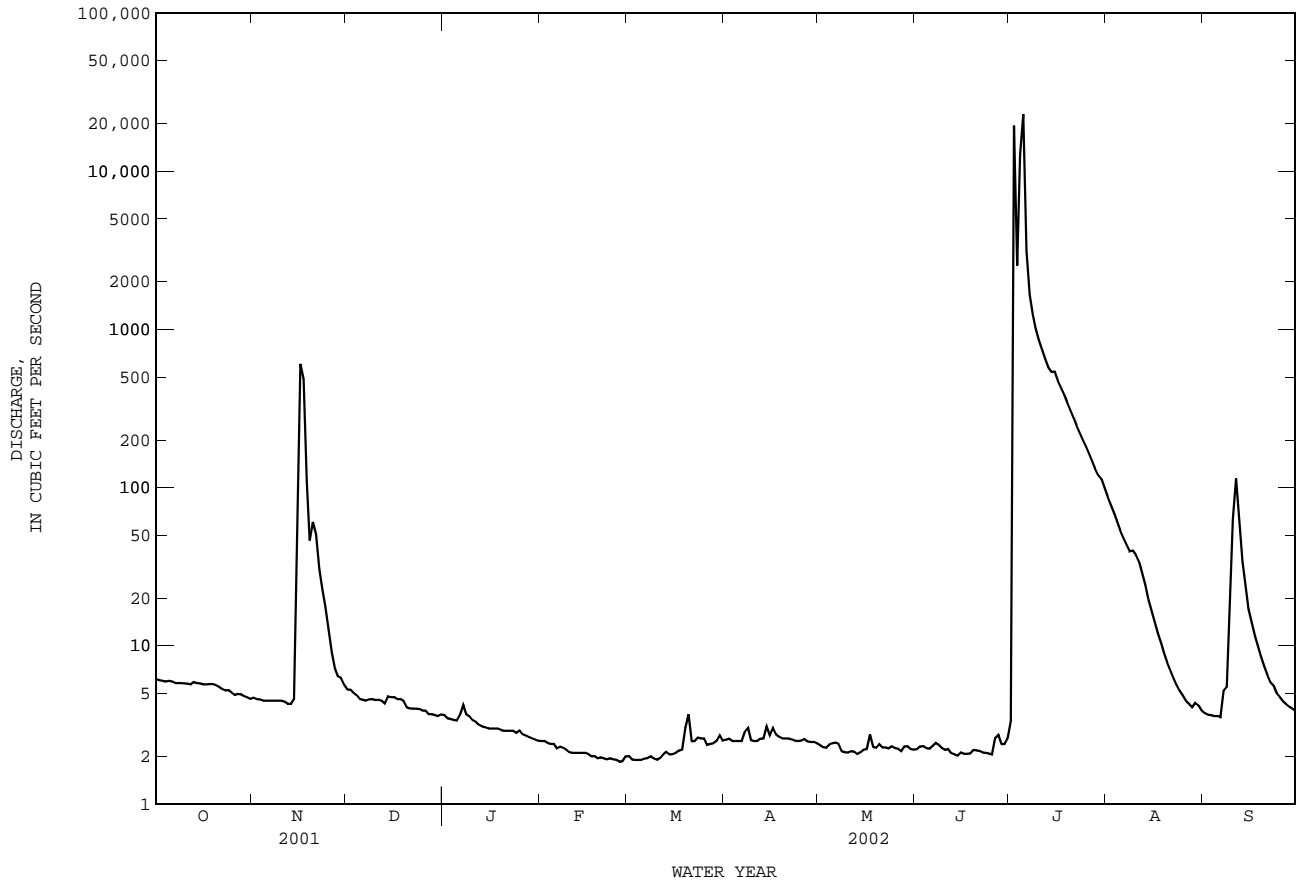
	MEAN	35.70	21.29	19.00	14.92	20.21	23.86	26.10	32.26	109.0	101.6	35.28	21.24
MAX	261	247	498	292	510	535	349	427	1493	2343	709	210	
(WY)	1970	2001	1992	1992	1992	1992	1992	1987	1987	2002	1971	1958	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
(WY)	1953	1953	1953	1953	1953	1956	1956	1953	1953	1953	1962	1962	

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1952 - 2002

ANNUAL TOTAL	4650.0	75984.4	
ANNUAL MEAN	12.74	208.2	
HIGHEST ANNUAL MEAN			38.48
LOWEST ANNUAL MEAN			0.070
HIGHEST DAILY MEAN	604	Nov 16	22900
LOWEST DAILY MEAN	3.2	May 6	1.8
ANNUAL SEVEN-DAY MINIMUM	3.4	Aug 20	1.9
MAXIMUM PEAK FLOW			c119000
MAXIMUM PEAK STAGE			a39.00
ANNUAL RUNOFF (AC-FT)	9220	150700	27880
10 PERCENT EXCEEDS	14	82	42
50 PERCENT EXCEEDS	5.9	3.6	1.6
90 PERCENT EXCEEDS	3.9	2.1	0.10

c From rating curve extended above indirect discharge measurement of 71,700 ft³/s.
a From floodmark.

08198500 Sabinal River at Sabinal, TX--Continued



NUECES RIVER BASIN

08200000 Hondo Creek near Tarpley, TX

LOCATION.--Lat 29°34'10", long 99°14'47", Medina County, Hydrologic Unit 12110107, on right bank 50 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.--Aug. 1952 to current year.

Water-quality records.--Chemical data: Nov. 1965 to Sept. 1969, Feb. 1970 to Sept. 1993. Biochemical data: Feb. 1970 to Sept. 1993. Pesticide data: Aug. 1971 to Sept. 1993. Sediment data: Nov. to Dec. 1965.

REVISED RECORDS.--WSP 1712: 1957. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,169.1 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are several small diversions for irrigation above station. No flow at times.

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 22, 1997.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	5.9	67	34	13	6.3	5.2	3.2	4.9	43	e60	e14
2	7.8	5.9	70	33	13	6.0	4.0	2.9	4.4	1830	e55	e14
3	7.4	5.8	72	32	13	5.4	3.5	2.8	4.1	1620	e51	e13
4	7.2	5.8	66	32	13	5.5	3.3	2.8	3.8	6790	e46	e12
5	7.1	5.5	62	33	13	5.3	3.5	3.0	3.7	e30000	e41	e12
6	7.0	5.8	60	30	13	5.2	3.7	2.6	3.4	e9000	e36	e12
7	6.4	5.8	59	29	12	5.2	5.5	2.3	3.3	e3200	e32	e100
8	6.2	5.7	65	28	11	5.3	7.1	2.2	3.8	e1580	e35	e420
9	6.3	5.4	61	27	11	4.9	5.0	2.0	2.6	e1100	e30	e520
10	6.3	5.4	55	26	11	4.4	4.6	1.7	2.5	e800	e25	e395
11	6.6	5.5	61	25	10	4.4	4.4	1.5	2.3	e610	e27	e310
12	6.2	5.5	59	24	10	4.1	4.3	1.4	2.0	e465	e20	e260
13	13	5.5	57	24	9.7	3.8	4.2	1.6	1.7	e520	e19	e210
14	9.6	7.3	55	23	9.5	3.7	6.6	1.4	1.4	e400	e18	173
15	7.8	900	55	22	9.5	3.6	5.1	1.2	1.0	e340	e17	153
16	7.1	219	55	21	8.8	3.2	5.8	1.1	0.81	e290	e17	138
17	7.1	139	53	21	8.1	3.2	5.2	6.8	0.64	e240	e16	124
18	7.2	105	53	21	8.8	3.7	5.1	6.1	0.48	e190	e15	116
19	7.0	144	50	20	8.7	4.1	4.8	2.0	0.29	e162	e15	157
20	7.0	136	48	18	8.0	4.6	4.5	1.4	0.33	e140	e14	112
21	6.6	114	46	18	8.0	3.4	4.4	1.3	0.28	e122	e14	95
22	6.5	105	47	18	7.3	3.0	4.6	1.4	0.20	e110	e14	90
23	6.5	97	46	17	7.2	3.0	4.1	1.4	0.19	e94	e13	86
24	6.5	89	44	17	7.1	3.0	3.9	1.4	0.14	e88	e13	84
25	6.2	83	43	16	6.8	2.9	3.8	1.5	0.12	e82	e12	79
26	6.0	81	42	15	6.3	2.6	4.3	35	0.10	e78	e12	e74
27	6.0	77	42	15	6.2	2.6	3.8	6.2	0.10	e72	e11	e69
28	5.9	73	40	14	6.0	2.8	3.7	8.5	2.0	e70	e11	e63
29	5.8	76	38	14	---	2.9	3.5	5.9	0.72	e68	e16	e58
30	5.8	70	37	14	---	5.9	3.4	6.2	121	e66	e15	e54
31	5.8	---	36	14	---	4.1	---	5.6	---	e64	e15	---
TOTAL	215.5	2588.8	1644	695	269.0	128.1	134.9	124.4	172.30	60234	735	4017
MEAN	6.952	86.29	53.03	22.42	9.607	4.132	4.497	4.013	5.743	1943	23.71	133.9
MAX	13	900	72	34	13	6.3	7.1	35	121	30000	60	520
MIN	5.8	5.4	36	14	6.0	2.6	3.3	1.1	0.10	43	11	12
AC-FT	427	5130	3260	1380	534	254	268	247	342	119500	1460	7970

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2002, BY WATER YEAR (WY)

	MEAN	36.96	29.17	33.30	26.75	33.36	36.23	36.27	62.65	93.69	75.67	36.39	29.00
MAX	254	134	541	172	342	323	178	402	1056	1943	654	153	
(WY)	1972	1999	1992	1992	1992	1992	1992	1987	1987	2002	1971	1958	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
(WY)	1956	1955	1955	1956	1956	1956	1956	1956	1996	1996	1984	1955	

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1952 - 2002

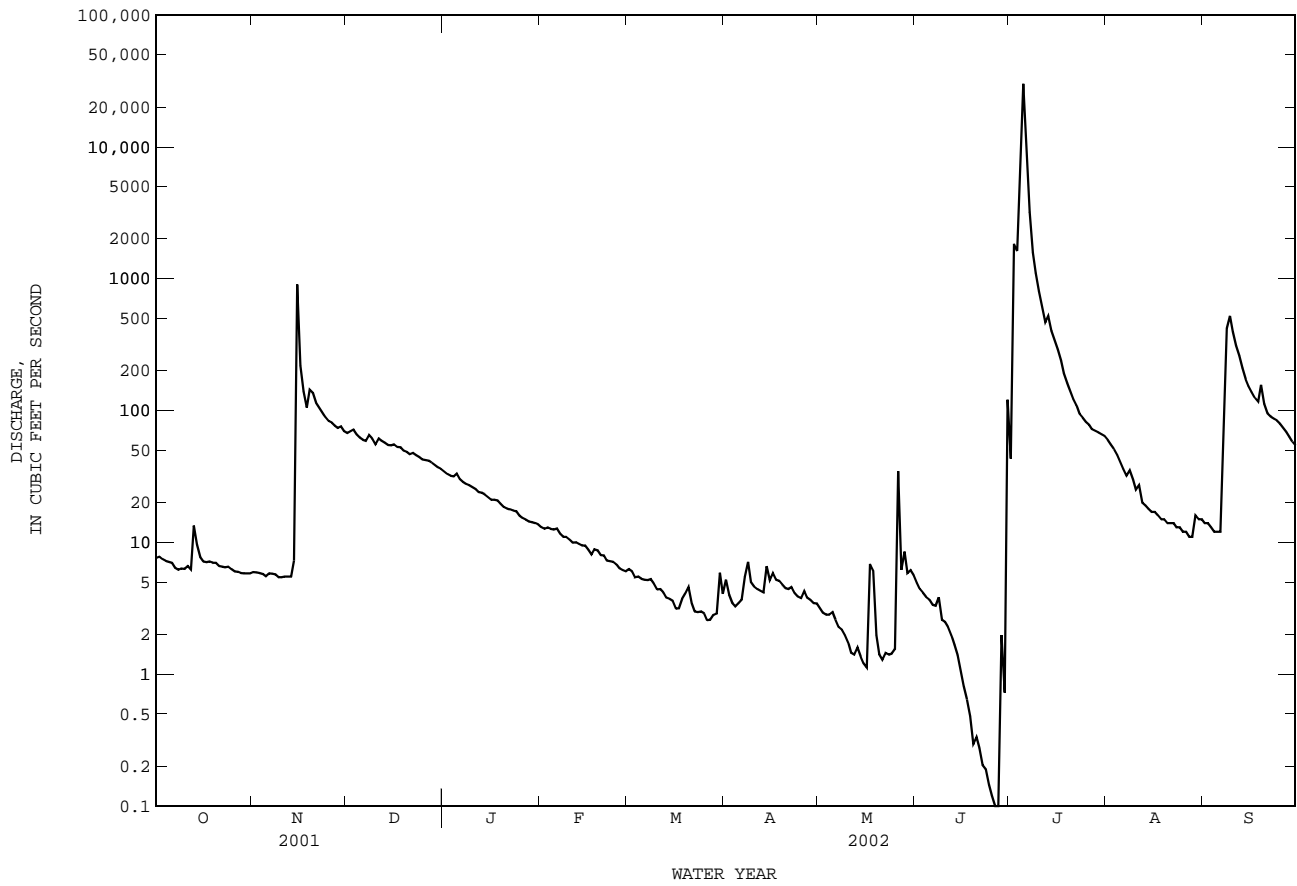
ANNUAL TOTAL	16684.8	70958.00	
ANNUAL MEAN	45.71	194.4	44.21
HIGHEST ANNUAL MEAN			205
LOWEST ANNUAL MEAN			0.41
HIGHEST DAILY MEAN	900	Nov 15	30000
LOWEST DAILY MEAN	5.4	Nov 9	0.10
ANNUAL SEVEN-DAY MINIMUM	5.5	Nov 7	0.16
MAXIMUM PEAK FLOW			55300
MAXIMUM PEAK STAGE			a25.30
ANNUAL RUNOFF (AC-FT)	33090	140700	32030
10 PERCENT EXCEEDS	83	121	83
50 PERCENT EXCEEDS	43	11	12
90 PERCENT EXCEEDS	7.2	2.4	0.20

e Estimated

c From rating curve extended above indirect measurement of 69,800 ft³/s.

a From floodmark.

08200000 Hondo Creek near Tarpley, TX--Continued



NUECES RIVER BASIN

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.--Oct. 1960 to current year.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 897.87 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known regulation. Most of the low flow enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses the basin between Hondo Creek near Tarpley (station 08200000) and this station. There are several small diversions above station for irrigation. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 21 ft in Sept. 1919, from information by local resident. Other substantial floods occurred in Jul. 1932, stage 18 ft, and Jun. 17, 1958, stage 17 ft.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e300	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e2000	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e2500	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e6000	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e24000	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e1600	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e220	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e58	0.00	65
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e24	0.00	175
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.0	0.00	4.8
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.7	0.00	0.33
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.01
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26	0.00	0.00
15	0.00	173	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.3	0.00	0.00
16	0.00	6.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00
17	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	e450	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	180.21	0.00	0.00	0.00	0.00	0.00	0.00	450.00	36800.32	0.00	245.14
MEAN	0.000	6.007	0.000	0.000	0.000	0.000	0.000	0.000	15.00	1187	0.000	8.171
MAX	0.00	173	0.00	0.00	0.00	0.00	0.00	0.00	450	24000	0.00	175
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	357	0.00	0.00	0.00	0.00	0.00	0.00	893	72990	0.00	486

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002, BY WATER YEAR (WY)

MEAN	12.48	0.626	9.987	2.611	6.521	8.574	6.665	27.61	59.16	41.49	32.17	6.850
MAX	160	10.8	379	56.9	187	168	89.5	468	1060	1187	1015	151
(WY)	1972	1972	1992	1968	1992	1992	1981	1987	1987	2002	1971	1980
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1962	1961	1962	1961	1962	1962	1961	1961	1962	1962	1961	1961

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1961 - 2002

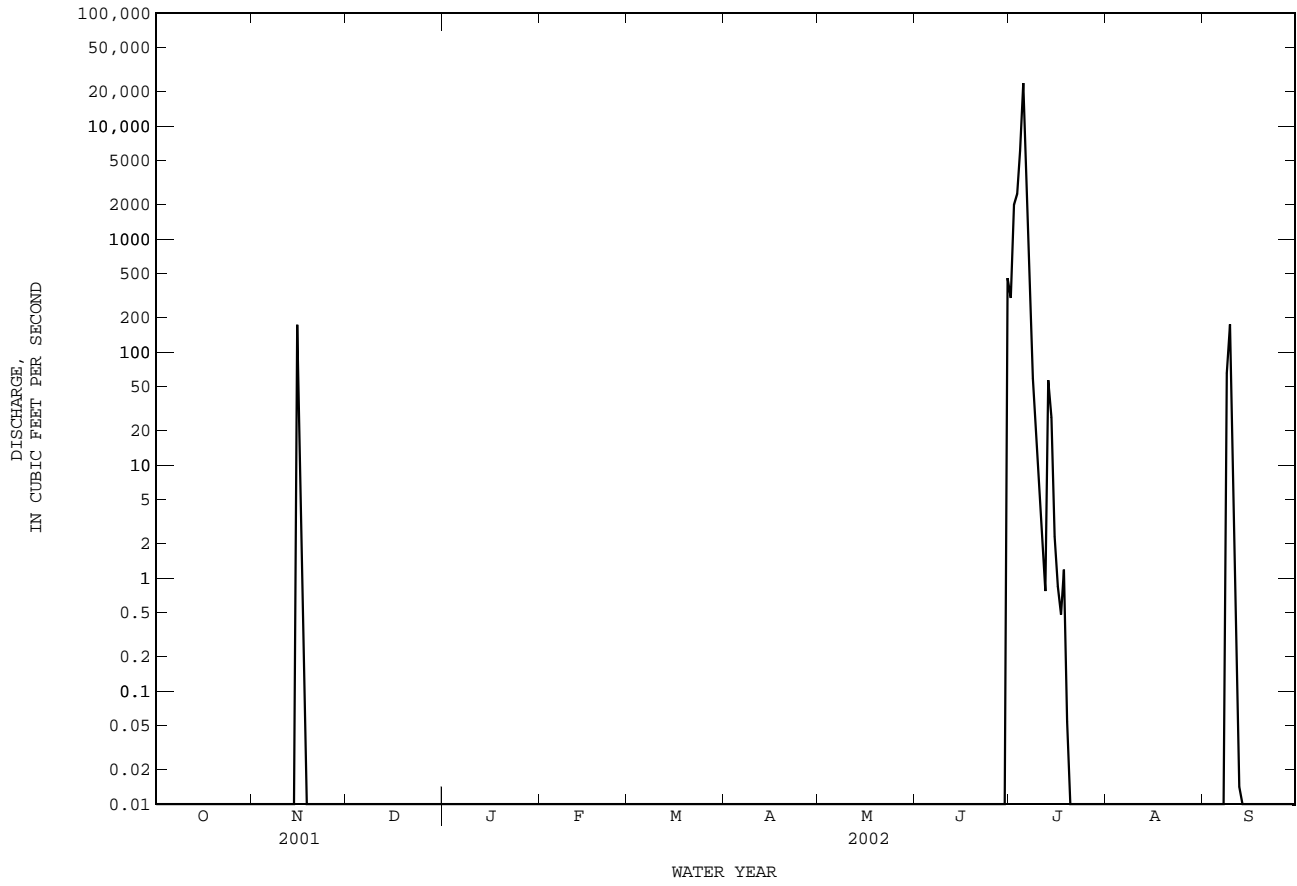
ANNUAL TOTAL	180.21	37675.67	
ANNUAL MEAN	0.494	103.2	17.98
HIGHEST ANNUAL MEAN			128
LOWEST ANNUAL MEAN			0.000
HIGHEST DAILY MEAN	173	Nov 15	24000
LOWEST DAILY MEAN	0.00	Jan 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00
MAXIMUM PEAK FLOW			31600
MAXIMUM PEAK STAGE			a13.66
ANNUAL RUNOFF (AC-FT)	357		74730
10 PERCENT EXCEEDS	0.00		0.00
50 PERCENT EXCEEDS	0.00		0.00
90 PERCENT EXCEEDS	0.00		0.00

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08200700 Hondo Creek at King Waterhole near Hondo, TX--Continued



NUECES RIVER BASIN

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.

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

Water-quality records.--Chemical data: Nov. 1965, Sept. 1969 to Jul. 1994. Biochemical data: Mar. 1970 to Jul. 1999. Pesticide data: Jan. 1974 to Sept. 1998. Sediment data: Nov. 1965, Aug. 1994 to Sept. 1998.

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. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1901, 16.4 ft Jun. 17, 1958, from floodmarks (discharge, 52,600 ft³/s, by slope-area measurement of peak flow).

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	3.7	17	9.2	4.0	2.8	2.1	1.4	1.5	2.5	18	2.0
2	4.9	4.0	19	9.0	4.0	2.5	2.0	1.4	1.3	1310	16	1.8
3	4.6	4.5	18	8.9	4.0	2.3	1.8	1.2	1.2	628	15	1.7
4	4.4	4.2	16	8.8	4.0	2.3	1.8	1.2	1.2	1360	13	1.6
5	4.4	4.1	15	8.9	4.2	2.3	1.9	1.2	1.3	3920	12	1.5
6	5.1	4.0	15	8.1	4.0	2.4	2.1	1.1	1.4	675	12	1.4
7	4.6	3.9	14	7.8	3.7	2.4	3.8	0.94	1.3	416	11	1.6
8	4.0	4.1	20	7.6	3.5	2.5	5.0	0.93	1.1	288	14	128
9	4.0	3.9	15	7.6	3.5	2.4	2.7	0.94	1.1	228	13	96
10	4.1	3.9	15	7.5	3.1	2.1	2.1	0.92	1.2	172	10	73
11	4.1	4.0	16	6.9	3.0	2.1	2.1	0.85	1.1	143	11	48
12	4.6	3.9	16	6.8	3.1	2.1	2.2	0.80	1.1	122	8.5	29
13	21	3.9	15	6.7	3.1	1.8	2.1	0.80	1.1	140	7.6	25
14	8.9	7.5	15	6.6	3.0	1.9	3.9	0.91	1.0	115	7.0	21
15	6.5	86	15	6.3	3.0	2.0	3.1	0.92	1.2	110	6.4	18
16	5.4	56	15	6.1	2.8	1.8	4.4	0.80	1.1	89	6.0	17
17	5.0	37	13	6.2	2.9	2.0	3.5	1.4	1.1	76	5.6	16
18	5.0	31	13	6.0	3.2	2.2	2.6	1.7	0.99	65	5.2	15
19	4.9	40	13	6.0	3.2	2.8	2.4	0.98	0.90	55	4.9	18
20	4.9	44	13	5.6	2.8	3.4	2.3	0.79	0.86	49	4.5	13
21	4.9	38	12	5.4	2.9	2.4	2.2	0.71	0.70	43	4.2	12
22	4.7	34	12	5.4	2.6	2.1	2.2	0.67	0.64	38	3.9	11
23	4.6	31	11	5.3	2.6	2.0	2.0	0.67	0.59	34	3.6	10
24	4.2	26	11	5.3	2.6	2.0	1.9	0.68	0.56	31	3.3	9.5
25	3.7	23	11	4.9	2.6	2.0	1.9	0.78	0.46	29	3.1	9.0
26	3.5	21	11	4.5	2.4	1.8	2.0	5.5	0.42	26	2.8	8.5
27	3.4	20	10	4.6	2.4	1.8	1.8	4.1	0.40	23	2.5	7.8
28	3.4	19	10	4.5	2.5	1.8	1.7	1.9	0.43	22	2.3	7.0
29	3.4	20	10	4.4	---	1.8	1.6	2.2	0.42	21	2.4	6.7
30	3.5	18	9.9	4.5	---	4.4	1.5	1.7	0.56	20	2.3	6.3
31	3.7	---	9.5	4.5	---	3.8	---	1.7	---	18	2.1	---
TOTAL	158.4	603.6	425.4	199.9	88.7	72.0	72.7	41.79	28.23	10268.5	233.2	630.8
MEAN	5.110	20.12	13.72	6.448	3.168	2.323	2.423	1.348	0.941	331.2	7.523	21.03
MAX	21	86	20	9.2	4.2	4.4	5.0	5.5	1.5	3920	18	128
MIN	3.4	3.7	9.5	4.4	2.4	1.8	1.5	0.67	0.40	2.5	2.1	1.4
AC-FT	314	1200	844	397	176	143	144	83	56	20370	463	1250
CFSM	0.11	0.45	0.30	0.14	0.07	0.05	0.05	0.03	0.02	7.36	0.17	0.47
IN.	0.13	0.50	0.35	0.17	0.07	0.06	0.06	0.03	0.02	8.49	0.19	0.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002, BY WATER YEAR (WY)

MEAN	19.73	13.41	16.54	12.24	14.03	15.99	15.09	25.32	40.34	29.11	20.66	14.58
MAX	169	73.6	241	92.9	136	134	91.1	120	471	331	279	63.1
(WY)	1972	1999	1992	1992	1992	1992	1992	1987	1987	2002	1971	1967
MIN	0.24	0.50	0.40	0.66	0.90	0.65	0.52	0.64	0.15	0.010	0.005	0.000
(WY)	1964	1964	1964	2000	2000	2000	2000	1984	1989	1989	1989	1989

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

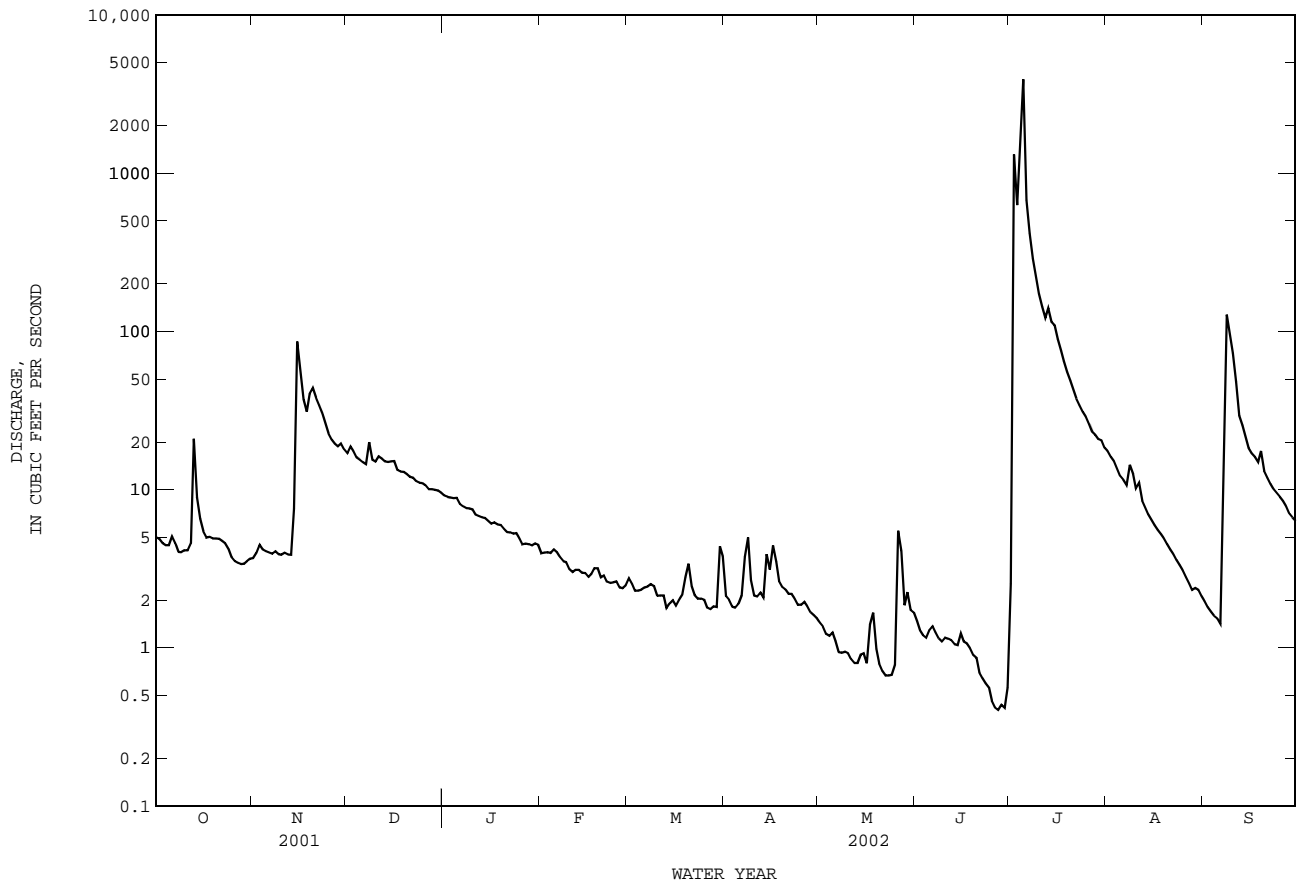
WATER YEARS 1961 - 2002

ANNUAL TOTAL	5787.3	12823.22	
ANNUAL MEAN	15.86	35.13	19.87
HIGHEST ANNUAL MEAN			87.4
LOWEST ANNUAL MEAN			0.97
HIGHEST DAILY MEAN	87	May 5	5000
LOWEST DAILY MEAN	3.4	Oct 27	0.00
ANNUAL SEVEN-DAY MINIMUM	3.5	Oct 25	0.00
MAXIMUM PEAK FLOW		36500	164900
MAXIMUM PEAK STAGE		14.05	167.70
ANNUAL RUNOFF (AC-FT)	11480	25430	14390
ANNUAL RUNOFF (CFSM)	0.35	0.78	0.44
ANNUAL RUNOFF (INCHES)	4.78	10.60	6.00
10 PERCENT EXCEEDS	30	30	40
50 PERCENT EXCEEDS	14	4.1	5.3
90 PERCENT EXCEEDS	4.9	1.1	0.76

i From indirect measurement of peak flow

a From floodmark

08201500 Seco Creek at Miller Ranch near Utopia, TX--Continued



NUECES RIVER BASIN

08202700 Seco Creek at Rowe Ranch near D'Hanis, TX

LOCATION.--Lat 29°22'14", long 99°17'15", 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.--Nov. 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 900.88 ft above NGVD of 1929. Prior to Oct. 1970, published as "at Crook Ranch, near D'Hanis". Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions. All of low flow from Seco Creek enters the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin between Seco Creek at Miller Ranch near Utopia (station 08201500) and this station. No flow at times.

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; Sept. 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.

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00	3320	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2440	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3990	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3860	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	771	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	316	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	136	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17	0.00	0.00
15	0.00	e1.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18	0.00	0.00
16	0.00	e7.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16	0.00	0.00
17	0.00	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13	0.00	0.00
18	0.00	2.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.9	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.9	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	29.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15103.03	0.00	0.00
MEAN	0.000	0.990	0.000	0.000	0.000	0.000	0.000	0.000	0.000	487.2	0.000	0.000
MAX	0.00	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3990	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29960	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002, BY WATER YEAR (WY)

	MEAN	9.693	0.025	4.133	0.600	0.909	1.618	3.144	10.66	26.65	18.94	27.04	4.010
MAX	183	0.99	117	24.7	33.2	27.0	74.6	277	411	487	862	58.5	
(WY)	1972	2002	1992	1968	1992	1992	1981	1987	1997	2002	1971	1980	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1962	1961	1961	1961	1961	1961	1961	1961	1962	1962	1961	1961	

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1961 - 2002

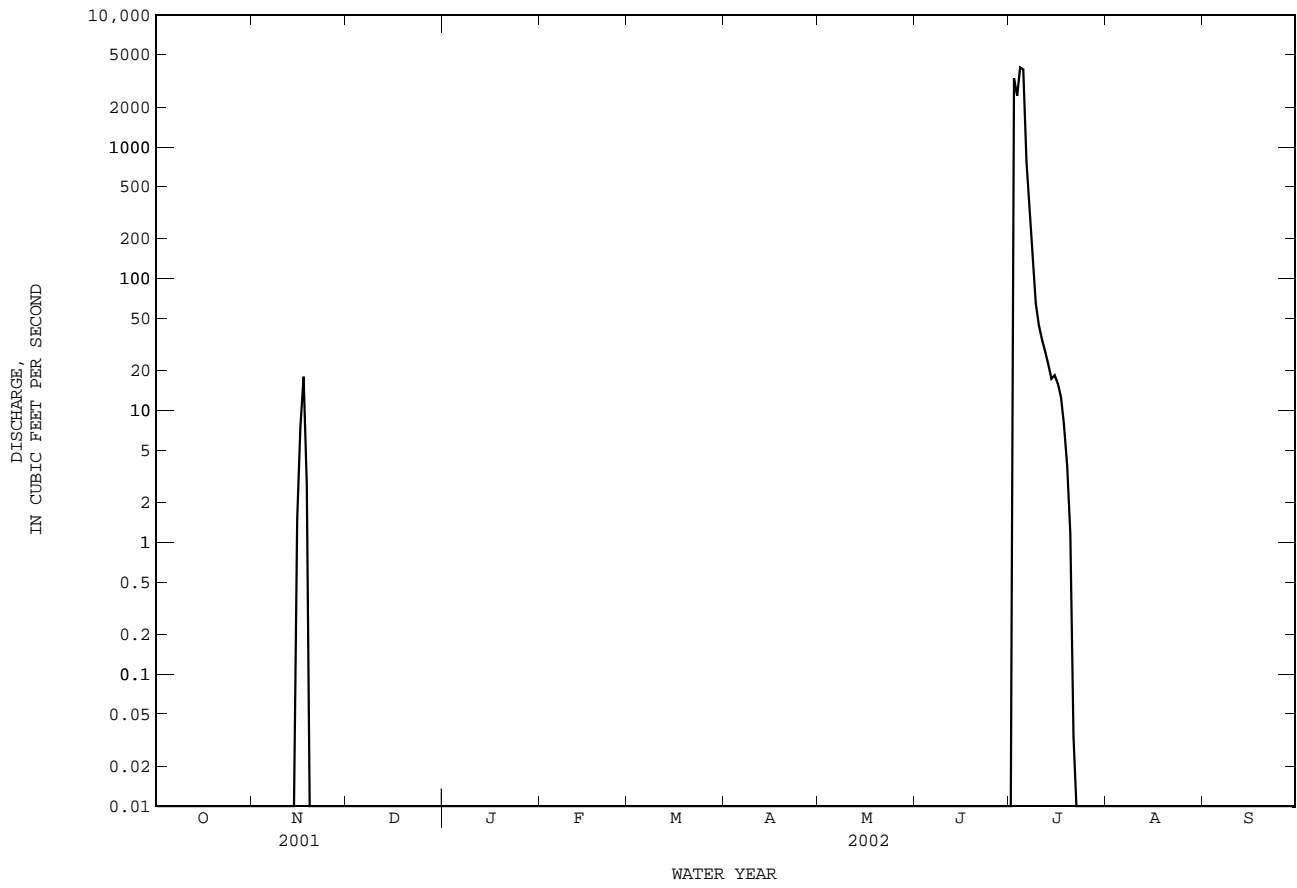
ANNUAL TOTAL	29.70	15132.73	
ANNUAL MEAN	0.081	41.46	9.126
HIGHEST ANNUAL MEAN			73.3
LOWEST ANNUAL MEAN			0.000
HIGHEST DAILY MEAN	18	Nov 17	3990 Jul 4
LOWEST DAILY MEAN	0.00	Jan 1	0.00 Oct 1
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00 Oct 1
MAXIMUM PEAK FLOW			15300 Jul 5
MAXIMUM PEAK STAGE			19.13 Jul 5
ANNUAL RUNOFF (AC-FT)	59		30020
10 PERCENT EXCEEDS	0.00		0.00
50 PERCENT EXCEEDS	0.00		0.00
90 PERCENT EXCEEDS	0.00		0.00

e Estimated

i From indirect measurement of peak flow

a From floodmark

08202700 Seco Creek at Rowe Ranch near D'Hanis, TX--Continued



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.

PERIOD OF RECORD.--Aug. 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 NGVD of 1929. 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. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. Part of the 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. 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. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, that of July 4, 1932, from information by local resident.

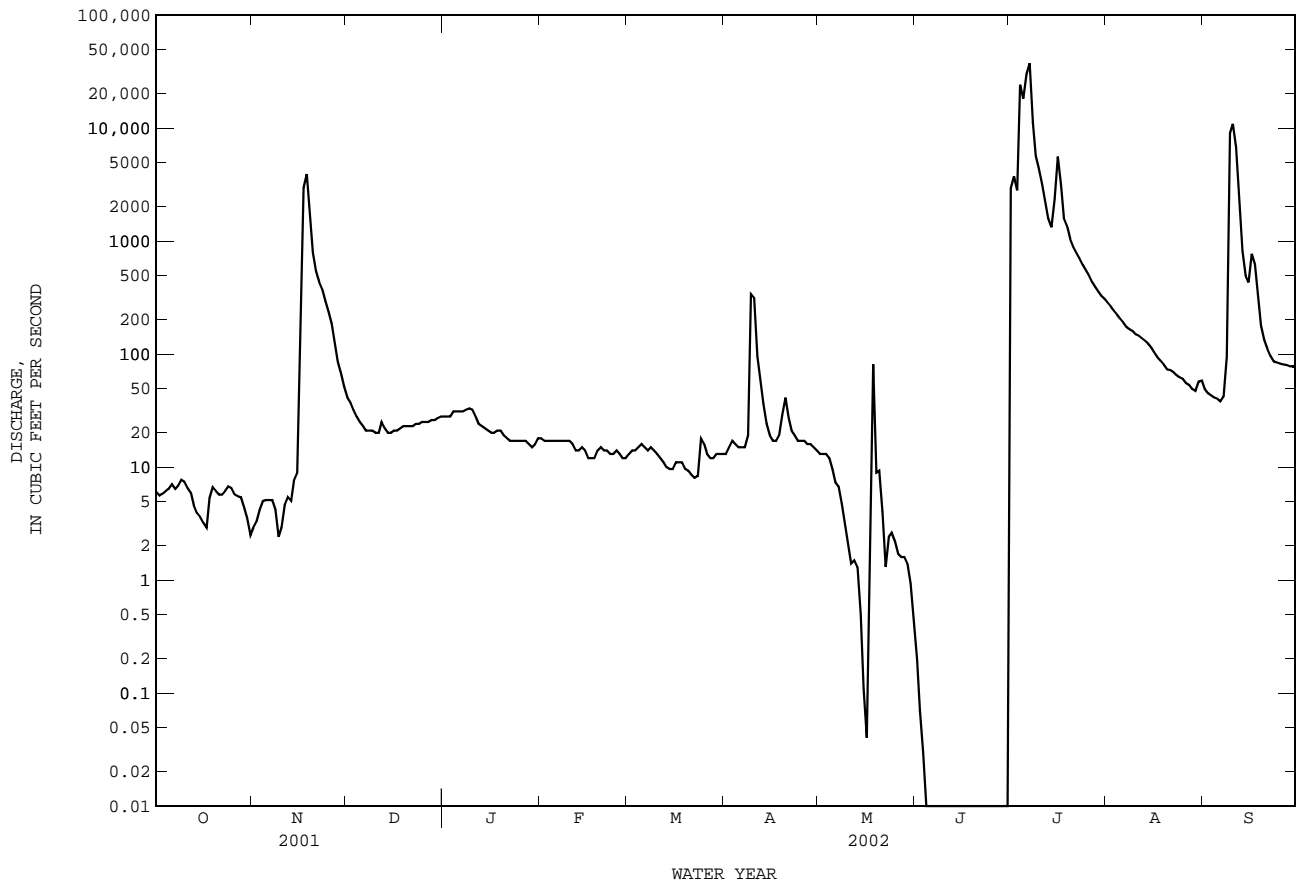
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	2.9	41	28	18	13	13	13	0.20	2930	284	49
2	5.6	3.3	37	28	17	14	15	13	0.07	3740	262	45
3	5.8	4.2	32	28	17	14	17	13	0.03	2790	239	43
4	6.1	5.0	28	31	17	15	16	12	0.01	24100	221	41
5	6.4	5.1	25	31	17	16	15	9.5	0.01	18200	205	40
6	7.0	5.1	23	31	17	15	15	7.3	0.0	29900	189	38
7	6.4	5.1	21	31	17	14	15	6.7	0.0	37200	173	42
8	6.9	4.2	21	32	17	15	19	4.7	0.0	11200	165	95
9	7.7	2.4	21	33	17	14	339	3.0	0.0	5670	159	9000
10	7.4	2.9	20	32	17	13	312	2.0	0.0	4320	149	10900
11	6.5	4.6	20	28	16	12	96	1.4	0.0	3170	145	6770
12	5.9	5.4	25	24	14	11	59	1.5	0.0	2160	137	2260
13	4.6	5.0	22	23	14	10	36	1.3	0.0	1580	130	818
14	3.9	7.6	20	22	15	9.6	24	0.50	0.0	1320	123	493
15	3.6	8.8	20	21	14	9.6	19	0.11	0.0	2350	113	429
16	3.2	102	21	20	12	11	17	0.04	0.0	5600	102	768
17	2.9	2960	21	20	12	11	17	5.4	0.0	3120	92	619
18	5.3	3910	22	21	12	11	19	81	0.0	1600	86	311
19	6.6	1710	23	21	14	9.6	29	8.9	0.0	1360	80	177
20	6.1	787	23	19	15	9.2	41	9.2	0.0	1040	73	133
21	5.7	536	23	18	14	8.5	27	4.0	0.0	881	72	111
22	5.7	433	23	17	14	8.0	21	1.3	0.0	787	69	96
23	6.1	377	24	17	13	8.3	19	2.4	0.0	702	65	86
24	6.7	294	24	17	13	18	17	2.6	0.0	618	62	84
25	6.5	236	25	17	14	16	17	2.2	0.0	553	60	82
26	5.7	184	25	17	13	13	17	1.7	0.0	493	55	81
27	5.5	124	25	17	12	12	16	1.6	0.0	435	53	80
28	5.4	85	26	16	12	12	16	1.6	0.0	394	49	78
29	4.4	67	26	15	---	13	15	1.4	0.0	357	47	78
30	3.5	51	27	16	---	13	14	0.93	0.0	325	57	78
31	2.5	---	28	18	---	13	---	0.45	---	308	58	---
TOTAL	171.6	11927.6	762	709	414	381.8	1312	213.73	0.32	169203	3774	33925
MEAN	5.535	397.6	24.58	22.87	14.79	12.32	43.73	6.895	0.011	5458	121.7	1131
MAX	7.7	3910	41	33	18	18	339	81	0.20	37200	284	10900
MIN	2.5	2.4	20	15	12	8.0	13	0.04	0.00	308	47	38
AC-FT	340	23660	1510	1410	821	757	2600	424	0.6	335600	7490	67290

MEAN	165.9	57.48	45.54	50.21	58.70	48.77	111.7	190.5	363.7	305.1	142.9	199.5
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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1918	1916	1916	1916	1916	1916	1917	1917	1918	1918	1917	1922

ANNUAL TOTAL	16945.36		222794.05						
ANNUAL MEAN	46.43		610.4				145.2		
HIGHEST ANNUAL MEAN							1087		1935
LOWEST ANNUAL MEAN							1.76		1952
HIGHEST DAILY MEAN	3910	Nov 18	37200	Jul 7		135000	Jul 4		1932
LOWEST DAILY MEAN	0.00	Jun 27	0.00	Jun 6		0.00	Aug 1		1915
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 27	0.00	Jun 6		0.00	Aug 1		1915
MAXIMUM PEAK FLOW			44300	Jul 7		i230000	Jul 4		1932
MAXIMUM PEAK STAGE			a20.06	Jul 7		a29.45	Jul 4		1932
ANNUAL RUNOFF (AC-FT)	33610		441900			105200			
10 PERCENT EXCEEDS	29		543			150			
50 PERCENT EXCEEDS	16		17			6.0			
90 PERCENT EXCEEDS	0.00		1.3			0.00			

- i From indirect measurement of peak flow
- a From floodmark

08205500 Frio River near Derby, TX--Continued



NUECES RIVER BASIN

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.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 216.04 ft above NGVD of 1929. July 14, 1978, to Sept. 13, 1994, at site 80 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation. 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. Considerable flow into various permeable formations also occurs downstream from the Balcones Fault Zone. There are many small diversions above station for irrigation. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1932 reached a stage of 38.44 ft, from information by local resident.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.15	0.07	67	22	17	10	11	9.3	0.23	4150	329	57
2	0.12	0.03	401	22	17	9.6	10	8.7	0.12	7480	300	57
3	0.10	0.16	128	22	16	9.7	9.7	8.0	0.10	9300	280	60
4	0.09	1.4	52	23	16	10	9.9	7.4	0.09	18100	262	56
5	0.07	1.3	38	23	16	10	10	6.6	0.05	20400	245	53
6	2.7	1.0	33	23	17	11	10	5.8	0.17	17800	228	51
7	3.2	0.76	29	23	17	11	10	5.3	0.09	18500	213	47
8	2.6	0.59	27	23	17	11	11	4.7	0.02	22900	201	65
9	2.4	0.43	27	24	16	11	11	5.0	0.00	29200	192	6120
10	2.1	0.29	25	25	16	10	11	4.8	0.00	31500	182	29200
11	1.9	0.19	25	25	16	11	11	3.8	0.02	21100	175	28500
12	1.8	0.15	23	25	15	11	130	2.8	0.11	10300	168	22800
13	2.2	0.13	23	25	15	11	220	2.2	0.04	4690	160	18500
14	2.7	10	22	26	15	11	73	1.8	0.00	3220	144	13100
15	2.5	930	21	25	15	10	39	1.3	0.14	6400	136	8460
16	2.6	1530	22	24	14	9.9	30	0.93	0.18	5020	135	5630
17	3.2	936	23	23	13	9.2	23	0.84	0.18	5710	131	2760
18	3.1	228	21	22	13	8.7	18	0.70	0.18	8070	123	1670
19	2.8	164	20	22	13	8.4	15	0.37	0.04	8570	105	1100
20	2.4	478	20	21	13	7.8	13	0.22	0.00	4560	97	914
21	1.9	898	20	20	12	7.4	11	3.3	0.00	2520	89	671
22	1.5	2070	20	20	12	8.0	11	25	0.01	1780	85	389
23	1.1	1820	20	20	12	8.4	14	12	0.01	1360	80	251
24	0.93	1020	21	20	13	8.8	21	6.2	0.00	1070	76	206
25	0.68	518	21	19	13	7.7	17	4.7	0.00	875	72	184
26	0.38	308	21	18	13	6.9	13	3.9	0.00	741	69	164
27	0.22	218	21	18	12	6.6	11	2.7	0.00	637	65	148
28	0.14	187	21	18	11	6.6	10	1.7	0.01	545	63	142
29	0.13	123	21	17	---	7.8	10	1.1	0.34	475	61	136
30	0.12	91	21	17	---	13	9.7	0.67	0.25	415	65	131
31	0.07	---	22	18	---	12	---	0.42	---	365	61	---
TOTAL	45.90	11535.50	1276	673	405	294.5	803.3	142.25	2.38	267753	4592	141622
MEAN	1.481	384.5	41.16	21.71	14.46	9.500	26.78	4.589	0.079	8637	148.1	4721
MAX	3.2	2070	401	26	17	13	220	25	0.34	31500	329	29200
MIN	0.07	0.03	20	17	11	6.6	9.7	0.22	0.00	365	61	47
AC-FT	91	22880	2530	1330	803	584	1590	282	4.7	531100	9110	280900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2002, BY WATER YEAR (WY)

	MEAN	183.7	91.50	100.8	99.84	113.7	99.29	114.5	173.9	720.5	530.1	114.7	281.3
MAX	861	439	1314	877	1745	1188	935	1171	8992	8637	842	4721	
(WY)	1986	2001	1992	1992	1992	1992	1992	1980	1987	2002	1998	2002	
MIN	0.12	0.24	0.27	0.45	0.32	2.91	0.55	0.46	0.025	0.000	0.000	0.000	
(WY)	1991	1991	1991	1991	1990	1984	1984	1998	1998	1996	2000	2000	

SUMMARY STATISTICS

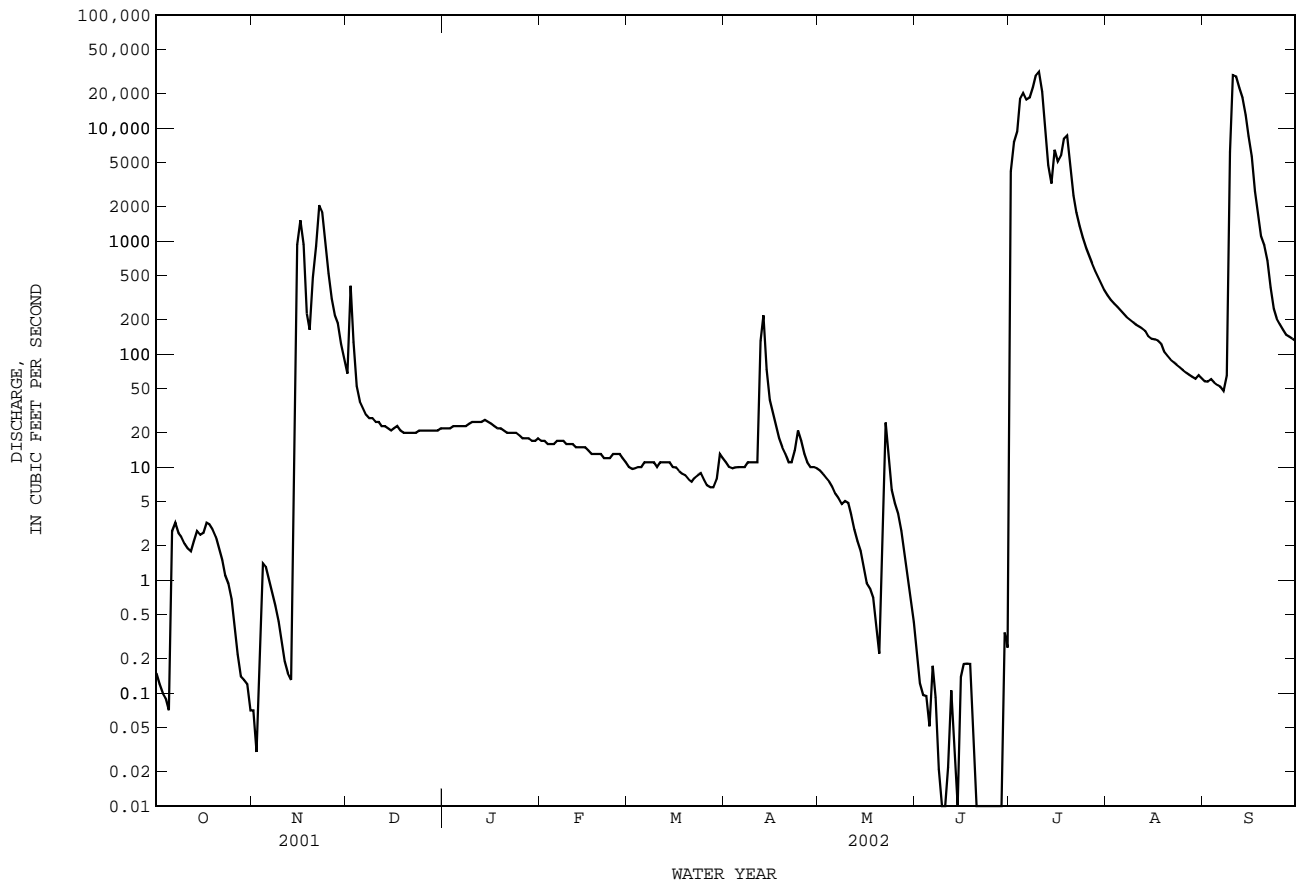
FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1978 - 2002

ANNUAL TOTAL	18978.47	429144.83	
ANNUAL MEAN	52.00	1176	217.2
HIGHEST ANNUAL MEAN			1176
LOWEST ANNUAL MEAN			7.06
HIGHEST DAILY MEAN	2070	Nov 22	31500
LOWEST DAILY MEAN	0.00	Jun 26	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 26	0.00
MAXIMUM PEAK FLOW			33000
MAXIMUM PEAK STAGE			30.29
ANNUAL RUNOFF (AC-FT)	37640		851200
10 PERCENT EXCEEDS	37		1200
50 PERCENT EXCEEDS	19		17
90 PERCENT EXCEEDS	0.01		0.16
			0.19

08206600 Frio River at Tilden, TX--Continued



NUECES RIVER BASIN

08206600 Frio River at Tilden, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Dec. 1997 to current year.

BIOCHEMICAL DATA: Dec. 1997 to current year.

PESTICIDE DATA: Dec. 1997 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	
DEC 18...	1355	21	1210	8.1	13.5	9.6	93	350	120	104	21.6	130	3	
MAR 13...	1345	11	1690	8.2	17.5	3.8	40	430	260	115	34.9	224	5	
AUG 19...	1455	104	1560	8.1	29.5	7.5	100	470	260	132	33.6	147	3	
Date	Time	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00932)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	
DEC 18...	44	3.80	3	270	226	146	163	.2	12.1	725	1.81	.009	1.82	
MAR 13...	53	3.27	2	209	175	266	315	.3	1.82	1070	1.27	.009	1.28	
AUG 19...	40	3.51	3	250	210	215	255	.2	15.6	942	3.08	.009	3.09	
Date		NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
DEC 18...	E.02	.32	<.06	E.01	2	.09	2	84	<.06	<.04	<.8	.39	1.8	
MAR 13...	<.04	.25	<.06	<.02	<1	.42	E2	81	<.06	<.04	<.8	.35	1.4	
AUG 19...	<.04	.24	<.06	<.02	<1	.20	2	98	<.06	<.04	<.8	.36	1.9	
Date		IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
DEC 18...	<10	<.08	24	3.7	<.01	1.3	1.98	<2	<1	653	E7	3	1.35	
MAR 13...	<10	.08	46	3.5	<.01	1.9	.34	2	<1	1050	E5	2	1.55	
AUG 19...	<10	<.08	27	2.8	<.01	1.3	1.08	2	<1	915	E7	2	1.65	
Date	2,4,5-T DIS-SOLVED (UG/L) (39742)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	SILVEX, DIS-SOLVED (UG/L) (39762)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	DNOC WAT,FLT GF 0.7U REC (UG/L) (49299)	ACETO-CHLOR, WATER, FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC (UG/L) (46342)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	
DEC 18...	<.07	<.16	<.25	<.002	<.03	<.11	<.25	<.004	<.05	<.002	<.21	<.20	<.27	
MAR 13...	<.07	<.16	<.25	<.006	<.03	<.11	<.25	<.006	<.05	<.004	<.21	<.20	<.27	
AUG 19...	<.07	<.16	<.25	<.006	<.03	<.11	<.25	<.006	<.05	<.004	<.21	<.20	<.27	

NUECES RIVER BASIN

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08206600 Frio River at Tilden, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENTA- ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	BRO- MACIL, WATER, DISS, REC (UG/L) (04029)	BRO- MOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLORO- THALO- NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)
DEC 18...	<.005	<.007	<.050	<.010	<.05	<.09	<.07	<.002	<.080	<.041	<.15	<.020	<.25
MAR 13...	<.005	E.006n	<.050	<.010	<.05	<.09	<.07	<.002	<.080	<.041	<.15	<.020	<.25
AUG 19...	<.005	E.005n	<.050	<.010	<.05	<.09	<.07	<.002	<.080	<.041	<.15	<.020	<.25
Date	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CLOPYR- ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DACTHAL MONO- ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA URON, WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED REC (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLO- BENIL, WATER, FLTRD, GF 0.7U REC (UG/L) (49303)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI- ELDRIN DIS- SOLVED REC (UG/L) (39381)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)
DEC 18...	<.005	<.006	<.42	<.018	<.07	<.003	E.004	.024	<.11	<.09	<.12	<.005	<.09
MAR 13...	<.005	<.006	<.42	<.018	<.07	<.003	E.005	<.005	<.11	<.09	<.12	<.005	<.09
AUG 19...	<.005	<.006	<.42	<.018	<.07	<.003	E.006	<.005	<.11	<.09	<.12	<.005	<.09
Date	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN- URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUO- METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED REC (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED REC (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)
DEC 18...	<.02	<.12	<.002	<.009	<.005	<.07	<.06	<.003	<.004	<.06	<.035	<.027	<.20
MAR 13...	<.02	<.12	<.002	<.009	<.005	<.14	<.06	<.003	<.004	<.06	<.035	<.027	<.20
AUG 19...	<.02	<.12	<.002	<.009	<.005	<.07	<.06	<.003	<.004	<.06	<.035	<.027	<.20
Date	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METHIO- CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH- OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB- URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY- ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED REC (UG/L) (39542)
DEC 18...	<.26	<.07	<.22	.031	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003	<.007
MAR 13...	<.26	<.07	<.47	E.009n	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003	<.010
AUG 19...	<.26	<.07	<.22	<.013	<.006	<.002	<.007	<.07	<.04	<.28	<.16	<.003	<.010
Date	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC- LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO- PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO- POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)
DEC 18...	<.006	<.002	<.010	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.12	<.004	<.011
MAR 13...	<.006	<.004	<.022	<.011	<.09	E.01n	<.010	<.011	<.02	<.22	<.12	<.004	<.005
AUG 19...	<.006	<.004	<.022	<.011	<.09	Mn	<.010	<.011	<.02	<.22	<.12	<.004	<.005

NUECES RIVER BASIN

08206600 Frio River at Tilden, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
DEC							
18...	<.02	<.034	<.02	<.005	<.002	<.07	<.009
MAR							
13...	<.02	<.034	<.02	<.005	<.002	<.07	<.009
AUG							
19...	<.02	<.034	<.02	<.005	<.002	<.07	<.009

Remark codes used in this report:

< -- Less than
 E -- Estimated value
 M -- Presence verified, not quantified

Value qualifier codes used in this report:

n -- Below the NDV

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NUECES RIVER BASIN

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.--Jan. 1964 to current year.

Water-quality records.--Chemical data: July 1978 to Sept. 1984. Biochemical data: July 1978 to Sept. 1984.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 242.95 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There are five diversions above station, but amounts are unknown. At times, 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). No flow at times.

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.

DISCHARGE FROM THE DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5540	8.8	0.00
2	0.00	0.00	79	0.00	0.00	0.00	0.00	0.00	0.00	11800	7.6	0.00
3	0.00	0.00	3.1	0.00	0.00	0.00	0.00	0.00	0.00	4830	6.5	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6150	5.5	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7110	4.8	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8420	4.3	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4430	3.6	0.01
8	0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.00	0.00	2680	3.3	190
9	0.00	0.00	0.25	0.00	0.00	0.00	107	0.00	0.00	723	12	7950
10	0.00	0.00	0.00	0.00	0.00	0.00	555	0.00	0.00	176	11	22400
11	0.00	0.00	0.74	0.00	0.00	0.00	177	0.00	0.00	141	3.4	13800
12	0.00	0.00	2.6	0.00	0.00	0.00	63	0.00	0.00	80	2.2	4500
13	0.00	0.00	0.13	0.00	0.00	0.00	31	0.00	0.00	60	1.7	1080
14	0.00	443	0.00	0.00	0.00	0.00	17	0.00	0.00	153	1.1	223
15	0.00	1000	0.00	0.00	0.00	0.00	9.5	0.00	0.00	1110	0.77	322
16	0.00	380	0.00	0.00	0.00	0.00	5.0	0.00	0.00	423	0.42	352
17	0.00	29	0.00	0.00	0.00	0.00	2.5	0.00	0.00	1520	0.16	672
18	0.00	6.4	0.00	0.00	0.00	0.00	0.86	17	0.00	582	0.31	246
19	0.00	2.3	0.00	0.00	0.00	0.00	0.08	143	0.00	231	0.32	157
20	0.00	11	0.00	0.00	0.00	0.00	0.02	62	0.00	140	0.13	126
21	0.00	0.03	0.00	0.00	0.00	0.00	0.0	15	0.00	96	0.04	107
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.3	0.00	63	0.03	89
23	0.00	0.00	0.00	0.00	0.00	0.00	0.15	1.3	0.00	44	0.03	78
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	34	0.02	69
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	28	0.02	62
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22	0.00	55
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19	0.00	50
28	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16	0.00	44
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	41	13	14	39
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	186	11	52	36
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	9.7	0.31	---
TOTAL	0.00	1871.73	86.63	0.00	0.00	0.00	968.11	243.65	227.00	56654.7	144.36	52647.01
MEAN	0.000	62.39	2.795	0.000	0.000	0.000	32.27	7.860	7.567	1828	4.657	1755
MAX	0.00	1000	79	0.00	0.00	0.00	555	143	186	11800	52	22400
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.7	0.00	0.00
AC-FT	0.00	3710	172	0.00	0.00	0.00	1920	483	450	112400	286	104400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2002, BY WATER YEAR (WY)

	MEAN	65.10	22.57	15.51	25.04	22.98	9.337	54.10	112.8	94.85	81.96	49.99	126.2
MAX	486	286	226	641	352	78.0	1065	900	690	1828	741	1755	
(WY)	1982	1993	1987	1968	1992	1992	1977	1980	1987	2002	1980	2002	
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
(WY)	1980	1995	1989	1989	1995	1996	1996	1971	1967	1996	1991	1999	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

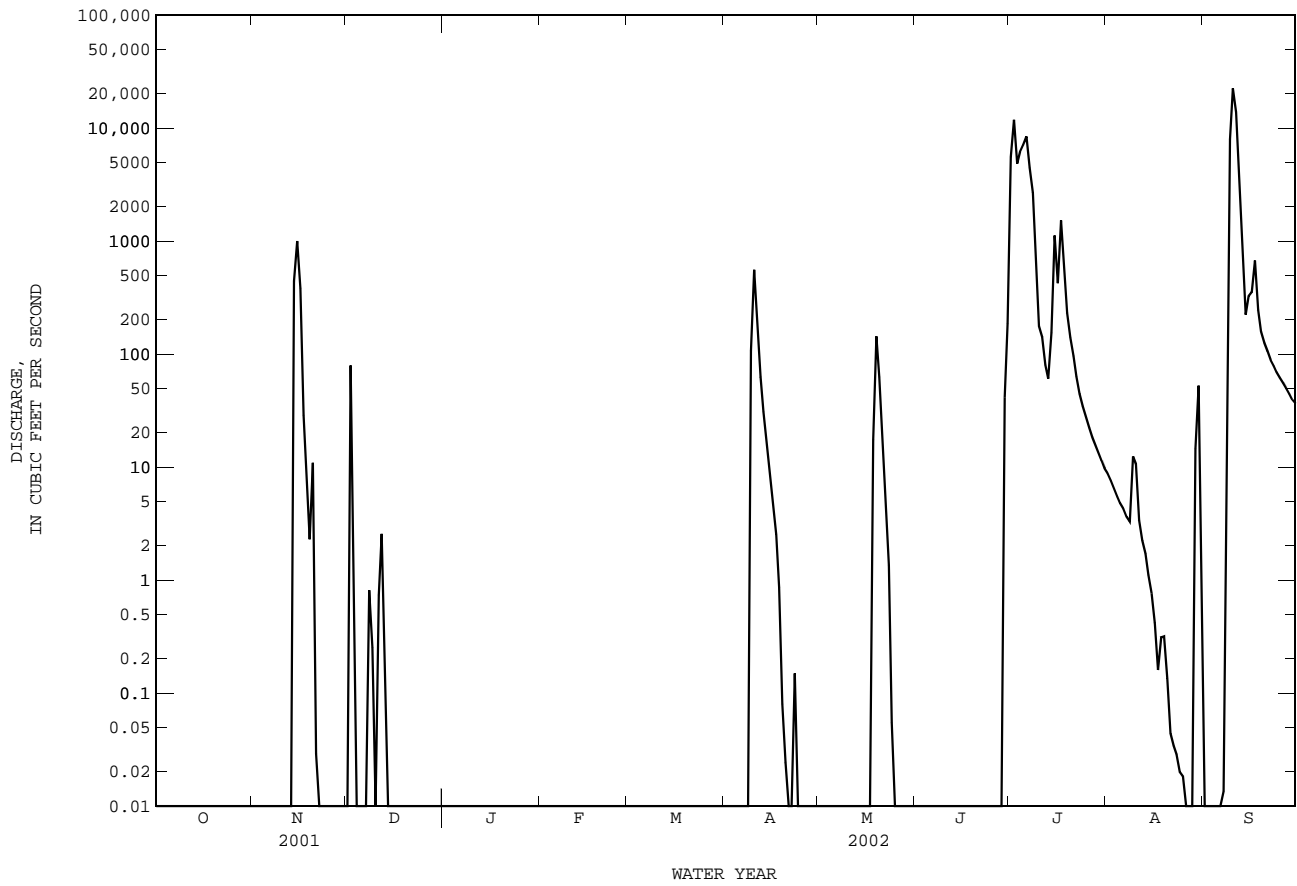
FOR 2002 WATER YEAR

WATER YEARS 1964 - 2002

ANNUAL TOTAL	5091.93	112843.19	
ANNUAL MEAN	13.95	309.2	57.82
HIGHEST ANNUAL MEAN			309
LOWEST ANNUAL MEAN			2.43
HIGHEST DAILY MEAN	1000	Nov 15	22400
LOWEST DAILY MEAN	0.00	Jan 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00
MAXIMUM PEAK FLOW			c29500
MAXIMUM PEAK STAGE			31.64
ANNUAL RUNOFF (AC-FT)	10100		41890
10 PERCENT EXCEEDS	8.1		36
50 PERCENT EXCEEDS	0.00		1.7
90 PERCENT EXCEEDS	0.00		0.00

c From rating curve extended above current-meter discharge measurement of 22,800 ft³/s.

08206700 San Miguel Creek near Tilden, TX--Continued



NUECES RIVER BASIN

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.

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Oct. 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records good. 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. The dam is owned by the City of Corpus Christi. Conservation pool storage is 695,271 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	241.1
Top of spillway gates.....	222.5
Crest of spillway.....	199.5
Lowest gated outlet (invert).....	136.3

COOPERATION.--Capacity table computed June 1, 1983, provided by the City of Corpus Christi. Prior to Oct. 1, 1999, elevation and reservoir contents record provided by the City of Corpus Christi.

EXTREMES 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 FOR CURRENT YEAR.--Maximum contents, 771,000 acre-ft, Sept. 12, elevation, 223.48 ft; minimum contents, 216,000 acre-ft, Nov. 14, elevation, 195.63 ft.

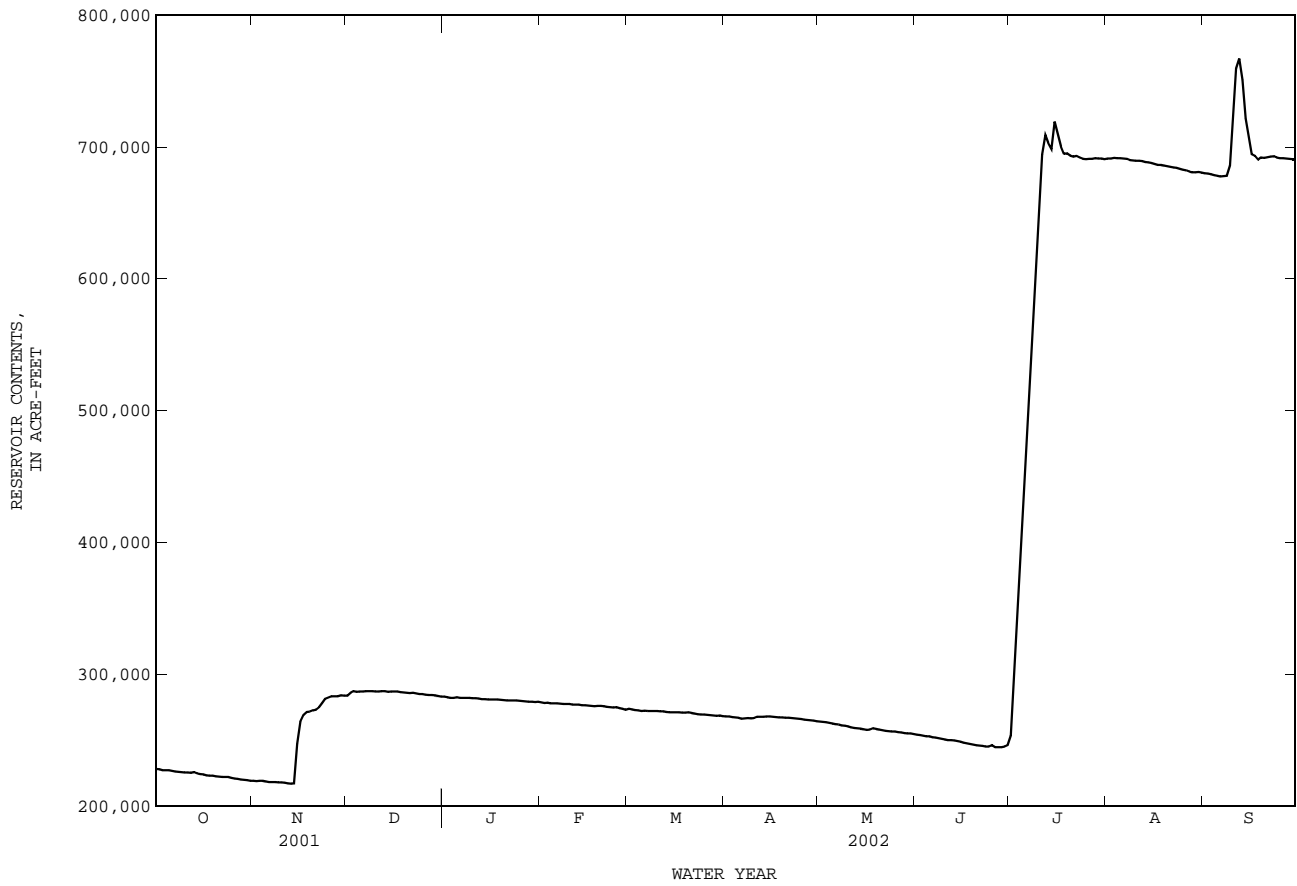
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	228000	219000	284000	283000	279000	274000	268000	264000	254000	253000	691000	680000
2	228000	219000	286000	283000	278000	273000	268000	264000	254000	286000	691000	680000
3	227000	219000	287000	282000	278000	273000	267000	264000	253000	323000	692000	679000
4	227000	219000	287000	282000	278000	273000	267000	263000	253000	357000	691000	678000
5	227000	219000	287000	282000	278000	272000	267000	263000	253000	406000	691000	678000
6	227000	218000	287000	282000	278000	272000	266000	262000	252000	462000	691000	677000
7	226000	218000	287000	282000	278000	272000	266000	262000	252000	515000	691000	678000
8	226000	218000	287000	282000	277000	272000	267000	261000	252000	561000	690000	678000
9	226000	218000	287000	282000	277000	272000	266000	261000	251000	609000	690000	686000
10	225000	218000	287000	282000	277000	272000	267000	260000	250000	656000	690000	723000
11	225000	218000	287000	282000	277000	272000	268000	260000	250000	694000	690000	759000
12	225000	217000	287000	282000	277000	272000	268000	259000	250000	709000	689000	767000
13	226000	217000	287000	281000	277000	271000	268000	259000	250000	703000	689000	751000
14	225000	217000	287000	281000	276000	271000	268000	259000	249000	698000	688000	721000
15	224000	247000	287000	281000	276000	271000	268000	258000	249000	719000	688000	708000
16	224000	264000	287000	281000	276000	271000	268000	258000	248000	710000	687000	694000
17	223000	269000	287000	281000	276000	271000	267000	258000	248000	700000	686000	693000
18	223000	271000	286000	281000	276000	271000	267000	259000	247000	695000	686000	690000
19	223000	272000	286000	281000	276000	271000	267000	258000	246000	695000	686000	692000
20	223000	272000	286000	280000	276000	271000	267000	258000	246000	693000	685000	692000
21	222000	273000	286000	280000	276000	271000	267000	258000	246000	693000	685000	692000
22	222000	275000	286000	280000	275000	270000	267000	257000	246000	693000	684000	693000
23	222000	278000	285000	280000	275000	270000	267000	257000	245000	692000	684000	693000
24	222000	281000	285000	280000	275000	269000	266000	257000	245000	691000	683000	692000
25	221000	282000	285000	280000	275000	269000	266000	256000	246000	691000	683000	691000
26	221000	283000	284000	280000	274000	269000	266000	256000	244000	691000	682000	691000
27	220000	283000	284000	279000	274000	269000	265000	256000	244000	691000	681000	691000
28	220000	283000	284000	279000	273000	269000	265000	255000	245000	691000	681000	691000
29	220000	284000	284000	279000	---	268000	265000	255000	245000	691000	681000	691000
30	220000	284000	284000	279000	---	269000	264000	255000	246000	691000	681000	691000
31	219000	---	283000	279000	---	268000	---	255000	---	691000	680000	---
MEAN	224000	248000	286000	281000	276000	271000	267000	259000	249000	615000	687000	697000
MAX	228000	284000	287000	283000	279000	274000	268000	264000	254000	719000	692000	767000
MIN	219000	217000	283000	279000	273000	268000	264000	255000	244000	253000	680000	677000
(+)	195.86	200.43	200.38	200.13	199.74	199.40	199.12	198.45	197.84	220.47	220.08	220.47
(@)	-9000	+65000	-1000	-4000	-6000	-5000	-4000	-9000	-9000	+445000	-11000	+11000
CAL YR 2001	MAX 287000	MIN 219000	(@) +14000									
WTR YR 2002	MAX 767000	MIN 217000	(@) +463000									

(+) Elevation, in feet, at end of month.

(@) Change in contents, in acre-feet.

08206900 Choke Canyon Reservoir near Three Rivers, TX--Continued



NUECES RIVER BASIN

08206900 Choke Canyon Reservoir near Three Rivers, TX

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Mar. 1999 to current year.

PESTICIDE DATA: Mar. 1999 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

08206890 -- Choke Canyon Res Site AC

Date	Time	RESER- VOIR STORAGE (AC-FT) (00054)	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
MAR													
05...	0750	272000	1.00	784	8.5	13.0	.55	10.0	94	180	51	50.3	14.1
MAR													
05-05	0750	--	--	--	--	--	--	--	--	--	--	--	--
05...	0752	--	10.0	783	8.5	13.0	--	9.8	92	--	--	--	--
05...	0754	--	20.0	783	8.5	12.5	--	9.8	91	--	--	--	--
05...	0756	--	30.0	783	8.5	12.5	--	9.4	87	--	--	--	--
05...	0758	--	40.0	784	8.5	12.5	--	9.4	87	--	--	--	--
05...	0800	--	50.0	784	8.5	12.5	--	9.4	87	--	--	--	--
05...	0802	--	60.0	784	8.4	12.5	--	9.2	85	--	--	--	--
05...	0804	--	67.0	785	8.4	12.5	--	8.9	82	190	53	51.3	14.3
JUN													
18...	0746	247000	1.00	854	8.0	27.5	.85	6.6	85	200	50	54.2	15.1
JUN													
18-18	0746	--	--	--	--	--	--	--	--	--	--	--	--
18...	0748	--	10.0	855	8.0	27.5	--	6.5	83	--	--	--	--
18...	0750	--	20.0	856	8.0	27.5	--	6.4	82	--	--	--	--
18...	0752	--	30.0	856	7.9	27.0	--	3.5	45	--	--	--	--
18...	0754	--	40.0	858	7.6	26.0	--	1.8	22	--	--	--	--
18...	0756	--	50.0	857	7.5	26.0	--	.0	0	--	--	--	--
18...	0758	--	63.0	862	7.4	24.5	--	.0	0	200	35	56.2	15.2
18...	0758	--	63.0	--	--	--	--	--	--	--	--	--	--
AUG													
01...	0810	691000	1.00	385	8.2	29.0	.94	7.1	93	120	13	39.8	6.00
AUG													
01-01	0810	--	--	--	--	--	--	--	--	--	--	--	--
01...	0812	--	10.0	398	7.9	28.5	--	5.9	77	--	--	--	--
01...	0814	--	20.0	403	7.8	28.0	--	5.2	67	--	--	--	--
01...	0816	--	30.0	409	7.7	28.0	--	4.6	59	--	--	--	--
01...	0818	--	40.0	421	7.5	28.0	--	2.8	36	--	--	--	--
01...	0820	--	50.0	608	7.5	27.0	--	.0	0	--	--	--	--
01...	0822	--	60.0	658	7.5	27.0	--	.0	0	--	--	--	--
01...	0824	--	70.0	673	7.5	27.0	--	.0	0	--	--	--	--
01...	0826	--	84.0	775	7.3	26.0	--	.0	0	180	25	50.8	13.4

08206900 Choke Canyon Reservoir near Three Rivers, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

08206890 -- Choke Canyon Res Site AC

Date	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA- LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L) (00556)
MAR 05...	84.1	3	48	10.6	<1	162	134	67.0	122	.2	16.8	445	--
MAR 05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	85.9	3	48	10.7	1	162	135	66.8	120	.2	17.2	448	--
JUN 18...	91.0	3	48	11.7	3	175	148	71.5	127	.2	16.7	476	<7
JUN 18-18	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	<7
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	89.7	3	47	11.2	<1	205	169	66.8	125	.2	20.2	487	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 01...	26.7	1	30	6.59	1	134	111	22.1	35.0	.1	9.95	213	--
AUG 01-01	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	78.9	3	47	11.2	<1	192	158	53.7	109	.2	19.5	432	--

08206890 -- Choke Canyon Res Site AC

Date	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR 05...	<1	.57	7	97	<.06	<.04	<.8	.17	2.1	<10	.19	21	.4
MAR 05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	<1	.55	7	97	<.06	<.04	<.8	.17	2.6	<10	.30	22	5.1
JUN 18...	<1	.53	7	104	<.06	<.04	<.8	.15	2.0	<10	.09	21	.5
JUN 18-18	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	<1	.31	8	109	<.06	<.04	<.8	.34	.7	20	E.05	19	864
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 01...	<1	.24	3	46	<.06	<.04	<.8	.14	1.6	<10	<.08	6	.3
AUG 01-01	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	1	.21	8	105	<.06	<.04	<.8	.69	.7	67	<.08	17	845

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

08206890 -- Choke Canyon Res Site AC

Date	MERCURY	MOLYB-	NICKEL,	SELE-	SILVER,	STRON-	VANA-	ZINC,	URANIUM	2,4,5-T	2,4-D,	2,4-DB	2,6-DI-
	DIS-	DENUM,	DIS-	NIUM,	DIS-	DIUM,	DIS-	NATURAL					
	SOLVED	DIS-	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED	SOLVED					
	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L					
AS HG)	AS MO)	AS NI)	AS SE)	AS AG)	AS SR)	AS V)	AS ZN)	AS U)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
(71890)	(01060)	(01065)	(01145)	(01075)	(01080)	(01085)	(01090)	(22703)	(39742)	(39732)	(38746)	(82660)	
MAR													
05...	<.01	2.1	.77	<2	<1	376	E7	2	.96	--	--	--	--
MAR													
05-05	--	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	<.01	2.1	.67	<2	<1	383	E7	2	.95	--	--	--	--
JUN													
18...	<.01	2.3	.13	<2	<1	408	E6	3	1.06	--	--	--	--
JUN													
18-18	--	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	<.01	2.6	.32	<2	--u	416	<8	<1	.93	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
01...	<.01	1.0	1.31	<2	<1	184	<8	2	.33	--	--	--	--
AUG													
01-01	--	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	<.01	1.2	1.36	<2	--u	375	E5	<1	.64	--	--	--	--

08206890 -- Choke Canyon Res Site AC

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

[illegible][illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

08206890 -- Choke Canyon Res Site AC

[illegible]

08206890 -- Choke Canyon Res Site AC

[illegible]

08206890 -- Choke Canyon Res Site AC

08206890 -- Choke Canyon Res Site AC[illegible]

NUECES RIVER BASIN

08206900 Choke Canyon Reservoir near Three Rivers, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

08206880 -- Choke Canyon Res Site BC

Date	Time	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
MAR							
05...	0840	1.00	785	8.6	12.5	10.7	99
05...	0842	10.0	785	8.6	12.5	10.5	97
05...	0844	20.0	785	8.6	12.0	10.5	96
JUN							
18...	0900	1.00	856	8.1	29.0	7.0	92
18...	0902	10.0	863	8.0	28.5	5.7	74
18...	0904	19.0	879	7.9	28.0	1.7	22
AUG							
01...	0914	1.00	408	8.3	30.0	6.1	82
01...	0916	10.0	409	8.3	30.0	6.0	80
01...	0918	20.0	409	8.2	29.5	5.8	77
01...	0920	30.0	469	7.5	28.0	.0	0
01...	0922	37.0	531	7.4	27.5	.0	0

08206870 -- Choke Canyon Res Site CC

Date	Time	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L) (00556)	2,4,5-T DIS- SOLVED (UG/L) (39742)	2,4-D, DIS- SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)
MAR													
05...	0920	1.00	785	8.5	12.0	.52	10.7	98	--	--	--	--	--
MAR													
05-05	0920	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
05...	0922	10.0	786	8.6	12.0	--	10.6	97	--	--	--	--	--
05...	0924	20.0	786	8.5	12.0	--	10.1	92	--	--	--	--	--
05...	0926	30.0	786	8.4	11.5	--	9.9	90	--	--	--	--	--
05...	0928	42.0	788	8.4	11.5	--	9.5	86	--	--	--	--	--
JUN													
18...	0925	1.00	882	8.0	29.0	.58	6.9	91	E3n	--	--	--	--
JUN													
18-18	0925	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
18...	0927	10.0	881	7.9	29.0	--	6.4	84	--	--	--	--	--
18...	0929	20.0	886	8.0	29.0	--	5.8	76	--	--	--	--	--
18...	0931	30.0	885	8.0	29.0	--	5.7	75	--	--	--	--	--
18...	0933	38.0	888	7.9	28.5	--	3.6	47	--	--	--	--	--
18...	0933	38.0	--	--	--	--	--	--	--	--	--	--	--
AUG													
01...	1026	1.00	325	7.8	29.5	1.10	4.6	61	--	--	--	--	--
AUG													
01-01	1026	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
01...	1028	10.0	323	7.8	29.0	--	4.5	59	--	--	--	--	--
01...	1030	20.0	328	7.8	30.0	--	4.5	60	--	--	--	--	--
01...	1032	30.0	346	7.9	29.0	--	5.2	68	--	--	--	--	--
01...	1034	40.0	343	7.8	29.0	--	4.5	59	--	--	--	--	--
01...	1036	50.0	317	7.3	28.0	--	.0	0	--	--	--	--	--
01...	1038	57.0	519	7.3	27.5	--	.0	0	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

08206870 -- Choke Canyon Res Site CC

[illegible]

08206870 -- Choke Canyon Res Site CC

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

[illegible][illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

[illegible][illegible]

NUECES RIVER BASIN

08206900 Choke Canyon Reservoir near Three Rivers, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

08206870 -- Choke Canyon Res Site CC

Date	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
MAR 05...	--	--	--	--	--	--	--	--	--
MAR 05-05	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.07	<.009
MAR 05...	--	--	--	--	--	--	--	--	--
MAR 05...	--	--	--	--	--	--	--	--	--
MAR 05...	--	--	--	--	--	--	--	--	--
MAR 05...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18-18	<.004	<.005	E.01	<.034	<.02	<.005	<.002	<.07	<.009
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--
AUG 01-01	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.07	<.009
AUG 01...	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--

08206860 -- Choke Canyon Res Site DC

Date	Time	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
MAR 05...	1015	1.00	786	8.4	12.0	11.3	103
MAR 05...	1017	13.0	788	8.5	11.5	10.9	99
JUN 18...	1034	1.00	877	8.1	30.0	7.1	95
JUN 18...	1036	11.0	877	8.1	30.0	6.9	92
AUG 01...	1050	1.00	323	8.1	30.0	6.5	87
AUG 01...	1052	10.0	324	8.1	30.0	6.4	86
AUG 01...	1054	20.0	324	8.1	30.0	6.2	83
AUG 01...	1056	31.0	326	8.0	30.0	5.5	74

08206850 -- Choke Canyon Res Site EC

Date	Time	SAMPLING DEPTH (FEET) (000003)	SPECIFIC CONDUCTANCE (US/CM) (000095)	PH WATER WHOLE FIELD (STANDARD WATER) (000400)	TEMPERATURE (DEG C) (000010)	TRANSPAR-ENCY (SECCHI DISK) (000078)	OXYGEN, DIS-SOLVED (MG/L) (000300)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION) (000301)	2,4,5-T DIS-SOLVED (UG/L) (39742)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, REC GF 0.7U (38746)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U (82660)	SILVEX, DIS-SOLVED (UG/L) (39762)	
MAR	05...	0940	1.00	789	8.5	11.5	.64	10.7	97	--	--	--	--	--
MAR	05-05	0940	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006	<.03
	05...	0942	10.0	789	8.6	11.5	--	10.6	96	--	--	--	--	--
	05...	0944	18.0	790	8.4	11.5	--	10.2	92	--	--	--	--	--
JUN	18...	1011	1.00	880	8.1	29.5	.58	7.6	101	--	--	--	--	--
JUN	18-18	1011	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006	<.03
	18...	1013	10.0	883	8.0	29.0	--	5.1	67	--	--	--	--	--
	18...	1015	15.0	888	8.1	29.0	--	2.9	38	--	--	--	--	--
AUG	01...	1008	1.00	316	7.9	29.5	1.13	5.6	74	--	--	--	--	--
AUG	01-01	1008	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006	<.03
	01...	1010	10.0	316	7.9	29.5	--	5.4	72	--	--	--	--	--
	01...	1012	20.0	319	7.9	29.5	--	5.3	70	--	--	--	--	--
	01...	1014	30.0	307	7.6	29.0	--	3.3	43	--	--	--	--	--
	01...	1016	37.0	306	7.5	29.0	--	2.1	28	--	--	--	--	--

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WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

08206850 -- Choke Canyon Res Site EC

[illegible]

08206850 -- Choke Canyon Res Site EC

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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NUECES RIVER BASIN

08206900 Choke Canyon Reservoir near Three Rivers, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

08206850 -- Choke Canyon Res Site EC

Date	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)
MAR 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 05-05	<.01	<.010	<.011	<.02	<.22	<.12	<.004	<.005	E.01n	<.034	<.02	<.005	<.002
MAR 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18-18	<.01	<.010	<.011	<.02	<.22	<.41	<.004	<.005	E.01	<.034	<.02	<.005	<.002
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 01-01	<.01	<.010	<.011	<.02	<.22	<.12	<.004	<.005	<.02	<.034	<.02	<.005	<.002
AUG 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--	--	--	--	--

08206850 -- Choke Canyon Res Site EC

Date	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
MAR 05...	--	--
MAR 05-05	<.07	<.009
MAR 05...	--	--
MAR 05...	--	--
JUN 18...	--	--
JUN 18-18	<.07	<.009
JUN 18...	--	--
JUN 18...	--	--
AUG 01...	--	--
AUG 01-01	<.07	<.009
AUG 01...	--	--
AUG 01...	--	--
AUG 01...	--	--
AUG 01...	--	--

WATER-QUALITY DATA. WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT) (00301)	2,4,5-T DIS-SOLVED (UG/L) (39742)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U (38746)	2,6-DI-ETHYL ANILINE, WAT FLT 0.7 U (82660)	SILVEX, DIS-SOLVED (UG/L) (39762)
MAR 05...	1120	1.00	1120	8.0	13.0	.37	10.3	97	--	--	--	--	--
MAR 05-05	1120	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006	<.03
MAR 05...	1122	10.0	1250	7.9	12.5	--	8.9	83	--	--	--	--	--
MAR 05...	1124	20.0	1260	7.9	12.5	--	9.0	84	--	--	--	--	--
MAR 05...	1126	25.0	1260	8.0	12.5	--	7.4	69	--	--	--	--	--
JUN 18...	1134	1.00	937	8.1	30.0	.61	6.6	89	--	--	--	--	--
JUN 18-18	1134	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006	<.03
JUN 18...	1136	10.0	946	7.6	29.0	--	1.3	17	--	--	--	--	--
JUN 18...	1138	22.0	960	7.8	27.0	--	.0	0	--	--	--	--	--
JUN 18...	1140	22.0	--	--	--	--	--	--	--	--	--	--	--
AUG 01...	1126	1.00	313	7.7	30.5	1.01	3.2	43	--	--	--	--	--
AUG 01-01	1126	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006	<.03
AUG 01...	1128	10.0	319	7.6	30.0	--	2.3	31	--	--	--	--	--
AUG 01...	1130	20.0	367	7.5	30.0	--	.7	9	--	--	--	--	--
AUG 01...	1132	30.0	461	7.4	30.0	--	.0	0	--	--	--	--	--
AUG 01...	1134	40.0	667	7.3	30.0	--	.0	0	--	--	--	--	--
AUG 01...	1136	46.0	744	7.3	30.0	--	.0	0	--	--	--	--	--

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WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

[illegible][illegible]

NUECES RIVER BASIN

08206900 Choke Canyon Reservoir near Three Rivers, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

08206840 -- Choke Canyon Res Site FC

Date	METHYL PARA- THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL PARA- THION, WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC- LORAM, WATER, FLTRD GF 0.7U REC (UG/L) (49291)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO- PHAM, WATER, FLTRD GF 0.7U REC (UG/L) (49236)	PRO- POXUR, WATER, FLTRD GF 0.7U REC (UG/L) (38538)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
MAR 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 05-05	--	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.12	<.004
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18-18	--	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.74	<.13	<.004
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	<5.0	--	--	--	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 01-01	--	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.12	<.004
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--

08206840 -- Choke Canyon Res Site FC

Date	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- CLOPYR, WATER, FLTRD GF 0.7U REC (UG/L) (49235)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
MAR 05...	--	--	--	--	--	--	--	--
MAR 05-05	<.005	<.02	<.034	<.02	<.005	<.002	<.07	<.009
05...	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--
JUN 18-18	<.005	E.01	<.034	<.02	<.005	<.002	<.07	<.009
18...	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--
AUG 01-01	<.005	<.02	<.034	<.02	<.005	<.002	<.07	<.009
01...	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--

Remark codes used in this report:

< -- Less than

E -- Estimated value

Value qualifier codes used in this report:

n -- Below the NDV

Null value qualifier codes used in this report:

u -- Unable to determine-matrix interference

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NUECES RIVER BASIN

08206910 Choke Canyon Reservoir (Outlet Works Channel) near Three Rivers, TX
(Partial-record station)

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.--Nov. 1991 to current year (daily mean discharges below 1,130 ft³/s).

GAGE.--Water-stage recorder. Datum of gage is 124.06 ft above NGVD of 1929.

REMARKS.--Records fair. Since installation of gage in water year 1992, at least 10% of the contributing drainage area has been regulated. Flow at times is affected by backwater from the spillway of Choke Canyon Reservoir and from the Atascosa River.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, about 38 ft (backwater), Sept. 11, 2002; minimum discharge, 0.00 ft³/s, Oct. 21, 1997, gage height, 3.64 ft.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, about 38 ft (backwater), Sept. 11, 2002; minimum discharge, 0.00 ft³/s, Aug. 3, 4, 5, 6, gage height, 3.61 ft.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	42	38	41	35	33	37	39	37	48	16	31
2	37	40	38	42	35	33	37	40	44	---	16	31
3	38	38	167	43	35	32	38	38	42	---	5.7	31
4	39	39	727	43	34	32	37	38	42	---	0.67	31
5	41	39	137	44	34	32	37	39	43	---	0.16	31
6	40	39	38	44	33	32	36	39	37	---	12	31
7	41	38	38	44	33	32	37	39	36	---	193	31
8	41	39	38	44	32	33	36	37	37	---	230	31
9	40	38	38	44	31	33	35	35	37	---	35	77
10	41	38	38	45	31	33	34	33	36	---	36	---
11	41	37	38	46	31	33	34	33	37	---	36	---
12	42	37	38	46	31	34	34	32	36	---	36	---
13	45	36	38	46	32	33	36	33	38	---	36	---
14	45	37	39	47	32	33	37	34	42	---	37	---
15	45	40	39	47	32	34	35	34	40	---	37	---
16	47	e39	39	48	32	34	34	34	34	---	36	---
17	46	e38	39	50	32	34	33	33	33	---	36	---
18	44	e37	39	52	32	34	33	35	33	---	36	---
19	44	e37	39	52	33	34	33	37	33	---	36	---
20	44	37	39	53	33	34	34	37	33	---	36	---
21	43	38	39	54	33	34	34	38	33	---	36	---
22	42	38	39	54	32	34	33	38	33	---	36	---
23	42	186	39	54	33	34	34	38	34	---	35	---
24	42	353	39	54	33	35	34	37	34	---	34	---
25	40	55	39	53	33	35	33	36	34	---	36	---
26	39	38	39	52	33	34	34	36	33	---	34	e33
27	39	38	39	51	33	34	35	33	34	---	34	e33
28	39	38	39	51	33	35	38	36	33	443	33	e33
29	41	37	39	46	---	35	38	44	31	152	31	e33
30	41	37	40	40	---	34	38	43	32	89	31	e33
31	42	---	40	37	---	34	---	38	---	16	31	---
TOTAL	1289	1623	2115	1467	916	1040	1058	1136	1081	---	1277.53	---
MEAN	41.58	54.10	68.23	47.32	32.71	33.55	35.27	36.65	36.03	---	41.21	---
MAX	47	353	727	54	35	35	38	44	44	---	230	---
MIN	37	36	38	37	31	32	33	32	31	---	0.16	---
AC-FT	2560	3220	4200	2910	1820	2060	2100	2250	2140	---	2530	---

e Estimated

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NUECES RIVER BASIN

08208000 Atascosa River at Whitsett, TX

LOCATION.--Lat 28°37'19", long 98°16'52", Live Oak County, Hydrologic Unit 12110111, 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.--Sept. 1924 to May 1926 (monthly discharge only), May 1932 to current year.

GAGE.--Water-stage recorder. Datum of gage is 159.04 ft above NGVD of 1929. 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. Satellite telemeter at station.

REMARKS.--Records fair. 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. No known regulation. There are several small diversions above station. No flow at times.

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 Sept. 1919.

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	1.4	23	11	8.2	12	5.5	6.5	1.8	830	38	13
2	7.1	1.6	322	10	7.7	13	5.8	5.3	1.8	7260	36	12
3	6.0	1.5	1710	10	8.0	13	5.4	5.4	1.8	9000	35	9.4
4	5.0	1.2	1630	10	8.2	12	5.2	5.3	1.8	7260	35	8.3
5	6.6	1.7	304	11	8.2	13	4.7	5.2	1.7	5770	36	7.6
6	6.9	1.6	129	12	8.0	14	4.1	4.8	1.7	7380	34	8.4
7	5.6	1.4	81	22	7.5	15	3.9	4.6	1.7	6520	33	10
8	4.0	1.6	67	20	6.0	15	4.0	4.3	1.8	3590	32	27
9	3.3	1.8	167	e16	5.1	15	219	4.1	1.8	1770	31	1280
10	3.2	1.8	155	e14	5.0	15	763	3.8	1.8	459	30	8320
11	3.1	4.0	83	12	4.9	15	314	3.6	1.8	328	29	11200
12	3.1	4.8	85	11	4.6	16	52	3.2	1.8	216	28	4780
13	3.5	3.7	257	11	4.5	16	31	2.9	1.7	144	25	2070
14	4.0	367	162	12	4.7	16	23	2.3	1.7	148	24	452
15	3.8	13600	76	12	4.9	17	19	2.3	1.7	2980	22	750
16	3.2	4760	195	11	4.7	16	16	2.5	1.7	2050	20	1310
17	6.4	2030	172	11	4.5	16	417	3.0	1.7	1010	19	2890
18	5.9	452	53	10	4.5	16	509	9.2	1.7	996	18	1080
19	4.7	148	31	10	4.4	16	75	28	1.7	434	16	293
20	3.8	96	24	10	4.2	15	39	71	1.7	192	15	199
21	3.2	75	20	10	4.1	14	24	20	1.6	127	15	189
22	2.8	55	18	9.6	4.0	12	18	12	1.6	104	14	119
23	2.5	39	16	9.4	5.7	11	15	8.5	1.6	85	13	94
24	2.3	30	16	9.0	10	11	13	5.9	1.7	73	12	81
25	2.1	28	16	8.5	11	11	11	4.5	1.7	63	12	72
26	1.8	27	15	8.4	11	11	10	3.6	1.7	57	11	66
27	1.6	26	14	9.1	11	9.2	9.1	2.8	1.7	51	11	60
28	1.4	24	13	9.4	12	7.8	8.6	2.3	1.9	47	11	57
29	1.3	23	12	9.1	---	6.8	7.7	2.1	105	44	11	54
30	0.94	22	12	8.2	---	6.5	7.1	1.9	129	42	20	51
31	1.2	---	11	8.6	---	6.2	---	1.8	---	40	17	---
TOTAL	117.74	21830.1	5889	345.3	186.6	402.5	2639.1	242.7	282.4	59070	703	35562.7
MEAN	3.798	727.7	190.0	11.14	6.664	12.98	87.97	7.829	9.413	1905	22.68	1185
MAX	7.4	13600	1710	22	12	17	763	71	129	9000	38	11200
MIN	0.94	1.2	11	8.2	4.0	6.2	3.9	1.8	1.6	40	11	7.6
AC-FT	234	43300	11680	685	370	798	5230	481	560	117200	1390	70540

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2002, BY WATER YEAR (WY)

	MEAN	99.97	60.41	58.08	76.31	91.72	33.30	143.7	218.6	233.0	140.3	73.31	251.2
MAX	788	728	1060	2053	1590	250	2298	1365	3445	2879	1207	5006	
(WY)	1947	2002	1992	1968	1992	1970	1977	1957	1935	1942	1946	1967	
MIN	0.048	0.21	0.19	1.52	1.57	1.51	0.57	0.000	0.000	0.000	0.000	0.001	
(WY)	1989	1989	1989	1996	1990	1996	1996	1996	1989	1998	1954	1997	

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1932 - 2002

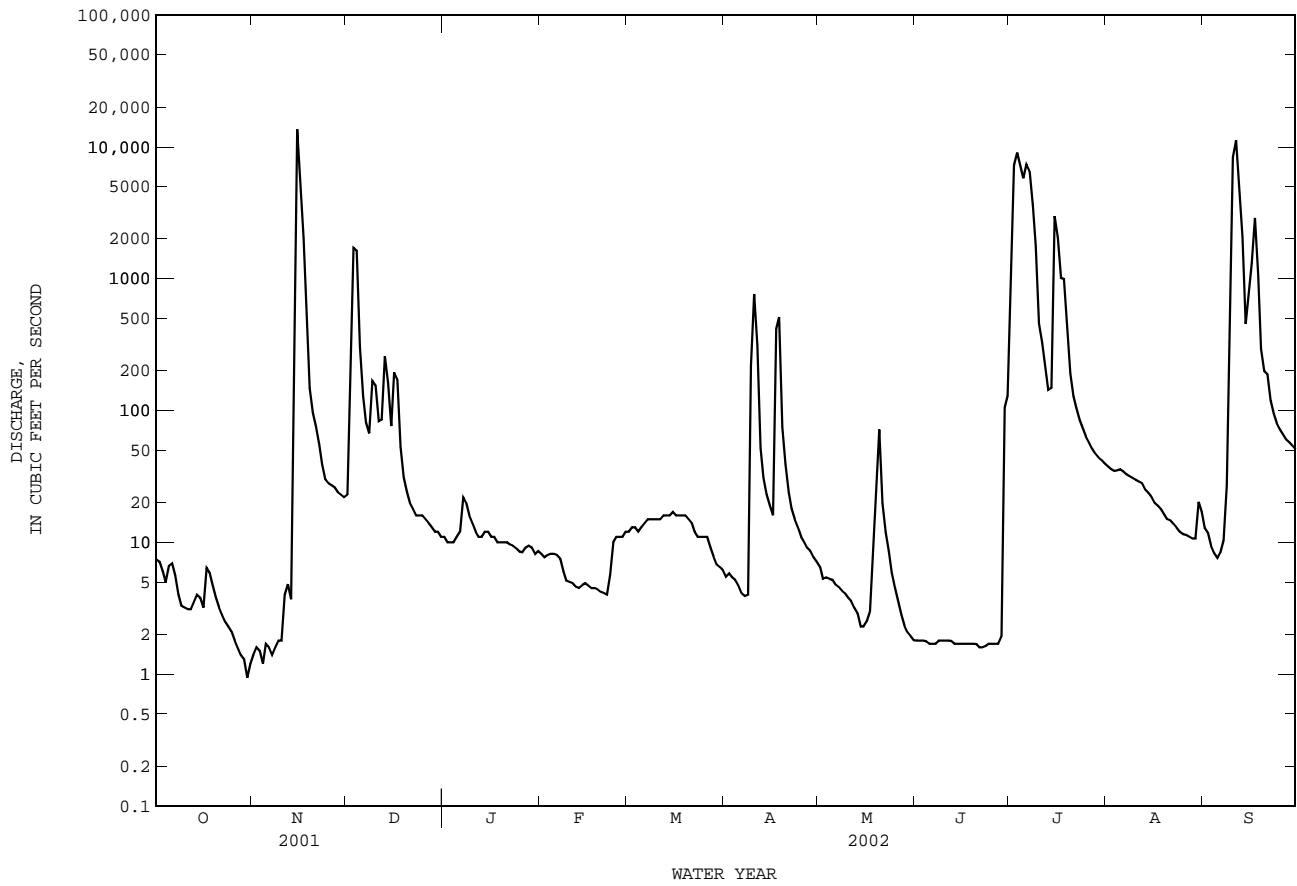
ANNUAL TOTAL	34069.75	127271.14	
ANNUAL MEAN	93.34	348.7	123.5
HIGHEST ANNUAL MEAN			472
LOWEST ANNUAL MEAN			2.29
HIGHEST DAILY MEAN	13600	Nov 15	65000
LOWEST DAILY MEAN	0.58	Jun 22	0.00
ANNUAL SEVEN-DAY MINIMUM	0.62	Aug 15	0.00
MAXIMUM PEAK FLOW			18200
MAXIMUM PEAK STAGE			32.76
ANNUAL RUNOFF (AC-FT)	67580	252400	89500
10 PERCENT EXCEEDS	68	324	91
50 PERCENT EXCEEDS	4.4	12	11
90 PERCENT EXCEEDS	0.82	1.8	0.90

e Estimated

i From indirect measurement of peak flow.

a From floodmark.

08208000 Atascosa River at Whitsett, TX--Continued



NUECES RIVER BASIN

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 Nov. 1919 to Jan. 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 NGVD of 1929. 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, water-stage recorder at site 0.8 mi upstream at datum 1.87 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Mar. 1948, at least 10% of contributing drainage area has been regulated. Part of the flow of the Nueces and Frio Rivers and their headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin upstream from U.S. Highway 90. Some loss of flow into various permeable formations also occurs downstream from the Balcones Fault Zone. Flow of the Atascosa River at Whitsett (station 08208000) is supplemented during dry periods by discharge from the Campbellton water wells. There are many small diversions for irrigation and for municipal supply above this station. No flow at times.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--33 years (water years 1916-48) 945 ft³/s (684,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1916-48).--Maximum discharge, 85,000 ft³/s, Sept. 18, 1919, gage height, 46.0 ft, site and datum then in use; no flow at times.

DISCHARGE FROM THE DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	42	1740	226	116	80	38	40	83	1420	2530	102
2	45	42	2100	220	112	78	38	40	68	4570	1430	91
3	45	42	3350	216	105	74	37	40	57	11100	500	85
4	44	43	4090	211	100	70	37	40	49	13400	364	77
5	42	43	3670	202	101	66	37	39	44	12700	310	73
6	42	43	2250	193	102	65	37	38	40	12400	279	68
7	44	43	1030	191	99	66	37	37	36	11300	395	70
8	43	43	661	205	98	68	36	37	35	10500	980	85
9	42	43	625	203	98	68	35	36	33	8470	710	1050
10	41	43	710	196	95	64	528	36	32	11400	689	5590
11	41	43	633	189	92	62	795	35	31	16400	604	25600
12	40	44	553	184	90	61	226	35	31	19600	507	46200
13	41	56	564	183	90	59	93	35	39	20700	440	42400
14	41	59	698	183	91	59	71	35	51	18200	407	36400
15	41	2360	546	181	91	57	60	34	40	20100	375	36200
16	42	9540	494	175	90	56	53	34	34	34200	337	35000
17	42	11700	633	169	90	55	398	36	31	37100	288	22400
18	42	7220	496	163	87	54	995	41	31	35200	258	19600
19	44	2910	401	159	85	54	385	49	29	31800	239	20000
20	43	1760	360	155	84	53	125	82	30	30200	219	19100
21	43	2290	331	151	83	52	89	220	29	27900	198	17100
22	42	3810	309	148	79	50	68	564	30	22600	187	14400
23	42	6070	289	143	74	49	57	648	29	18600	171	11500
24	42	6660	276	139	72	45	52	641	29	16200	155	8010
25	41	5350	268	137	78	45	49	663	29	13600	143	5330
26	41	3990	263	135	79	45	46	703	28	11000	132	3670
27	41	2930	262	132	80	45	45	735	34	8130	123	2530
28	40	2180	258	133	80	44	43	714	32	6000	114	979
29	41	1830	251	133	---	42	41	360	34	4590	107	467
30	41	1750	242	130	---	40	40	154	148	3780	113	359
31	41	---	233	125	---	39	---	108	---	3130	116	---
TOTAL	1306	72979	28586	5310	2541	1765	4591	6309	1246	496290	13420	374536
MEAN	42.13	2433	922.1	171.3	90.75	56.94	153.0	203.5	41.53	16010	432.9	12480
MAX	46	11700	4090	226	116	80	995	735	148	37100	2530	46200
MIN	40	42	233	125	72	39	35	34	28	1420	107	68
AC-FT	2590	144800	56700	10530	5040	3500	9110	12510	2470	984400	26620	742900

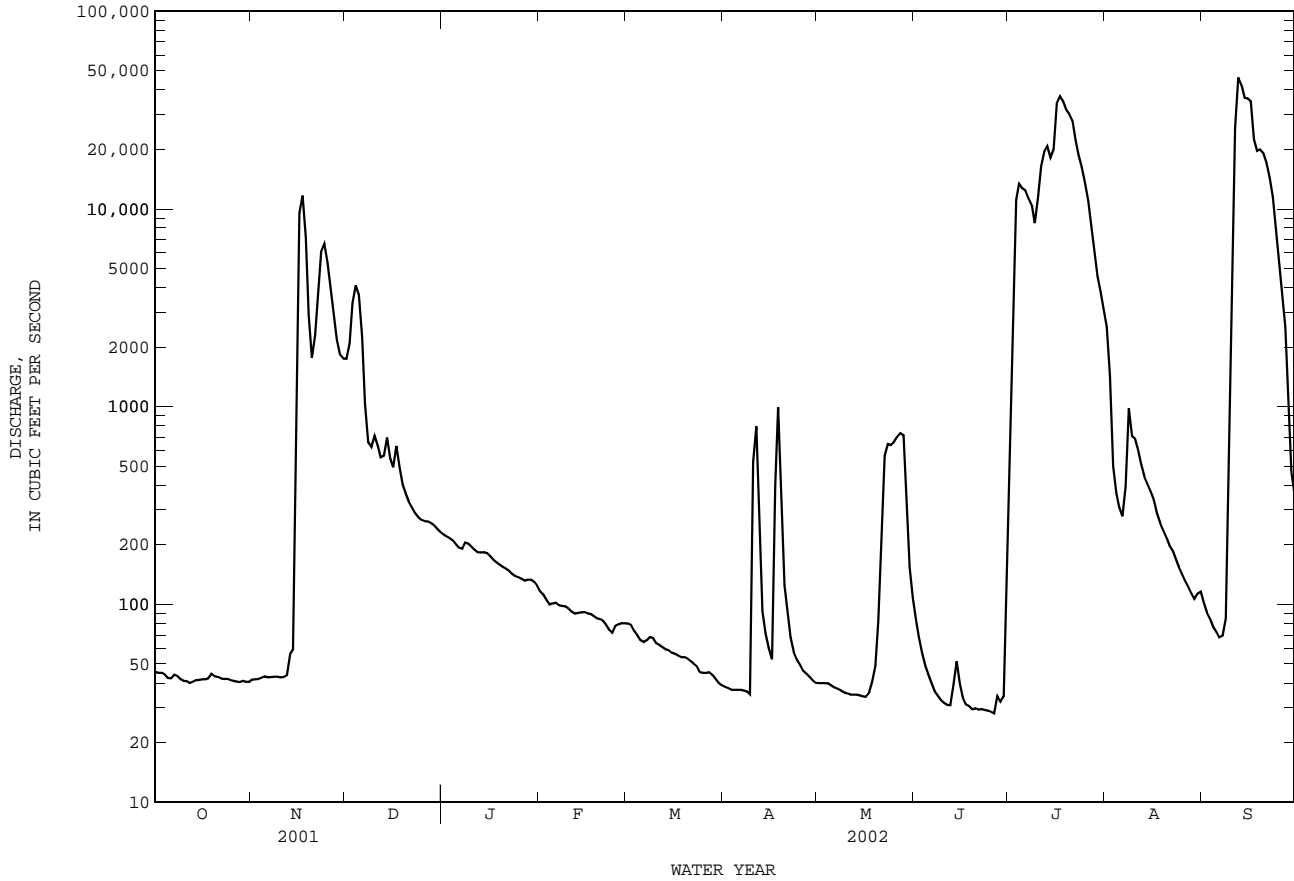
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2002z, BY WATER YEAR (WY)

	MEAN	1136	499.5	229.7	315.5	356.5	218.9	436.1	1067	1253	907.3	597.8	1534
MAX	13810	4944	1801	4833	7868	2285	5082	8645	8451	16010	10550	23650	
(WY)	1972	1977	1977	1958	1958	1949	1977	1957	1987	2002	1971	1967	
MIN	0.54	0.033	0.63	3.61	5.80	6.21	4.30	1.85	8.72	3.05	0.026	1.28	
(WY)	1963	1951	1951	1967	1951	1963	1984	1971	1967	1967	1962	1984	

08210000 Nueces River near Three Rivers, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1949 - 2002z	
ANNUAL TOTAL	165174		1008879		712.9	
ANNUAL MEAN	452.5		2764		2764	
HIGHEST ANNUAL MEAN					82.3	
LOWEST ANNUAL MEAN					128000	
HIGHEST DAILY MEAN	11700	Nov 17	46200	Sep 12	128000	Sep 23 1967
LOWEST DAILY MEAN	28	Jul 10	28	Jun 26	0.00	Aug 25 1950
ANNUAL SEVEN-DAY MINIMUM	31	Aug 17	29	Jun 20	0.00	Aug 28 1950
MAXIMUM PEAK FLOW			48500	Sep 12	141000	Sep 23 1967
MAXIMUM PEAK STAGE			44.45	Sep 12	49.21	Sep 23 1967
ANNUAL RUNOFF (AC-FT)	327600		2001000		516500	
10 PERCENT EXCEEDS	676		10700		1420	
50 PERCENT EXCEEDS	97		107		89	
90 PERCENT EXCEEDS	34		37		6.2	

z Period of regulated streamflow.



NUECES RIVER BASIN

08210000 Nueces River near Three Rivers, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Aug. 1941 to Sept. 1952, May 1965 to current year.

BIOCHEMICAL DATA: May 1965 to current year.

PESTICIDE DATA: Jan. 1968 to May 1982, Oct. 1996 to current year.

SEDIMENT DATA: Oct. 1941 to Aug. 1945, Mar. 1951 to Sept. 1952, Oct. 1974 to Aug. 1994.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct. 1941 to Sept. 1952, Oct. 1974 to Sept. 1981.

WATER TEMPERATURE: Oct. 1950 to Sept. 1952, Oct. 1974 to Sept. 1981.

SUSPENDED-SEDIMENT DISCHARGE: Oct. 1950 to Sept. 1951.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,310 microsiemens/cm, Jan. 17, 1977; minimum daily, 157 microsiemens/cm, 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 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD WATER UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, SATUR-ATION (MG/L) (00301)	HARD-NESS TOTAL (MG/L) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) (00925)	SODIUM, DIS-SOLVED (MG/L) (00930)	SODIUM AD-SORP-TION RATIO (00931)
DEC 18...	1040	494	502	7.6	14.5	9.6	95	180	42	58.0	9.48	34.2	1
MAR 13...	0955	59	803	7.8	15.5	9.8	99	190	9	55.4	12.2	105	3
JUN 05...	1240	44	851	7.8	28.0	5.9	75	200	34	58.1	12.8	85.9	3
AUG 19...	1040	239	654	7.6	29.0	6.2	81	200	36	64.9	8.54	54.3	2
Date	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L) (00935)	CAR-BONATE WATER DIS IT FIELD (MG/L) (00452)	BICAR-BONATE WATER DIS IT FIELD (MG/L) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L) (00454)	SULFATE DIS-SOLVED (MG/L) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) (00950)	SILICA, DIS-SOLVED (MG/L) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (00956)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L) (00631)
DEC 18...	28	4.79	1	172	143	29.0	55.6	E.1	12.8	295	1.04	.008	1.05
MAR 13...	53	8.89	1	218	180	64.9	113	.3	13.0	481	--	E.004	E.04
JUN 05...	47	10.7	1	198	164	61.1	117	.2	16.2	462	.12	.008	.12
AUG 19...	36	6.99	1	195	162	43.9	78.2	.2	15.8	372	.28	.009	.29
Date	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L) (00660)	ALUM-INUM, DIS-SOLVED (UG/L) (01106)	ANTI-MONY, DIS-SOLVED (UG/L) (01095)	ARSENIC DIS-SOLVED (UG/L) (01000)	BARIUM, DIS-SOLVED (UG/L) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L) (01010)	CADMIUM DIS-SOLVED (UG/L) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L) (01030)
DEC 18...	E.03	--	.45	.08	.06	.184	<1	.10	2	71	<.06	<.04	<.8
MAR 13...	<.04	--	.54	.07	.06	.181	<1	.66	5	85	<.06	<.04	<.8
JUN 05...	E.03	--	.59	.11	.10	.307	1	.46	7	109	<.06	<.04	<.8
AUG 19...	.05	.34	.39	.10	.11	.337	<1	.30	5	112	<.06	<.04	<.8
Date	COBALT, DIS-SOLVED (UG/L) (01035)	COPPER, DIS-SOLVED (UG/L) (01040)	IRON, DIS-SOLVED (UG/L) (01046)	LEAD, DIS-SOLVED (UG/L) (01049)	LITHIUM DIS-SOLVED (UG/L) (01130)	MANGA-NESE, DIS-SOLVED (UG/L) (01056)	MERCURY DIS-SOLVED (UG/L) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L) (01060)	NICKEL, DIS-SOLVED (UG/L) (01065)	SELE-NIUM, DIS-SOLVED (UG/L) (01145)	SILVER, DIS-SOLVED (UG/L) (01075)	STRON-TIUM, DIS-SOLVED (UG/L) (01080)	VANA-DIUM, DIS-SOLVED (UG/L) (01085)
DEC 18...	.19	1.2	E5	<.08	9	1.4	<.01	1.2	1.50	<2	<1	307	E6
MAR 13...	.31	2.2	<10	E.08	27	7.7	<.01	2.7	.39	<2	<1	397	E7
JUN 05...	.29	1.7	<10	<.08	20	5.3	<.01	2.1	1.47	<2	<1	397	9
AUG 19...	.29	1.6	<10	.10	17	7.8	<.01	1.9	1.14	E1	<1	361	E8

08210000 Nueces River near Three Rivers, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	2,4,5-T DIS- SOLVED (UG/L) (39742)	2,4-D, DIS- SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	SILVEX, DIS- SOLVED (UG/L) (39762)	3HYDRXY CARBO- FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	DNOC WAT,FLT GF 0.7U REC (UG/L) (49299)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL- UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI- CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)
DEC 18...	1	.91	--r	--r	--r	--	--r	<.11	--r	--	--r	--	<.21
MAR 13...	1	1.13	<.07	<.16	<.25	<.006	<.03	<.11	<.25	<.006	<.05	<.004	<.21
JUN 05...	2	.95	<.07	<.16	<.25	<.006	<.03	<.64	<.25	<.006	<.05	<.004	<.21
AUG 19...	2	.94	<.07	<.16	<.25	<.006	<.03	<.13	<.25	<.006	<.05	<.004	<.21
Date	ALDI- CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA- RB SUL- FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENTA- ZON, WATER, FLTRD, DISS, GF 0.7U REC (UG/L) (38711)	BRO- MACIL, WATER, DISS, REC (UG/L) (04029)	BRO- MOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)
DEC 18...	<.20	<.27	--	--	--	--	--r	<.09	--r	--	<.080	--	<.15
MAR 13...	<.20	<.27	<.005	.029	<.050	<.010	<.05	<.11	<.07	<.002	<.080	<.041	<.15
JUN 05...	<.20	<.27	<.005	.045	<.050	<.010	<.05	<.09	<.07	<.002	<.080	<.041	<.15
AUG 19...	<.20	<.27	<.005	E.007n	<.050	<.010	<.05	<.09	<.07	<.002	<.080	<.041	<.15
Date	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLORO- THALO- NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CLOPYR- ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DACTHAL MONO- ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLO- BENIL, WATER, FLTRD, GF 0.7U REC (UG/L) (49303)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)
DEC 18...	--	<.25	--	--	--r	--	--r	--	--	--	--r	<.09	--r
MAR 13...	<.020	<.25	<.005	<.006	<.42	<.018	<.07	<.003	E.005	<.005	<.11	<.09	<.12
JUN 05...	<.020	<.25	<.005	<.006	<.42	<.018	<.07	<.003	E.009	<.005	<.25	<.09	<.12
AUG 19...	<.020	<.25	<.005	<.006	<.42	<.018	<.07	<.003	E.002	<.005	<.11	<.09	<.12
Date	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DISUL- FOTON WATER, FLTRD, GF 0.7U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN- URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUO- METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)
DEC 18...	--	--r	--	<.12	--	--	--	<.07	<.06	--	--	<.06	--
MAR 13...	<.005	<.09	<.02	<.12	<.002	<.009	<.005	<.07	<.06	<.003	<.004	<.06	<.035
JUN 05...	<.005	<.09	<.02	<.12	<.002	<.009	<.005	<.07	<.06	<.003	<.004	<.06	<.035
AUG 19...	<.005	<.09	<.02	<.12	<.002	<.009	<.005	<.07	<.06	<.003	<.004	<.06	<.035
Date	MALA- THION, DIS- SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METHIO- CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH- OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB- URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY- ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)
DEC 18...	--	--r	--r	<.07	<.22	--	--	--	--	<.07	<.04	<.28	<.16
MAR 13...	<.027	<.20	<.26	<.07	<3.02	<.013	<.006	<.002	<.007	<.07	<.04	<.28	<.16
JUN 05...	<.027	<.20	<.26	<.07	<2.90	E.006n	<.006	<.002	<.007	<.07	<.04	<.28	<.16
AUG 19...	<.027	<.20	<.26	<.07	<.22	E.009n	<.006	<.002	<.007	<.07	<.04	<.28	<.16

NUECES RIVER BASIN

08210000 Nueces River near Three Rivers, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC- LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO- PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO- POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)
DEC 18...	--	--	--	--	--	--	--r	--	--	--	--	<.22	<.12
MAR 13...	<.003	<.010	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.12
JUN 05...	<.003	<.010	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.25
AUG 19...	<.003	<.010	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.12
Date													
	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, FLTRD DISS, 0.7 U REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)				
DEC 18...	--	--	--	--	--	--	--	--	--	--r	--		
MAR 13...	<.004	<.005	E.01n	<.034	<.02	<.005	<.002	<.07	<.009				
JUN 05...	<.004	<.005	E.01n	<.034	<.02	<.005	<.002	<.07	<.009				
AUG 19...	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.07	<.009				

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:

n -- Below the NDV

Null value qualifier codes used in this report:

r -- Sample ruined in preparation

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NUECES RIVER BASIN

08210100 Nueces River at Georgewest, TX

LOCATION.--Lat 28°19'58", long 98°05'08", Live Oak County, Hydrologic Unit 12110111, on downstream side of U.S. Highway 59 bridge, 2.0 mi east of Georgewest, and at mile 83.5.

DRAINAGE AREA.--15,724 mi².

PERIOD OF RECORD.--Dec. 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 69.91 ft above NGVD of 1988. Satellite telemeter at station.

REMARKS.--Records fair. Interruptions in the record were due to malfunctions of the instrument. Since installation of gage in 2000, at least 10% of the contributing drainage area has been regulated. There are many small diversions for irrigation and municipal use above this station.

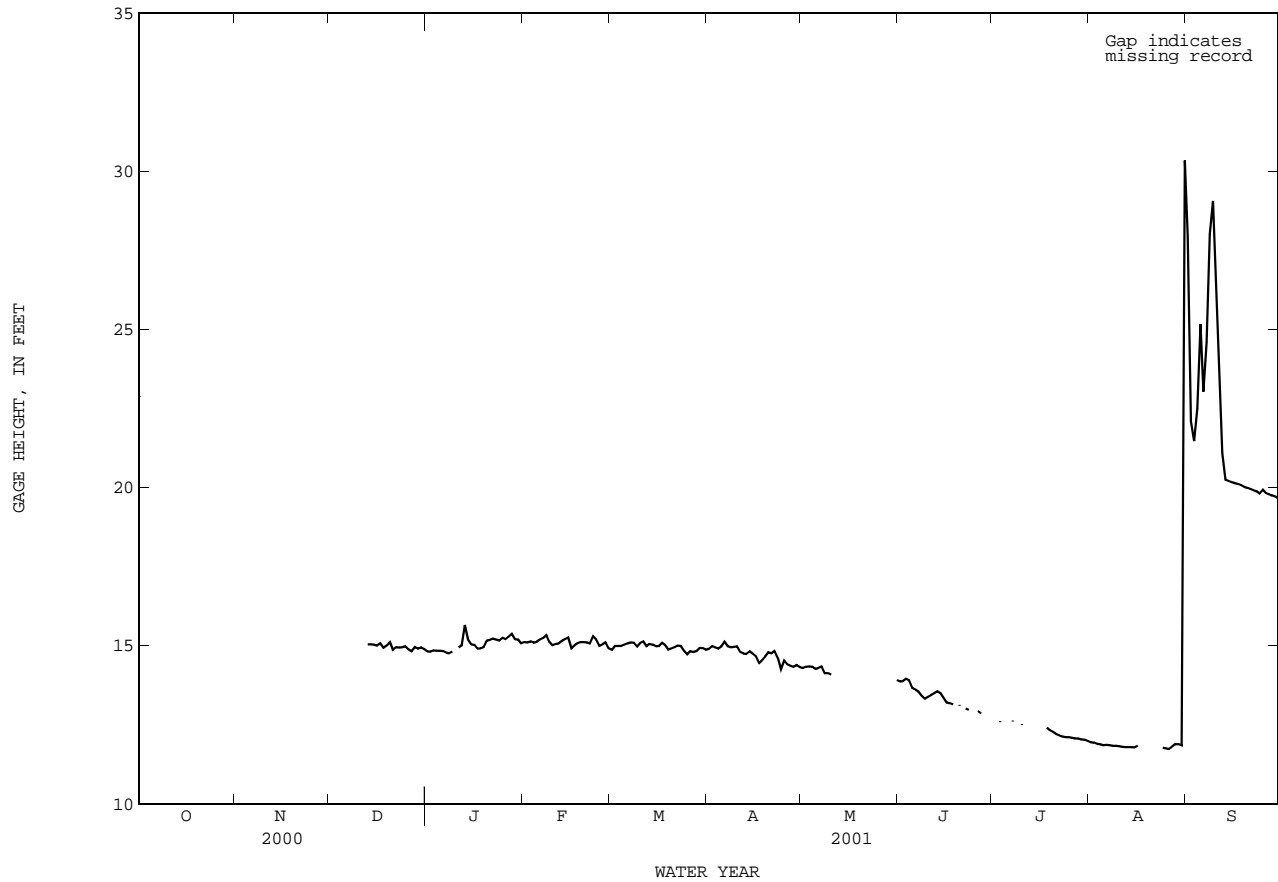
EXTREMES FOR WATER YEAR 2001.--Maximum gage height, 35.84 ft, Aug. 31; minimum gage height, 11.64 ft, Aug. 12.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 56.41 ft, July 19; minimum gage height, 18.48 ft, Nov. 9.

GAGE HEIGHT (PT) FROM DCP, in FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	14.82	15.11	14.86	14.90	14.30	13.87	---	11.95	27.94
2	---	---	---	14.82	15.11	14.99	14.99	14.34	13.88	---	11.94	22.10
3	---	---	---	14.85	15.13	14.99	14.94	14.35	13.95	12.60	11.90	21.47
4	---	---	---	14.85	15.10	15.00	14.91	14.34	13.90	---	11.89	22.50
5	---	---	---	14.84	15.13	15.04	14.98	14.26	13.65	---	11.86	25.17
6	---	---	---	14.84	15.19	15.08	15.12	14.30	13.61	---	11.87	23.02
7	---	---	---	14.78	15.25	15.11	14.99	14.34	13.55	12.61	11.86	24.58
8	---	---	---	14.76	15.34	15.09	14.95	14.14	13.41	---	11.84	28.02
9	---	---	---	14.81	15.13	14.97	14.97	14.13	13.33	---	11.84	29.06
10	---	---	---	---	15.02	15.09	14.99	14.08	13.39	12.51	11.83	26.95
11	---	---	---	14.94	15.06	15.14	14.80	---	13.44	---	11.80	24.22
12	---	---	---	15.00	15.08	14.98	14.75	---	13.50	---	11.80	21.09
13	---	---	15.05	15.65	15.15	15.06	14.74	---	13.56	---	11.79	20.24
14	---	---	15.05	15.20	15.21	15.03	14.82	---	13.50	---	11.80	20.20
15	---	---	15.04	15.04	15.26	14.98	14.75	---	13.35	---	11.79	20.18
16	---	---	15.00	15.03	14.93	14.99	14.68	---	13.21	---	11.84	20.14
17	---	---	15.08	14.91	15.02	15.10	14.46	---	13.18	---	---	20.11
18	---	---	14.93	14.91	15.08	15.03	14.54	---	13.14	12.42	---	20.08
19	---	---	15.01	14.95	15.11	14.89	14.66	---	---	12.33	---	20.03
20	---	---	15.11	15.17	15.11	14.92	14.79	---	13.11	12.27	---	19.99
21	---	---	14.87	15.19	15.11	14.96	14.76	---	---	12.21	---	19.95
22	---	---	14.95	15.22	15.08	15.00	14.84	---	13.01	12.16	---	19.92
23	---	---	14.94	15.20	15.30	14.99	14.62	---	12.97	12.13	---	19.88
24	---	---	14.95	15.17	15.20	14.84	14.26	---	---	12.11	11.78	19.81
25	---	---	14.98	15.25	14.99	14.73	14.53	---	---	12.11	11.76	19.94
26	---	---	14.88	15.21	15.04	14.84	14.40	---	12.94	12.09	11.73	19.82
27	---	---	14.82	15.29	15.10	14.80	14.37	---	12.86	12.07	11.82	19.78
28	---	---	14.95	15.38	14.91	14.83	14.32	---	---	12.07	11.89	19.75
29	---	---	14.91	15.21	---	14.93	14.39	---	---	12.04	11.89	19.72
30	---	---	14.95	15.20	---	14.93	14.33	---	---	12.03	11.85	19.65
31	---	---	14.90	15.08	---	14.87	---	13.91	---	11.99	30.33	---
MEAN	---	---	---	---	15.12	14.97	14.72	---	---	---	---	21.84
MAX	---	---	---	---	15.34	15.14	15.12	---	---	---	---	29.06
MIN	---	---	---	---	14.91	14.73	14.26	---	---	---	---	19.65

08210100 Nueces River at Georgewest, TX--Continued

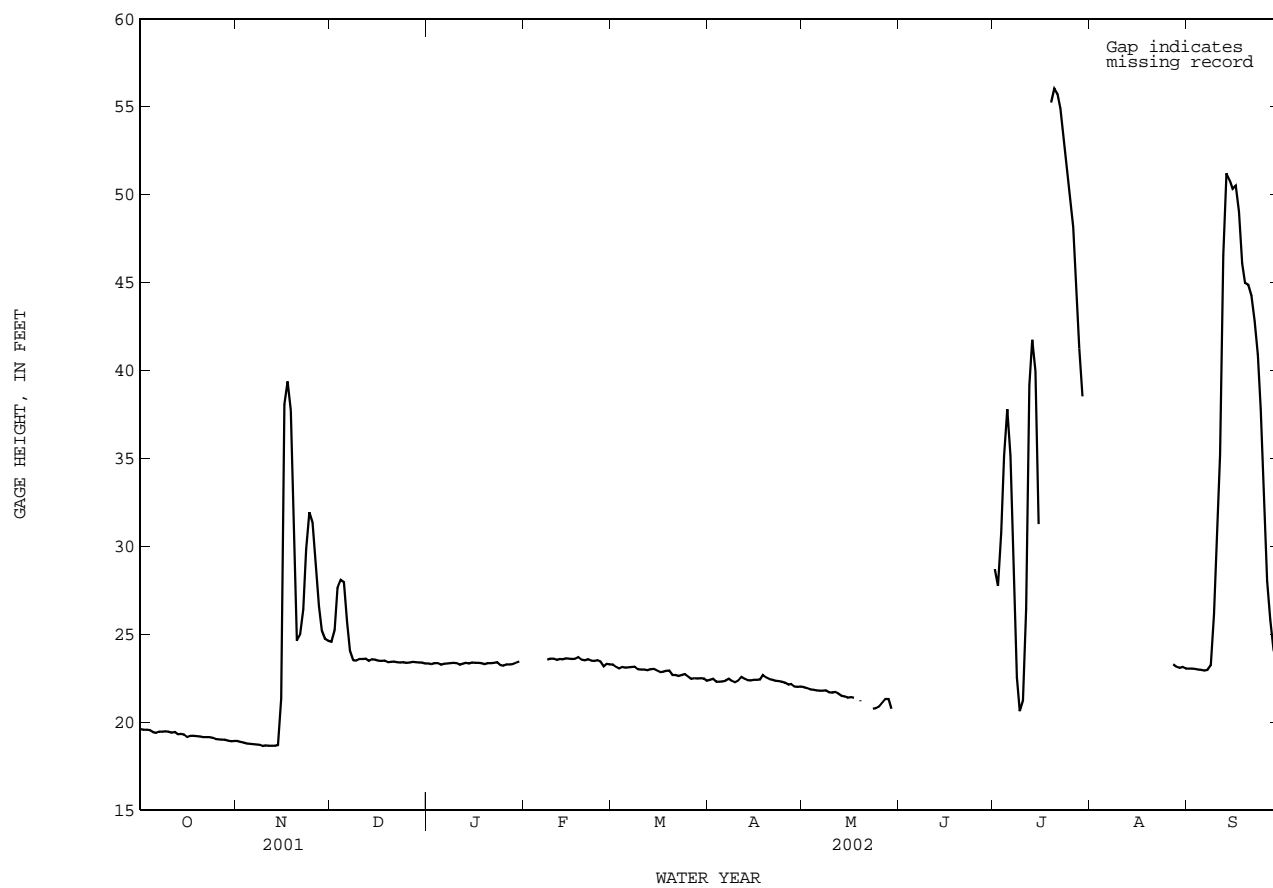


GAGE HEIGHT (PT) FROM DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.61	18.92	24.57	23.33	---	23.27	22.41	21.98	---	28.70	---	23.04
2	19.57	18.88	25.22	23.30	---	23.14	22.46	21.94	---	27.73	---	23.05
3	19.56	18.83	27.64	23.35	---	23.03	22.30	21.86	---	30.75	---	23.02
4	19.54	18.77	28.09	23.35	---	23.14	22.29	21.83	---	35.14	---	23.00
5	19.44	18.76	27.96	23.27	---	23.10	22.31	21.80	---	37.80	---	22.97
6	19.37	18.75	25.67	23.31	---	23.12	22.35	21.79	---	35.14	---	22.94
7	19.46	18.73	24.05	23.33	---	23.14	22.45	21.79	---	28.92	---	22.97
8	19.46	18.71	23.52	23.35	23.55	23.16	22.34	21.80	---	22.54	---	23.23
9	19.47	18.64	23.50	23.38	23.62	23.00	22.26	21.70	---	20.62	---	26.12
10	19.45	18.66	23.58	23.36	23.60	22.98	22.35	21.68	---	21.22	---	29.82
11	19.41	18.65	23.60	23.26	23.54	22.99	22.56	21.71	---	26.45	---	35.22
12	19.43	18.65	23.60	23.32	23.59	22.96	22.47	21.63	---	39.16	---	46.53
13	19.31	18.65	23.49	23.37	23.57	23.01	22.39	21.49	---	41.75	---	51.22
14	19.34	18.70	23.58	23.34	23.62	23.02	22.38	21.46	---	39.98	---	50.84
15	19.30	21.34	23.55	23.40	23.60	22.94	22.40	21.39	---	31.25	---	50.34
16	19.14	38.08	23.51	23.38	23.59	22.84	22.41	21.43	---	---	---	50.52
17	19.21	39.38	23.48	23.37	23.61	22.86	22.43	21.38	---	---	---	49.06
18	19.22	37.75	23.50	23.36	23.70	22.92	22.68	---	---	---	---	46.09
19	19.20	29.90	23.42	23.30	23.55	22.94	22.53	21.20	---	55.25	---	44.98
20	19.17	24.62	23.43	23.35	23.51	22.68	22.44	---	---	56.04	---	44.87
21	19.15	24.97	23.44	23.35	23.57	22.69	22.41	---	---	55.73	---	44.26
22	19.14	26.41	23.41	23.37	23.49	22.62	22.35	---	---	54.91	---	42.83
23	19.15	29.84	23.39	23.42	23.49	22.68	22.34	20.77	---	53.47	---	40.91
24	19.12	31.93	23.41	23.24	23.53	22.73	22.31	20.78	---	51.87	---	37.81
25	19.04	31.34	23.37	23.21	23.44	22.59	22.23	20.87	---	50.12	---	32.52
26	19.02	28.85	23.39	23.27	23.17	22.46	22.13	21.09	---	48.18	---	28.03
27	18.99	26.59	23.42	23.28	23.31	22.51	22.17	21.30	---	45.31	23.28	25.80
28	18.99	25.22	23.41	23.29	23.27	22.48	22.02	21.31	---	41.25	23.15	24.13
29	18.94	24.74	23.39	23.37	---	22.50	22.01	20.74	---	38.53	23.09	23.47
30	18.91	24.64	23.38	23.45	---	22.48	22.02	---	---	---	23.13	23.44
31	18.92	---	23.33	---	---	22.36	---	---	---	---	23.05	---
MEAN	19.26	24.26	24.07	---	---	22.85	22.34	---	---	---	---	34.43
MAX	19.61	39.38	28.09	---	---	23.27	22.68	---	---	---	---	51.22
MIN	18.91	18.64	23.33	---	---	22.36	22.01	---	---	---	---	22.94

NUECES RIVER BASIN

08210100 Nueces River at Georgewest, TX--Continued



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NUECES RIVER BASIN

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.

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Sept. 1948 to Sept. 1960 (month end records only), Oct. 1960 to current year.

REVISED RECORDS.--WSP 1923: 1953(M), 1957(M).

GAGE.--Water-stage recorder. Supplemental water-stage recorder operated by city of Corpus Christi. Datum of gage is NGVD of 1929. 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. Satellite telemeter at station.

REMARKS.--Records good. 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 Mar. 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 Aug. 1966. All gates in both spillways are 37.5 by 8.75 ft wide. The dam is owned by the City of Corpus Christi. 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 withdraw water from the lake for municipal use. Conservation pool storage is 269,900 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	106.0
Top of north spillway gates.....	94.5
Top of south spillway gates.....	94.0
Crest of spillways.....	88.0
Lowest gated outlet (invert).....	55.5

COOPERATION.--Capacity curve 5-C from a Jan. 1987 survey provided by the City of Corpus Christi. Figures for new capacity curve were used beginning Oct. 1, 1989. Prior to Aug. 31, 1998, the City of Corpus Christi provided daily observer readings.

EXTREMES 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 FOR CURRENT YEAR.--Maximum contents, 256,900 acre-ft, July 16, elevation, 94.75 ft; minimum contents, 157,300 acre-ft, Nov. 14, elevation, 89.28 ft.

RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	176200	162800	245700	244400	242200	234500	225500	215800	201400	190700	241800	238000
2	174700	162800	247400	244000	240600	236100	225000	215200	200000	212300	242900	237900
3	173500	162800	246300	242500	240300	234800	225700	214900	198600	222800	241700	237800
4	172400	162600	245900	242500	240400	232400	224600	214000	196800	234500	241500	237400
5	172500	162000	246600	243300	241100	232300	223700	212300	197100	250400	241400	236700
6	174500	161200	245500	242600	240700	232100	223200	211300	196700	253200	241400	236400
7	173000	160600	244200	242600	239900	231900	221800	210300	195100	251700	241200	236400
8	172500	160200	245700	242500	239600	231600	223600	208900	193600	249900	241800	236300
9	171800	160500	244600	242500	239400	233700	224000	209400	192800	247400	242500	241900
10	171500	159900	244300	242900	240600	232400	223300	208600	192500	240600	243100	247800
11	171600	159400	244700	243800	239100	231800	223800	206700	191900	235500	243600	243800
12	170800	159100	244800	243200	238200	231900	224200	206600	191300	239800	243300	245300
13	171600	158800	245700	242900	238500	230900	224200	208100	190700	240400	242300	251500
14	170800	158400	244200	243300	238000	230500	223700	206600	190400	242000	242700	251300
15	170400	159600	244000	242800	238400	231100	222700	205600	190100	250000	e242600	250400
16	170900	196400	244200	242900	238300	231600	221800	204400	189400	254300	242500	246500
17	169200	230000	244200	243000	237700	230700	221600	205900	189300	246100	242500	245200
18	168400	242700	243800	243300	236400	229800	222000	206800	188100	242500	242300	244400
19	168000	243000	244400	243900	237400	229400	222900	205700	187000	242900	241900	243900
20	167700	242800	243500	243000	237700	231800	222600	204600	186300	242300	241400	246400
21	167400	244200	243100	243000	238200	230600	222800	203900	186200	241100	241400	250100
22	167100	243900	243500	242700	237400	230100	222900	203200	185600	242200	241300	248800
23	166500	244600	244200	242400	236000	228400	222300	203300	185000	240900	240900	246600
24	166600	246800	244000	244300	235200	227100	222000	204100	184200	241500	240500	246900
25	166700	246900	243900	242700	235800	228500	221400	204800	183200	240900	240100	244600
26	166100	245900	243500	241600	237900	228800	220300	205300	182900	241300	239800	243900
27	165400	245100	243300	241300	234400	227300	218800	205300	182800	240500	239100	243800
28	164600	244800	243900	241000	234400	226900	219000	205500	182900	239900	238900	244000
29	164300	243700	244400	240200	---	226400	218100	203100	183100	241000	238900	243600
30	163900	244600	244300	239800	---	226000	216700	203600	183100	240900	238500	243400
31	163300	---	244400	242300	---	226800	---	203200	---	240500	238100	---
MEAN	169500	200500	244600	242700	238400	230600	222500	207300	189900	240000	241400	243700
MAX	176200	246900	247400	244400	242200	236100	225700	215800	201400	254300	243600	251500
MIN	163300	158400	243100	239800	234400	226000	216700	203100	182800	190700	238100	236300
(+)	89.65	94.16	94.16	94.05	93.65	93.24	92.70	91.96	90.82	93.96	93.84	94.10
(@)	-14000	+81300	-200	-2100	-7900	-7600	-10100	-13500	-20100	+57400	-2400	+5300

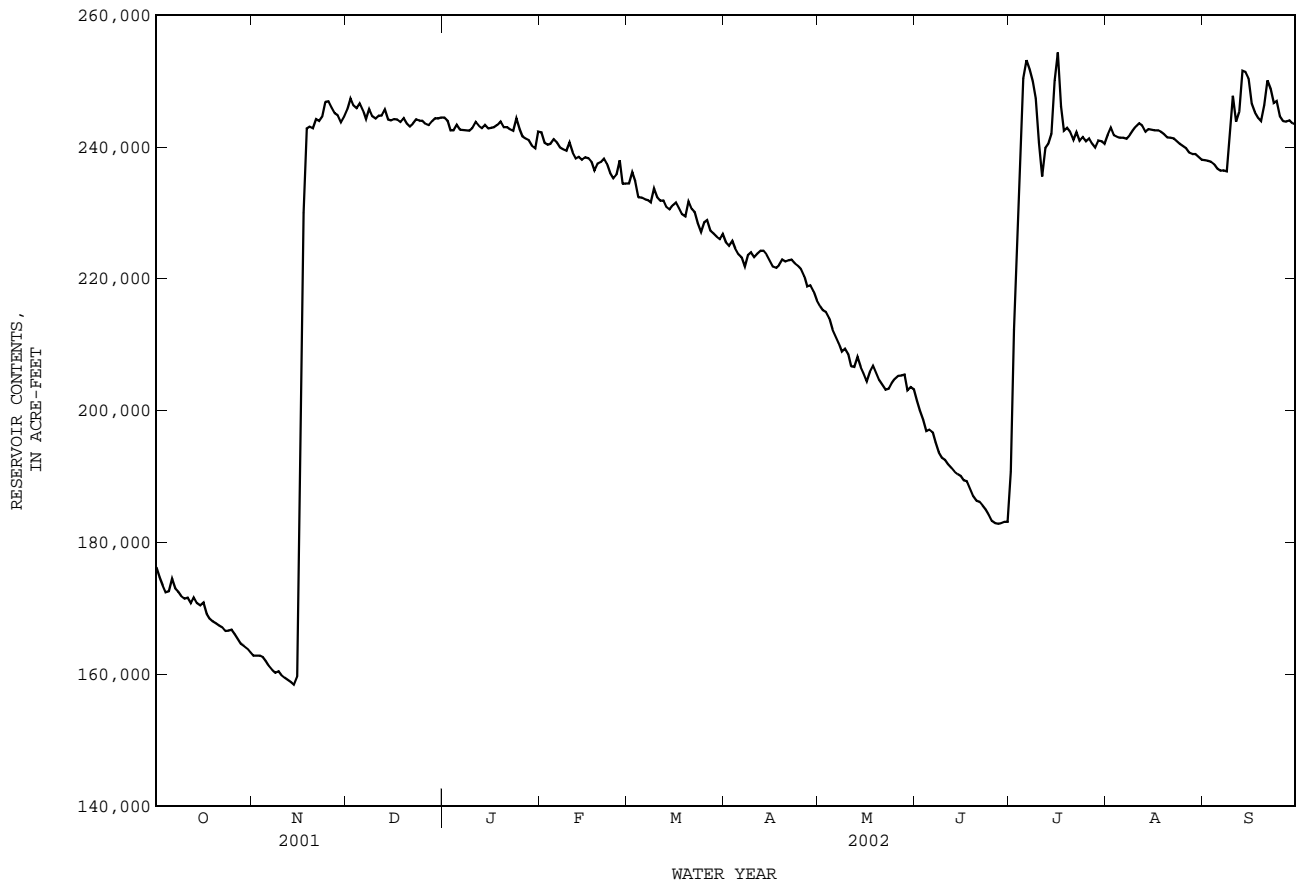
CAL YR 2001 MAX 247400 MIN 51380 (@) +143600
WTR YR 2002 MAX 254300 MIN 158400 (@) +66100

e Estimated

(+) Elevation, in feet, at end of month.

(@) Change in contents, in acre-feet.

08210500 Lake Corpus Christi near Mathis, TX--Continued



NUECES RIVER BASIN

08210500 Lake Corpus Christi near Mathis, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Mar. 1971 to Sept. 1976, Mar. 1999 to current year.

BIOCHEMICAL DATA: Mar. 1971 to Sept. 1976.

PESTICIDE DATA: Mar. 1999 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

280238097521301 -- Lk Corpus Christi Site AC

Date	Time	RESER- VOIR STORAGE (AC-FT) (00054)	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
MAR													
05...	1400	232000	1.00	339	8.2	13.0	.27	9.4	88	120	7	39.8	4.73
MAR													
05-05	1400	--	--	--	--	--	--	--	--	--	--	--	--
05...	1402	--	10.0	338	8.2	12.5	--	9.3	86	--	--	--	--
05...	1404	--	20.0	339	8.2	12.5	--	9.3	86	--	--	--	--
05...	1406	--	30.0	340	8.2	12.5	--	9.3	86	--	--	--	--
05...	1408	--	39.0	340	8.1	12.5	--	9.2	85	120	7	40.1	4.78
JUN													
18...	1615	187000	1.00	429	8.9	29.5	.48	7.3	97	160	13	53.1	6.26
JUN													
18-18	1615	--	--	--	--	--	--	--	--	--	--	--	--
18...	1617	--	10.0	428	9.0	28.5	--	6.2	81	--	--	--	--
18...	1619	--	20.0	427	9.0	28.0	--	5.7	74	--	--	--	--
18...	1621	--	30.0	427	9.0	27.5	--	4.1	53	--	--	--	--
18...	1623	--	34.0	426	8.8	27.0	--	3.1	39	140	1	47.5	6.15
18...	1623	--	34.0	--	--	--	--	--	--	--	--	--	--
JUL													
31...	1604	241000	1.00	303	7.9	30.5	.24	6.0	80	110	--	38.2	3.74
JUL													
31-31	1604	--	--	--	--	--	--	--	--	--	--	--	--
31...	1606	--	10.0	302	7.9	30.0	--	5.9	78	--	--	--	--
31...	1608	--	20.0	302	7.9	30.0	--	5.3	70	--	--	--	--
31...	1610	--	30.0	304	7.8	30.0	--	5.0	66	--	--	--	--
31...	1612	--	38.0	304	7.8	29.5	--	4.7	62	110	--	38.6	3.80

280238097521301 -- Lk Corpus Christi Site AC

Date	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L) (00556)
MAR													
05...	20.9	.8	26	7.05	<1	136	112	17.0	24.2	.2	14.5	196	--
MAR													
05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	21.0	.8	26	6.94	1	136	112	17.0	24.4	.2	14.6	197	--
JUN													
18...	26.8	.9	26	8.23	3	170	146	21.8	32.1	.1	17.2	253	<7
JUN													
18-18	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	<7
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	26.5	1	27	8.23	1	172	142	20.2	30.6	.1	18.5	244	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
31...	14.9	.6	21	6.46	<1	139	115	11.4	14.6	.1	11.0	169	--
JUL													
31-31	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	15.0	.6	21	6.48	<1	138	114	11.5	14.8	.1	11.3	170	--

08210500 Lake Corpus Christi near Mathis, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

280238097521301 -- Lk Corpus Christi Site AC

Date	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR 05...	<1	.33	5	74	<.06	<.04	<.8	.13	2.1	<10	<.08	9	.2
MAR 05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	<1	.24	5	83	<.06	<.04	<.8	.13	1.9	<10	<.08	7	6.3
JUN 18...	<1	.28	6	100	<.06	<.04	<.8	.12	2.9	<10	<.08	7	.2
JUN 18-18	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	<1	.25	6	95	<.06	<.04	<.8	.14	3.0	<10	<.08	9	22.5
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 31...	<1	.24	4	67	<.06	<.04	<.8	.14	2.5	<10	<.08	6	.4
JUL 31-31	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	<1	.24	4	66	<.06	<.04	<.8	.14	2.8	<10	<.08	6	2.0

280238097521301 -- Lk Corpus Christi Site AC

Date	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	2,4,5-T DIS- SOLVED (UG/L) (39742)	2,4-D, DIS- SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)
MAR 05...	<.01	1.0	.87	<2	<1	182	E8	<1	.44	--	--	--	--
MAR 05-05	--	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	<.01	1.1	.78	<2	<1	183	E7	<1	.49	--	--	--	--
JUN 18...	<.01	1.5	.56	<2	<1	233	E6	1	.61	--	--	--	--
JUN 18-18	--	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	<.01	1.4	.38	<2	<1	227	E7	3	.54	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 31...	<.01	.9	1.35	<2	<1	170	E6	1	.20	--	--	--	--
JUL 31-31	--	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	<.01	1.0	1.30	<2	<1	171	E5	1	.20	--	--	--	--

NUECES RIVER BASIN

08210500 Lake Corpus Christi near Mathis, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

280238097521301 -- Lk Corpus Christi Site AC

[illegible]

280238097521301 -- Lk Corpus Christi Site AC

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

280238097521301 -- Lk Corpus Christi Site AC

[illegible]

280238097521301 -- Lk Corpus Christi Site AC

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

280238097521301 -- Lk Corpus Christi Site AC

[illegible]

280238097521301 -- Lk Corpus Christi Site AC

[illegible]

08210500 Lake Corpus Christi near Mathis, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

280238097521301 -- Lk Corpus Christi Site AC

Date	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
MAR 05...	--	--	--	--	--	--	--	--	--
MAR 05-05	<.004	<.005	E.01n	<.034	<.02	<.005	<.002	<.07	E.004n
MAR 05...	--	--	--	--	--	--	--	--	--
MAR 05...	--	--	--	--	--	--	--	--	--
MAR 05...	--	--	--	--	--	--	--	--	--
MAR 05...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18-18	<.004	<.005	E.02	<.034	<.02	<.005	<.002	<.07	<.009
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--
JUL 31-31	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.07	<.009
JUL 31...	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--

280656097542801 -- Lk Corpus Christi Site BC

Date	Time	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L) (00556)	2,4,5-T DIS- SOLVED (UG/L) (39742)	2,4-D, DIS- SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)
MAR 05...	1630	1.00	362	8.2	11.5	.30	9.6	87	--	--	--	--	--
MAR 05-05	1630	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
MAR 05...	1632	10.0	362	8.2	11.5	--	9.6	87	--	--	--	--	--
MAR 05...	1634	23.0	363	8.2	11.5	--	9.6	87	--	--	--	--	--
JUN 18...	1550	1.00	483	8.6	32.0	.43	7.7	107	<7	--	--	--	--
JUN 18-18	1550	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
JUN 18...	1552	10.0	476	8.0	29.5	--	6.3	84	--	--	--	--	--
JUN 18...	1554	19.0	476	8.0	29.5	--	5.8	77	--	--	--	--	--
JUL 31...	1540	1.00	303	7.8	30.5	.18	5.7	77	--	--	--	--	--
JUL 31-31	1540	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
JUL 31...	1542	10.0	302	7.8	30.0	--	5.5	73	--	--	--	--	--
JUL 31...	1544	22.0	302	7.9	30.0	--	5.2	69	--	--	--	--	--

NUECES RIVER BASIN

08210500 Lake Corpus Christi near Mathis, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

280656097542801 -- Lk Corpus Christi Site BC

[illegible]

280656097542801 -- Lk Corpus Christi Site BC

[illegible]

280656097542801 -- Lk Corpus Christi Site BC

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

[illegible][illegible][illegible]

NUECES RIVER BASIN

08210500 Lake Corpus Christi near Mathis, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

280656097542801 -- Lk Corpus Christi Site BC

Date	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
MAR			
05...	--	--	--
MAR			
05-05	<.002	<.07	E.004n
05...	--	--	--
05...	--	--	--
JUN			
18...	--	--	--
JUN			
18-18	<.002	<.07	<.009
18...	--	--	--
18...	--	--	--
JUL			
31...	--	--	--
JUL			
31-31	<.002	<.07	<.009
31...	--	--	--
31...	--	--	--

280921097562701 -- Lk Corpus Christi Site CC

Date	Time	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
MAR							
05...	1610	1.00	392	8.3	11.5	10.1	92
05...	1612	12.0	392	8.3	11.5	9.9	90
JUN							
18...	1540	1.00	528	8.4	32.5	8.6	120
18...	1542	9.00	533	8.2	30.0	4.6	62
JUL							
31...	1522	1.00	312	8.0	31.5	7.0	95
31...	1524	12.0	309	7.8	30.0	5.5	73

281108097544701 -- Lk Corpus Christi Site DC

Date	Time	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
MAR							
05...	1550	1.00	440	8.2	11.5	9.3	84
05...	1552	10.0	440	8.2	11.5	9.6	87
05...	1554	20.0	440	8.2	11.5	9.6	87
JUN							
18...	1510	1.00	586	8.3	31.0	7.5	102
18...	1512	10.0	615	7.9	30.0	4.3	58
18...	1514	16.0	642	7.5	30.0	1.3	17
JUL							
31...	1504	1.00	341	7.4	31.5	4.6	62
31...	1506	10.0	341	7.3	30.5	3.4	45
31...	1508	19.0	336	7.6	30.5	4.1	55

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	SAMPLING DEPTH (FEET) (000003)	SPECIFIC CONDUCTANCE (US/CM) (000095)	PH	TEMPERATURE (DEG C) (000010)	TRANS-ENCY	OXYGEN, DIS-SOLVED (MG/L) (000300)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION) (000301)	OIL AND GREASE, TOTAL RECOVERABLE GRAVIMETRIC (MG/L) (000556)	2,4,5-T DIS-SOLVED (UG/L) (39742)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, REC GF, REC (UG/L) (38746)	2,6-DI-ETHYL ANILINE WAT FLT
				(STANDARD FIELD UNITS) (000400)		(SECCHI DISK) (000078)		(000300)	(000556)				(0.7 UG/L) (82660)
MAR 05...	1520	1.00	674	8.2	12.5	.55	9.4	87	--	--	--	--	--
MAR 05-05	1520	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
05...	1522	10.0	682	8.2	12.0	--	9.0	83	--	--	--	--	--
05...	1524	21.0	695	8.1	12.0	--	8.7	80	--	--	--	--	--
JUN 18...	1450	1.00	683	7.4	33.5	.33	7.5	107	<7	--	--	--	--
JUN 18-18	1450	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
18...	1452	10.0	663	7.3	30.0	--	1.0	13	--	--	--	--	--
18...	1454	19.0	597	7.1	30.0	--	.0	0	--	--	--	--	--
18...	1454	19.0	--	--	--	--	--	--	--	--	--	--	--
JUL 31...	1440	1.00	345	7.2	31.5	.37	4.2	57	--	--	--	--	--
JUL 31-31	1440	--	--	--	--	--	--	--	--	<.07	<.16	<.25	<.006
31...	1442	10.0	344	7.1	31.0	--	3.7	50	--	--	--	--	--
31...	1444	20.0	344	7.1	31.0	--	3.5	47	--	--	--	--	--
31...	1446	25.0	345	7.4	31.0	--	3.5	47	--	--	--	--	--

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

281411097564801 -- Lk Corpus Christi Site EC

[illegible]

281411097564801 -- Lk Corpus Christi Site EC

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

281411097564801 -- Lk Corpus Christi Site EC

[illegible]

281411097564801 -- Lk Corpus Christi Site EC

[illegible]

NUECES RIVER BASIN

08210500 Lake Corpus Christi near Mathis, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

281411097564801 -- Lk Corpus Christi Site EC

Date	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC- LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO- PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO- POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)
MAR 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 05-05	<.010	--	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.12
MAR 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18-18	<.010	--	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.12
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	--	<2.0	--	--	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 31-31	<.010	--	<.006	<.004	<.022	<.011	<.09	<.01	<.010	<.011	<.02	<.22	<.16
JUL 31...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--	--	--	--	--

281411097564801 -- Lk Corpus Christi Site EC

Date	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
MAR 05...	--	--	--	--	--	--	--	--	--
MAR 05-05	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.07	<.009
MAR 05...	--	--	--	--	--	--	--	--	--
MAR 05...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18-18	<.004	.040	E.01	<.034	<.02	<.005	<.002	<.07	<.009
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--
JUL 31-31	<.004	.006	<.02	<.034	<.02	<.005	<.002	<.07	<.009
JUL 31...	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--

Remark codes used in this report:

< -- Less than

E -- Estimated value

Value qualifier codes used in this report:

n -- Below the NDV

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NUECES RIVER BASIN

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.--Aug. 1939 to current year.

Water-quality records.--Chemical data: Oct. 1947 to Sept. 1991. Specific conductance: Oct. 1947 to Sept. 1991. Water temperature: Oct. 1947 to Sept. 1991.

GAGE.--Water-stage recorder. Datum of gage is 26.53 ft above NGVD of 1929. 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. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Since installation of gage in water year 1939, at least 10% of contributing drainage area has been regulated. 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 the City of Corpus Christi is released from Lake Corpus Christi above gage and is diverted from river at Calallen 34 mi downstream.

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 FROM THE DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	336	74	1310	174	163	47	84	303	662	77	1900	45
2	340	69	2680	341	67	243	108	304	598	173	1840	30
3	340	111	4720	63	57	211	115	304	476	356	1160	26
4	339	181	3950	25	58	18	85	303	532	1060	116	19
5	340	182	4060	276	72	27	60	297	110	7110	156	10
6	218	163	4020	51	83	32	61	153	238	13000	140	9.0
7	18	160	1900	18	67	31	62	196	637	12500	130	89
8	37	118	957	17	88	28	56	135	644	11500	138	34
9	86	64	570	63	72	38	36	161	206	11200	117	222
10	85	64	130	86	283	29	42	193	170	11600	140	4120
11	85	64	454	149	82	29	46	167	252	8700	310	7380
12	46	63	434	57	73	31	46	149	139	8780	287	10800
13	19	71	815	16	72	43	109	148	125	13300	254	33500
14	19	86	537	20	81	70	145	128	116	15600	103	49300
15	74	86	515	55	57	83	147	116	110	21100	99	50800
16	105	1550	567	95	62	82	147	111	106	35400	102	48700
17	101	4650	562	112	50	81	148	102	106	39600	97	43900
18	91	8170	255	112	50	62	149	74	121	33500	97	30800
19	89	8460	355	167	67	38	133	92	132	33500	84	23300
20	75	2680	305	83	100	63	73	107	135	32900	101	18200
21	60	910	253	65	187	55	73	107	131	29900	107	19100
22	54	2780	101	84	123	73	73	99	98	27600	104	17800
23	48	3510	126	133	45	119	73	98	100	24800	92	13900
24	47	5670	107	391	47	70	96	98	120	19400	64	10600
25	47	6390	155	280	46	67	177	98	154	15700	55	7380
26	47	6170	100	47	288	58	236	99	167	11700	52	4840
27	64	5110	54	79	73	44	236	228	128	10100	51	2850
28	88	3030	83	80	59	89	264	453	73	6960	57	1410
29	106	1310	112	79	---	132	300	552	27	5500	75	752
30	90	938	112	81	---	133	302	624	25	4550	67	310
31	69	---	147	147	---	136	---	665	---	3360	65	---
TOTAL	3563	62884	30446	3446	2572	2262	3682	6664	6638	470526	8160	400226.0
MEAN	114.9	2096	982.1	111.2	91.86	72.97	122.7	215.0	221.3	15180	263.2	13340
MAX	340	8460	4720	391	288	243	302	665	662	39600	1900	50800
MIN	18	63	54	16	45	18	36	74	25	77	51	9.0
AC-FT	7070	124700	60390	6840	5100	4490	7300	13220	13170	933300	16190	793800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002, BY WATER YEAR (WY)

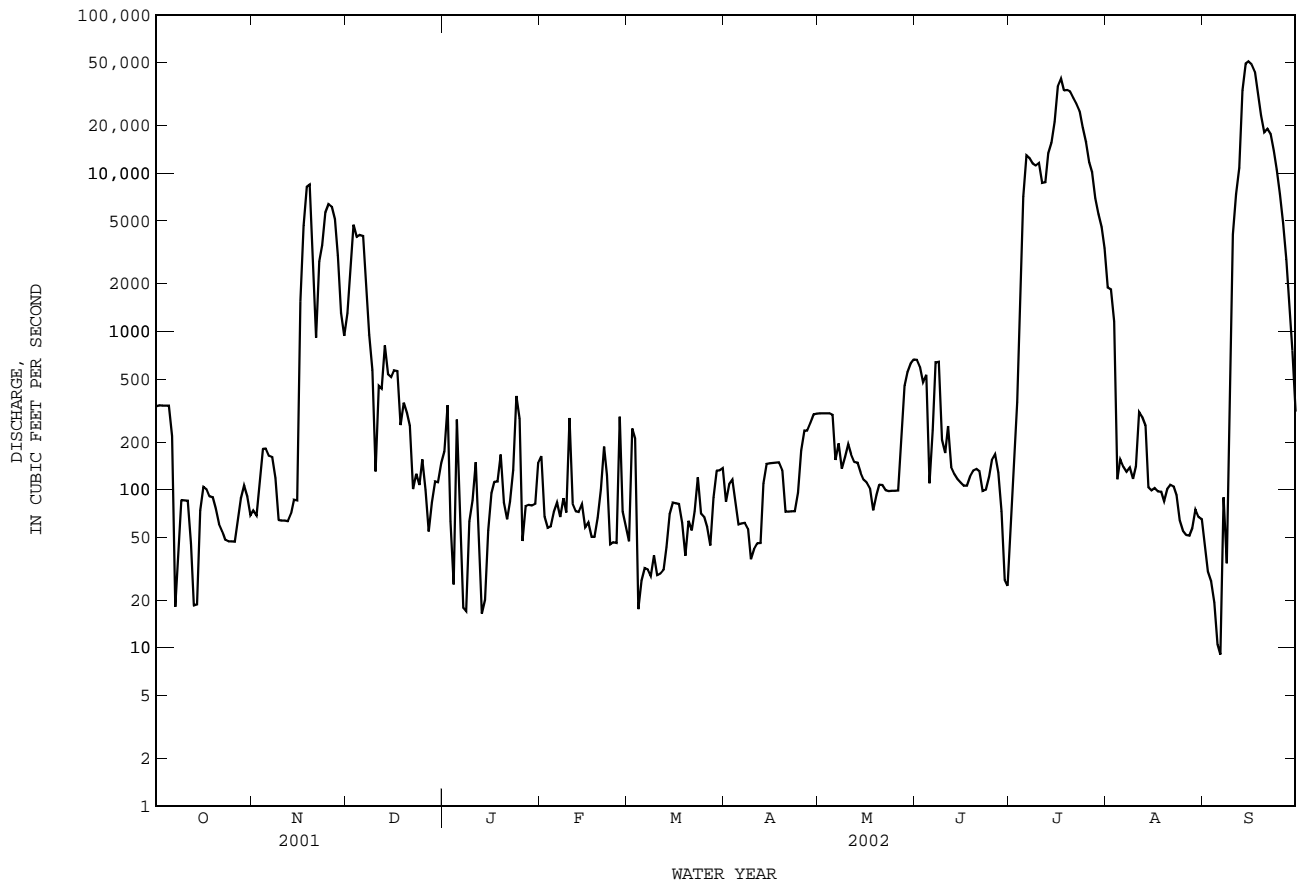
	MEAN	1198	447.6	209.9	288.5	319.9	273.9	421.3	1156	1237	1036	507.2	1654
MAX	14850	4552	1871	4994	5165	4377	4639	10500	8204	15180	10050	24950	
(WY)	1972	1977	1977	1958	1958	1958	1977	1941	1987	2002	1971	1967	
MIN	55.3	31.0	27.9	28.1	24.3	31.0	37.3	39.3	43.7	67.0	41.6	44.0	
(WY)	1953	1940	1940	1940	1942	1948	1948	1948	1948	1951	1943	1945	

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1939 - 2002

ANNUAL TOTAL	130139	1001069.0	
ANNUAL MEAN	356.5	2743	731.1
HIGHEST ANNUAL MEAN			2743
LOWEST ANNUAL MEAN			104
HIGHEST DAILY MEAN	8460	Nov 19	50800
LOWEST DAILY MEAN	18	Oct 7	9.0
ANNUAL SEVEN-DAY MINIMUM	52	Oct 21	29
MAXIMUM PEAK FLOW			53900
MAXIMUM PEAK STAGE			39.23
ANNUAL RUNOFF (AC-FT)	258100		1986000
10 PERCENT EXCEEDS	340		8290
50 PERCENT EXCEEDS	110		119
90 PERCENT EXCEEDS	74		46

i From indirect measurement of peak flow.
a From floodmark.

08211000 Nueces River near Mathis, TX--Continued



NUECES RIVER BASIN

08211200 Nueces River at Bluntzer, TX
(Partial-record station)

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.--Jan. 1966 to Feb. 1967, Mar. 1992 to current year (daily mean discharges below 2,950 ft³/s). Prior to Oct. 1994, published as "above Calallen".

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Prior to Mar. 27, 1992, at same site at datum 6.04 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Since installation of gage in Jan. 1966, at least 10% of contributing drainage area has been regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 32.22 ft, Sept. 16, 2002; minimum discharge, 0.00 ft³/s, on several days, gage height, 6.39 ft.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 32.22 ft, Sept. 16; minimum discharge, 0.00 ft³/s, on several days, gage height, 6.39 ft.

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	326	80	1310	144	176	65	141	341	657	6.6	1940	50
2	330	84	1650	242	134	85	103	341	663	54	1500	34
3	335	78	---	280	74	309	134	343	537	231	1300	19
4	337	137	---	97	66	157	124	343	583	480	562	21
5	339	187	---	65	68	42	90	344	433	1390	145	13
6	353	190	---	284	83	46	75	304	201	---	144	3.4
7	230	178	2510	86	76	48	73	202	402	---	134	24
8	70	175	1740	54	70	45	71	229	603	---	123	54
9	63	125	1240	50	86	43	61	153	583	---	117	43
10	105	82	644	94	137	48	44	195	244	---	105	1080
11	107	79	357	128	220	42	48	214	250	---	126	---
12	110	79	480	131	91	42	51	180	258	---	131	---
13	76	78	533	77	74	44	58	165	159	---	136	---
14	46	85	748	48	86	57	133	161	123	---	121	---
15	44	104	577	47	75	79	155	131	114	---	91	---
16	86	121	534	78	66	85	164	120	103	---	85	---
17	114	---	633	110	61	87	168	115	99	---	81	---
18	115	---	460	118	56	87	169	107	97	---	79	---
19	110	---	356	122	56	62	171	45	116	---	75	---
20	107	---	375	171	77	53	133	45	122	---	74	---
21	91	1880	344	90	101	65	87	102	129	---	79	---
22	79	2170	246	74	208	73	81	104	113	---	78	---
23	72	---	158	111	97	83	79	95	89	---	76	---
24	65	---	158	151	57	121	78	93	85	---	66	---
25	63	---	157	432	56	76	134	94	123	---	53	---
26	61	---	165	212	112	80	206	96	153	---	46	---
27	62	---	118	80	232	55	282	99	172	---	43	---
28	74	---	91	90	92	58	278	315	113	---	40	2370
29	98	2270	106	89	---	120	316	475	56	---	52	1680
30	111	1470	156	87	---	141	337	549	17	---	58	855
31	96	---	156	90	---	151	---	626	---	2640	54	---
TOTAL	4275	---	---	3932	2787	2549	4044	6726	7397	---	7714	---
MEAN	137.9	---	---	126.8	99.54	82.23	134.8	217.0	246.6	---	248.8	---
MAX	353	---	---	432	232	309	337	626	663	---	1940	---
MIN	44	---	---	47	56	42	44	45	17	---	40	---
AC-FT	8480	---	---	7800	5530	5060	8020	13340	14670	---	15300	---

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NUECES RIVER BASIN

08211500 Nueces River at Calallen, TX

LOCATION.--Lat 27°52'58", long 97°37'30", Nueces County, Hydrologic Unit 12110111, below the Cunningham pumping station in Corpus Christi, 200 ft upstream from Calallen Dam, 1.0 mi northwest of Calallen, about 0.4 mi upstream from bridge on Interstate Highway 37, about 7.0 mi upstream from Nueces Bay, and about 0.5 mi upstream from Missouri-Pacific Railroad bridge.

DRAINAGE AREA.--16,920 mi².

PERIOD OF RECORD.--Oct. 1983 to Sept. 1989 (maximum annual gage height and discharge). Oct. 1989 to Sept. 1999 (daily mean discharges below base discharge). Oct. 1999 to current year (daily mean discharge).

REVISED RECORDS.--WSP 1312: Data Aug. 1915 to Mar. 1919 unreliable and should not be used.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 0.84 ft above NGVD of 1929. Prior to June 15, 2000, water-stage recorder at site 0.5 mi upstream from Calallen Dam at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Since installation of gage in Oct. 1983, at least 10% of contributing drainage area has been regulated. There are numerous diversions above station for agricultural, municipal, and industrial supply. No flow at times.

DISCHARGE FROM THE DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	208	0.00	2830	62	0.60	20	22	145	678	0.37	5410	40
2	213	0.00	2940	89	31	9.8	4.1	141	697	0.00	4130	35
3	218	0.00	4070	209	12	175	15	168	551	14	3510	38
4	224	1.4	5410	54	2.3	160	27	124	504	284	2290	14
5	268	12	5890	6.3	0.08	12	17	128	440	1510	690	12
6	368	2.5	5870	124	0.00	2.2	3.8	117	94	2900	270	41
7	231	2.5	5870	59	0.00	2.2	0.49	33	158	4440	164	23
8	50	0.33	4910	7.3	0.00	1.0	13	14	596	7590	118	72
9	9.9	0.00	3180	0.00	0.00	0.0	3.2	2.4	643	12600	135	90
10	0.03	0.00	1560	0.00	0.00	0.0	0.00	0.00	175	13500	151	528
11	0.95	0.72	542	5.2	77	0.0	0.00	0.32	61	13700	143	3200
12	11	1.3	639	51	37	0.00	0.00	11	90	13600	267	4710
13	19	0.00	697	21	2.4	0.00	0.00	0.54	19	11500	278	6880
14	3.7	0.00	1200	2.2	0.00	0.00	0.00	4.0	3.6	12600	270	22600
15	0.00	0.02	911	0.00	3.6	0.00	0.00	13	6.8	17700	182	42500
16	0.00	765	791	0.00	2.6	0.00	0.0	1.4	7.6	22700	86	45800
17	0.00	3320	936	0.00	0.00	0.00	0.59	0.81	2.7	32500	73	45000
18	2.7	4170	738	16	0.00	0.53	0.03	15	0.06	37300	76	41400
19	3.6	5560	340	28	0.00	4.5	8.8	9.4	0.00	34000	64	34800
20	0.62	6930	384	57	0.00	1.2	22	0.03	0.00	33700	56	28800
21	6.2	6820	327	34	0.00	0.00	4.8	0.00	0.00	33400	68	24100
22	6.6	4360	246	3.0	7.4	0.00	0.00	0.00	8.4	31800	63	22700
23	1.0	4080	95	0.00	30	0.00	0.00	0.00	1.00	30200	60	23000
24	0.00	4470	71	0.00	7.8	2.0	0.00	0.00	0.00	28400	60	20000
25	0.00	5650	57	235	1.8	2.7	0.00	0.00	0.00	24300	40	15900
26	0.00	6490	97	196	0.00	0.03	23	0.08	0.00	20800	20	13400
27	0.00	6860	57	17	85	0.00	77	0.03	3.6	17000	2.7	10100
28	0.00	7000	12	0.74	49	0.00	88	44	29	14600	0.07	6380
29	0.00	6130	3.9	0.00	---	0.00	113	334	15	12400	2.2	4110
30	0.00	4300	50	0.00	---	7.6	148	553	7.2	9280	7.5	2300
31	0.00	---	73	0.00	---	47	---	656	---	6850	27	---
TOTAL	1845.30	76925.77	50796.9	1276.74	349.58	447.76	590.81	2515.01	4790.96	501168.37	18713.47	418573
MEAN	59.53	2564	1639	41.19	12.48	14.44	19.69	81.13	159.7	16170	603.7	13950
MAX	368	7000	5890	235	85	175	148	656	697	37300	5410	45800
MIN	0.00	0.00	3.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	12
AC-FT	3660	152600	100800	2530	693	888	1170	4990	9500	994100	37120	830200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

	MEAN	38.60	894.0	556.3	36.95	20.11	22.65	12.45	31.05	58.75	5392	211.0	4683
MAX	59.5	2564	1639	65.1	27.7	48.8	19.7	81.1	160	16170	604	13950	
(WY)	2002	2002	2002	2001	2001	2001	2002	2002	2002	2002	2002	2002	2002
MIN	4.45	4.33	10.6	4.55	12.5	4.67	4.67	4.64	1.59	2.90	4.52	4.46	
(WY)	2000	2000	2000	2000	2002	2000	2000	2000	2001	2001	2000	2000	2000

SUMMARY STATISTICS

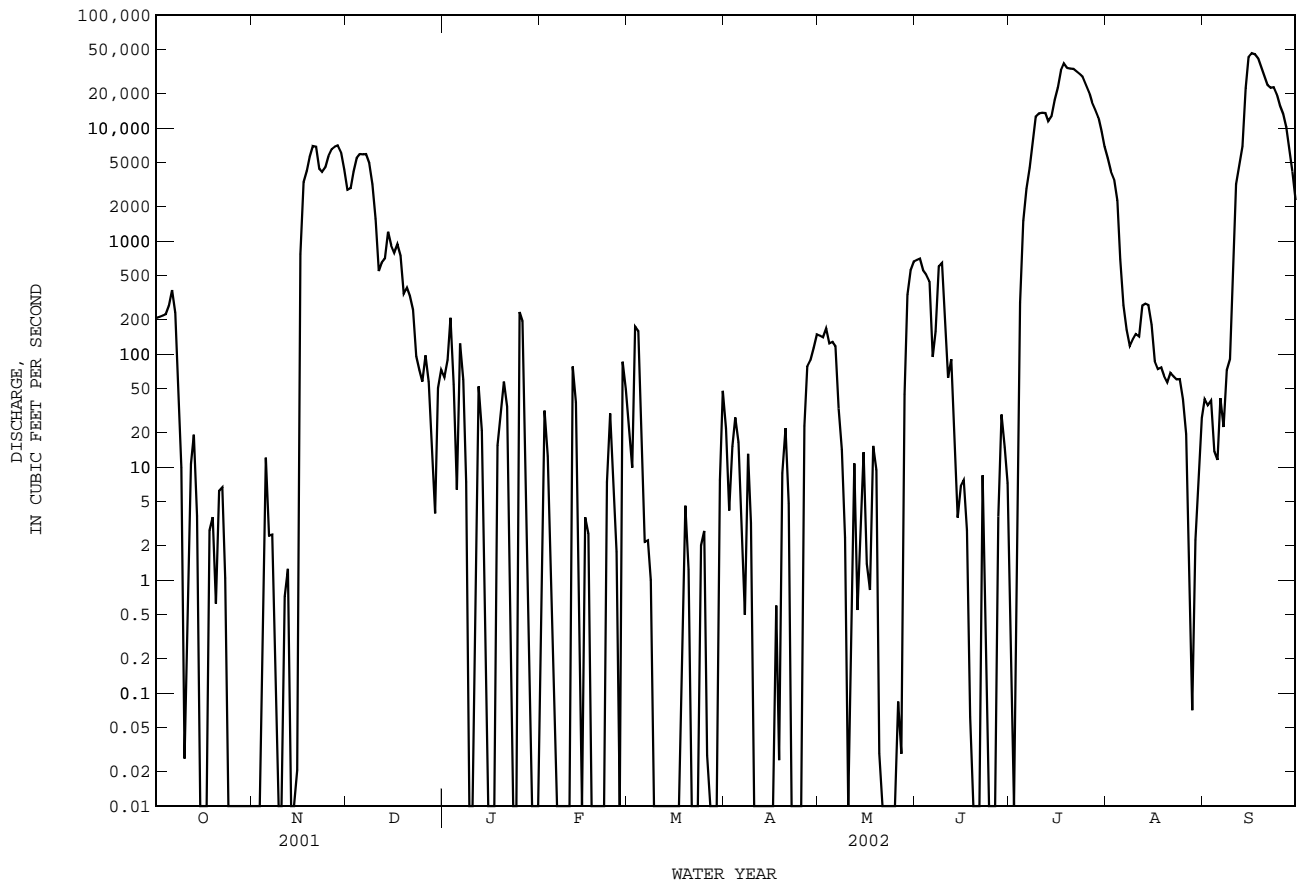
FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 2000 - 2002

ANNUAL TOTAL	138166.83	1077993.67	
ANNUAL MEAN	378.5	2953	
HIGHEST ANNUAL MEAN		1496	
LOWEST ANNUAL MEAN		2953	2002
HIGHEST DAILY MEAN	7000	Nov 28	45800
LOWEST DAILY MEAN	0.00	Feb 19	0.00
ANNUAL SEVEN-DAY MINIMUM	0.00	May 11	0.00
MAXIMUM PEAK FLOW			49000
MAXIMUM PEAK STAGE			13.21
ANNUAL RUNOFF (AC-FT)	274100	2138000	1084000
10 PERCENT EXCEEDS	447	8270	2220
50 PERCENT EXCEEDS	9.7	27	14
90 PERCENT EXCEEDS	0.00	0.00	0.00

08211500 Nueces River at Calallen, TX--Continued



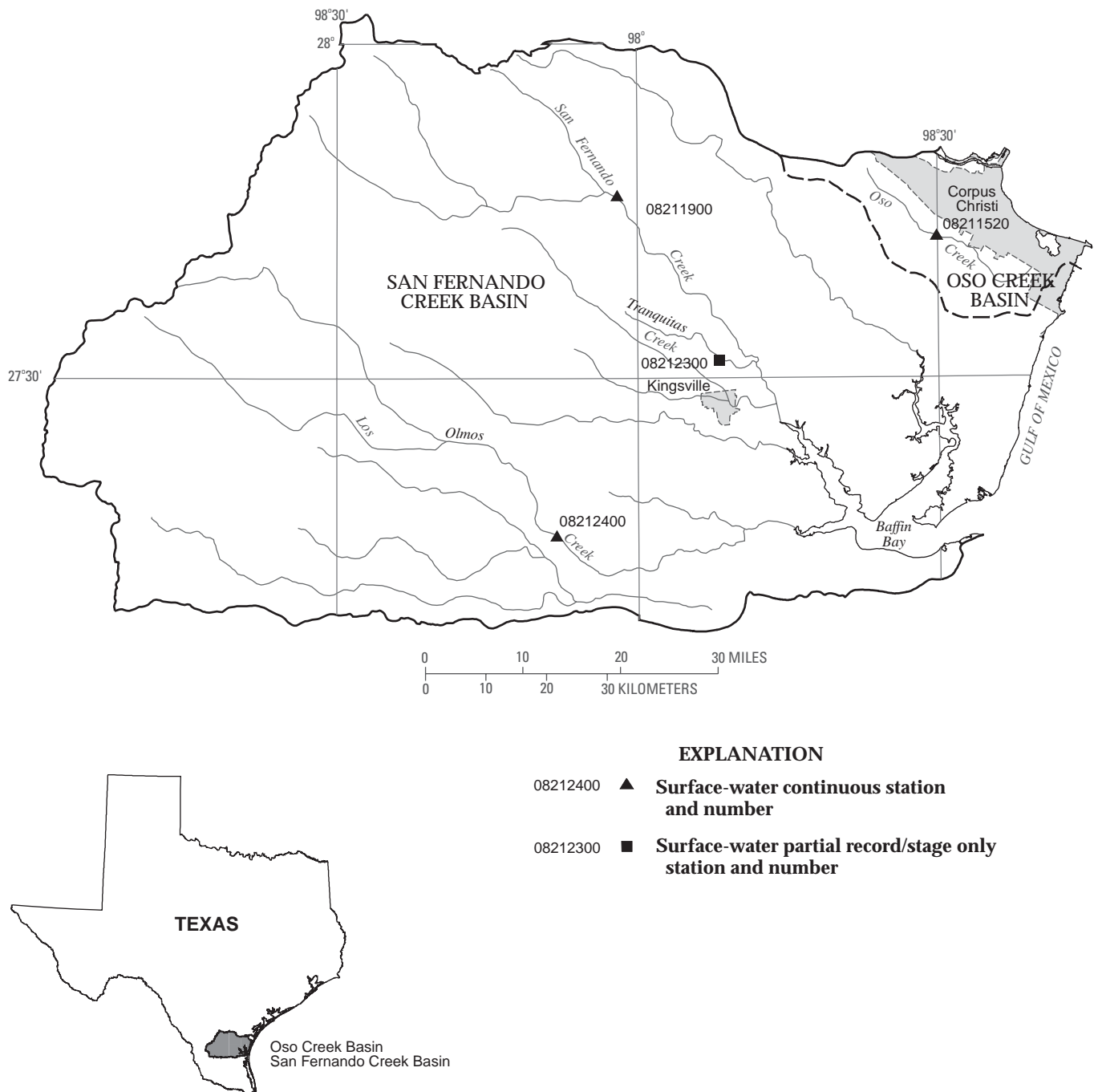


Figure 8.--Map showing location of gaging stations in the Oso Creek and San Fernando Creek Basins

08211520	Oso Creek at Corpus Christi, TX	322
08211900	San Fernando Creek at Alice, TX	324
08212300	Tranquitas Creek at Kingsville, TX	373
08212400	Los Olmos Creek near Falfurias, TX	326

OSO CREEK BASIN

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.--Sept. 1972 to current year.

Water-quality records.--Chemical data: July 1972 to Aug. 1988. Biochemical data: July 1972 to Aug. 1988. Pesticide data: July 1972 to July 1981.

GAGE.--Water-stage recorder. Datum of gage is 1.91 ft below NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. 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.

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

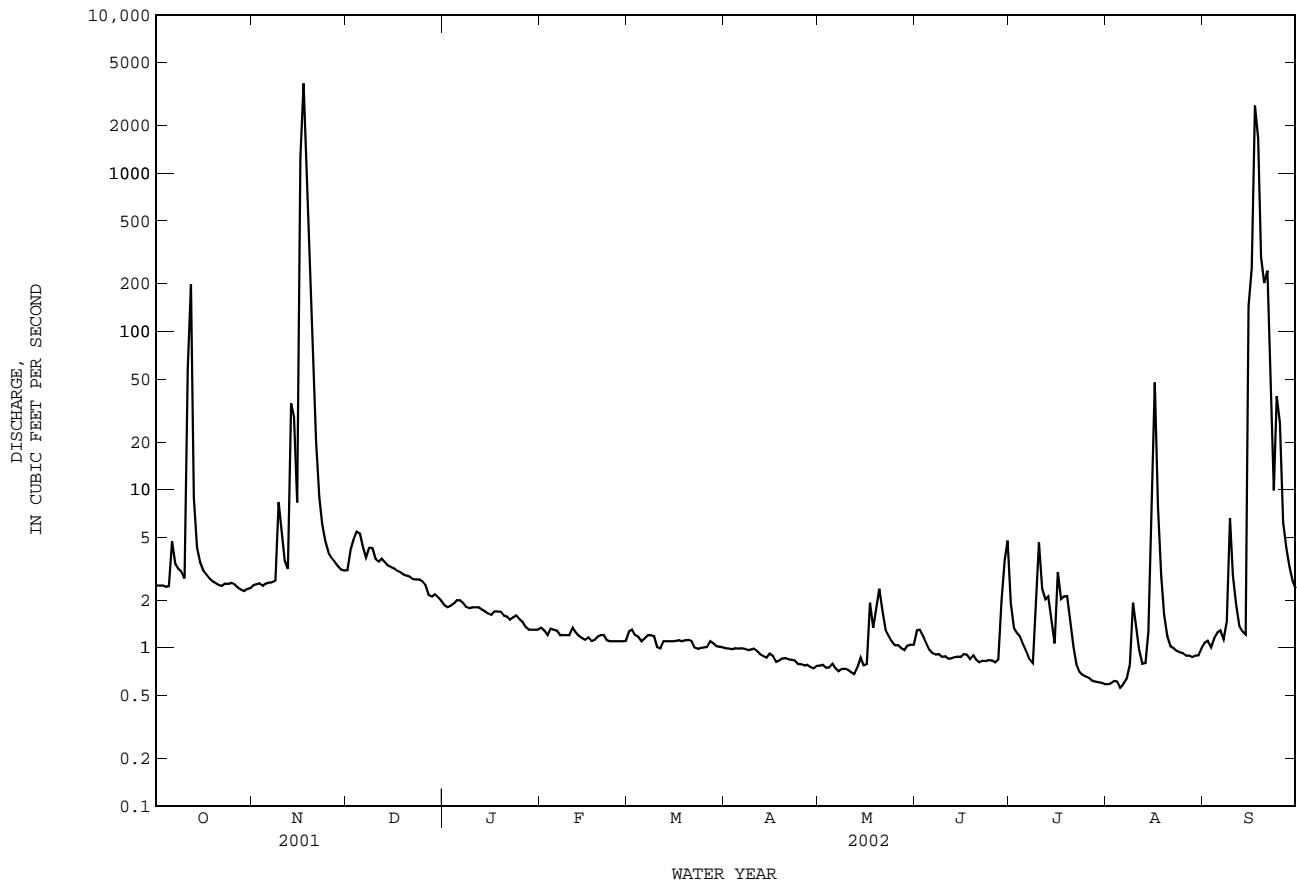
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	2.5	3.1	1.9	1.3	1.3	0.99	0.77	1.3	1.9	0.59	1.1
2	2.5	2.5	4.2	1.8	1.3	1.3	0.99	0.78	1.3	1.3	0.60	1.1
3	2.5	2.6	4.8	1.8	1.2	1.2	0.98	0.75	1.2	1.2	0.62	1.0
4	2.4	2.5	5.4	1.9	1.3	1.2	0.99	0.75	1.1	1.2	0.61	1.1
5	2.5	2.5	5.3	2.0	1.3	1.1	0.99	0.80	0.97	1.0	0.56	1.2
6	4.7	2.6	4.3	2.0	1.3	1.1	0.99	0.74	0.92	0.95	0.59	1.3
7	3.4	2.6	3.7	1.9	1.2	1.2	0.98	0.71	0.90	0.84	0.63	1.1
8	3.2	2.7	4.3	1.8	1.2	1.2	0.97	0.73	0.91	0.80	0.78	1.5
9	3.0	8.3	4.3	1.8	1.2	1.2	0.97	0.74	0.87	1.6	1.9	6.6
10	2.7	5.7	3.6	1.8	1.2	1.0	0.99	0.72	0.88	4.6	1.4	2.9
11	58	3.6	3.5	1.8	1.3	0.99	0.95	0.70	0.86	2.4	0.97	1.9
12	198	3.1	3.7	1.8	1.2	1.1	0.91	0.68	0.85	2.0	0.80	1.4
13	8.9	35	3.5	1.7	1.2	1.1	0.88	0.75	0.87	2.1	0.80	1.3
14	4.3	29	3.3	1.7	1.2	1.1	0.86	0.86	0.88	1.5	1.3	1.2
15	3.5	8.3	3.2	1.6	1.1	1.1	0.92	0.77	0.88	1.1	8.7	144
16	3.1	1260	3.2	1.6	1.2	1.1	0.89	0.79	0.91	3.0	48	252
17	2.9	3680	3.1	1.7	1.1	1.1	0.82	1.9	0.90	2.0	7.7	2680
18	2.7	1210	3.0	1.7	1.1	1.1	0.83	1.3	0.85	2.1	2.9	1660
19	2.6	380	2.9	1.7	1.2	1.1	0.86	1.8	0.90	2.1	1.6	294
20	2.6	90	2.9	1.6	1.2	1.1	0.86	2.4	0.83	1.5	1.2	202
21	2.5	20	2.8	1.6	1.2	1.1	0.85	1.7	0.81	1.0	1.0	242
22	2.5	9.0	2.7	1.5	1.1	1.0	0.84	1.3	0.83	0.79	0.99	35
23	2.5	6.1	2.7	1.6	1.1	0.99	0.83	1.2	0.82	0.70	0.96	9.9
24	2.5	4.7	2.7	1.6	1.1	1.00	0.79	1.1	0.84	0.67	0.94	39
25	2.6	4.0	2.6	1.5	1.1	1.0	0.79	1.0	0.83	0.66	0.93	26
26	2.5	3.7	2.5	1.5	1.1	1.0	0.77	1.0	0.81	0.65	0.89	6.2
27	2.4	3.5	2.2	1.4	1.1	1.1	0.78	0.99	0.84	0.62	0.89	4.3
28	2.3	3.3	2.1	1.3	1.1	1.1	0.76	0.97	2.0	0.61	0.87	3.2
29	2.3	3.1	2.2	1.3	---	1.0	0.74	1.0	3.6	0.61	0.89	2.7
30	2.3	3.1	2.1	1.3	---	1.0	0.77	1.0	4.8	0.60	0.90	2.4
31	2.4	---	2.0	1.3	---	1.0	---	1.0	---	0.59	1.00	---
TOTAL	342.8	6794.0	101.9	51.5	33.2	33.98	26.54	31.70	35.26	42.69	92.51	5627.4
MEAN	11.06	226.5	3.287	1.661	1.186	1.096	0.885	1.023	1.175	1.377	2.984	187.6
MAX	198	3680	5.4	2.0	1.3	1.3	0.99	2.4	4.8	4.6	48	2680
MIN	2.3	2.5	2.0	1.3	1.1	0.99	0.74	0.68	0.81	0.59	0.56	1.0
AC-FT	680	13480	202	102	66	67	53	63	70	85	183	11160

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2002, BY WATER YEAR (WY)

	MEAN	67.23	28.45	13.36	11.30	18.54	16.62	19.05	28.62	48.21	21.16	25.93	49.86
MAX	477	226	181	130	238	128	176	185	379	339	454	228	
(WY)	1998	2002	1992	1984	1982	1995	1997	1993	1993	1976	1980	1979	
MIN	1.26	1.40	1.15	1.33	1.19	0.89	0.88	1.02	1.09	0.86	1.07	1.56	
(WY)	1991	1994	2000	2000	2002	1988	2002	2002	1998	1996	1997	2000	

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1972 - 2002	
ANNUAL TOTAL	10764.43		13213.48			
ANNUAL MEAN	29.49		36.20		29.03	
HIGHEST ANNUAL MEAN					54.3	
LOWEST ANNUAL MEAN					3.03	
HIGHEST DAILY MEAN	3680		3680		6160	
LOWEST DAILY MEAN	0.14		0.56		0.14	
ANNUAL SEVEN-DAY MINIMUM	0.15		0.59		0.15	
MAXIMUM PEAK FLOW			4720		12100	
MAXIMUM PEAK STAGE			25.81		29.37	
INSTANTANEOUS LOW FLOW					0.13	
ANNUAL RUNOFF (AC-FT)	21350		26210		21030	
10 PERCENT EXCEEDS	8.3		4.7		17	
50 PERCENT EXCEEDS	2.2		1.3		2.2	
90 PERCENT EXCEEDS	0.25		0.79		1.1	

08211520 Oso Creek at Corpus Christi, TX--Continued



SAN FERNANDO CREEK

08211900 San Fernando Creek at Alice, TX

LOCATION.--Lat 27°46'20", long 98°02'00", Jim Wells County, Hydrologic Unit 12110204, on left bank 34 ft downstream from downstream bridge of two bridges on State Highways 44 and 359, 0.5 mi downstream from confluence of San Diego and Chiltipin Creeks, 2.3 mi upstream from head of Pintas Creek, and 2.7 mi northeast of Alice.

DRAINAGE AREA.--507 mi².

PERIOD OF RECORD.--Dec. 1964 to Mar. 1987, Apr. 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 160.05 ft above NGVD of 1929. Prior to Mar. 1987 at datum 1.63 ft higher at same site. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. San Diego Creek joins Chiltipin Creek below Lake Alice to form San Fernando Creek. Since installation of gage in Dec. 1964, at least 10% of contributing drainage area has been regulated. Flow is affected at times by discharge from the flood-detention pools of ten floodwater-retarding structures. These structures control runoff from 170 mi² in the San Diego-Rosita drainage basins. Records furnished by city of Alice show that sewage effluent is discharged into San Diego Creek 1.3 mi upstream, which comprises most of the low flow.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.97	0.71	184	1.1	0.58	1.1	1.3	0.83	1.2	3.2	105	1.7
2	0.81	0.68	410	0.96	1.2	1.6	0.68	0.46	0.91	230	99	1.6
3	1.1	1.0	283	0.53	1.2	1.6	1.1	0.75	0.78	59	63	1.1
4	0.86	1.1	111	1.2	1.1	1.5	1.1	0.71	1.4	21	28	1.2
5	1.1	0.78	51	1.3	1.1	1.6	0.98	0.88	1.2	3990	17	1.6
6	1.3	0.82	28	1.3	1.3	1.2	1.0	0.73	1.2	2820	9.4	1.5
7	1.1	0.82	17	1.1	1.1	1.1	1.6	1.0	1.2	1270	5.9	1.4
8	0.94	0.73	40	1.0	1.3	1.0	1.2	0.95	1.5	597	4.8	1.7
9	0.81	0.77	17	1.3	1.3	1.6	1.1	0.87	1.5	389	4.3	635
10	0.88	0.85	4.5	1.3	1.3	1.5	1.6	0.86	1.2	367	3.5	58
11	0.96	0.83	4.0	1.3	0.94	1.0	1.4	1.2	1.2	261	2.5	8.3
12	1.1	0.81	3.8	1.2	0.98	1.3	1.0	1.1	1.3	113	2.1	2.8
13	1.2	0.70	13	1.2	0.92	1.2	0.45	0.91	0.57	62	1.8	1.5
14	1.1	260	3.4	1.3	1.3	1.2	0.74	0.94	0.69	38	1.7	1.0
15	0.87	1890	2.1	1.3	1.2	1.3	1.7	1.2	1.4	33	1.4	88
16	0.80	2420	2.0	1.3	1.2	1.8	1.3	1.3	1.4	569	1.6	392
17	0.75	2740	3.4	1.1	1.3	1.2	1.0	1.7	1.1	1450	1.1	680
18	0.79	1260	1.9	0.50	1.1	1.6	1.0	1.4	0.81	1200	1.4	158
19	0.92	1210	1.3	1.1	1.1	1.2	1.1	1.2	1.5	1060	1.0	57
20	1.1	1050	1.5	1.0	0.55	1.1	1.4	0.92	1.2	902	0.66	43
21	1.1	807	1.5	0.85	0.95	1.2	1.4	0.85	0.49	722	1.6	11
22	1.2	668	1.4	0.87	1.00	1.9	1.1	0.90	1.2	516	1.7	6.6
23	1.1	516	1.4	1.1	1.4	2.1	1.1	0.45	1.3	353	1.1	4.9
24	0.87	417	1.4	1.0	1.5	2.2	0.46	0.83	1.1	258	0.50	3.8
25	0.44	345	1.3	1.3	1.4	2.4	0.61	1.3	0.58	206	0.83	2.6
26	0.74	289	1.3	1.2	0.99	2.3	0.83	1.2	0.92	174	1.3	1.9
27	1.1	268	1.3	1.2	1.6	1.9	1.0	1.3	1.4	151	1.5	1.3
28	1.1	261	1.3	1.3	1.1	2.1	1.1	1.00	1.5	138	1.3	1.1
29	0.75	172	0.83	1.3	---	2.1	0.89	1.5	1.4	127	0.61	1.1
30	0.76	175	0.70	1.3	---	1.9	0.88	1.4	1.7	118	0.62	0.62
31	0.81	---	1.00	0.95	---	1.7	---	0.95	---	110	1.5	---
TOTAL	29.43	14758.60	1195.33	34.76	32.01	48.5	32.12	31.59	34.85	18307.2	367.72	2171.32
MEAN	0.949	492.0	38.56	1.121	1.143	1.565	1.071	1.019	1.162	590.6	11.86	72.38
MAX	1.3	2740	410	1.3	1.6	2.4	1.7	1.7	1.7	3990	105	680
MIN	0.44	0.68	0.70	0.50	0.55	1.0	0.45	0.45	0.49	3.2	0.50	0.62
AC-FT	58	29270	2370	69	63	96	64	63	69	36310	729	4310

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002h, BY WATER YEAR (WY)

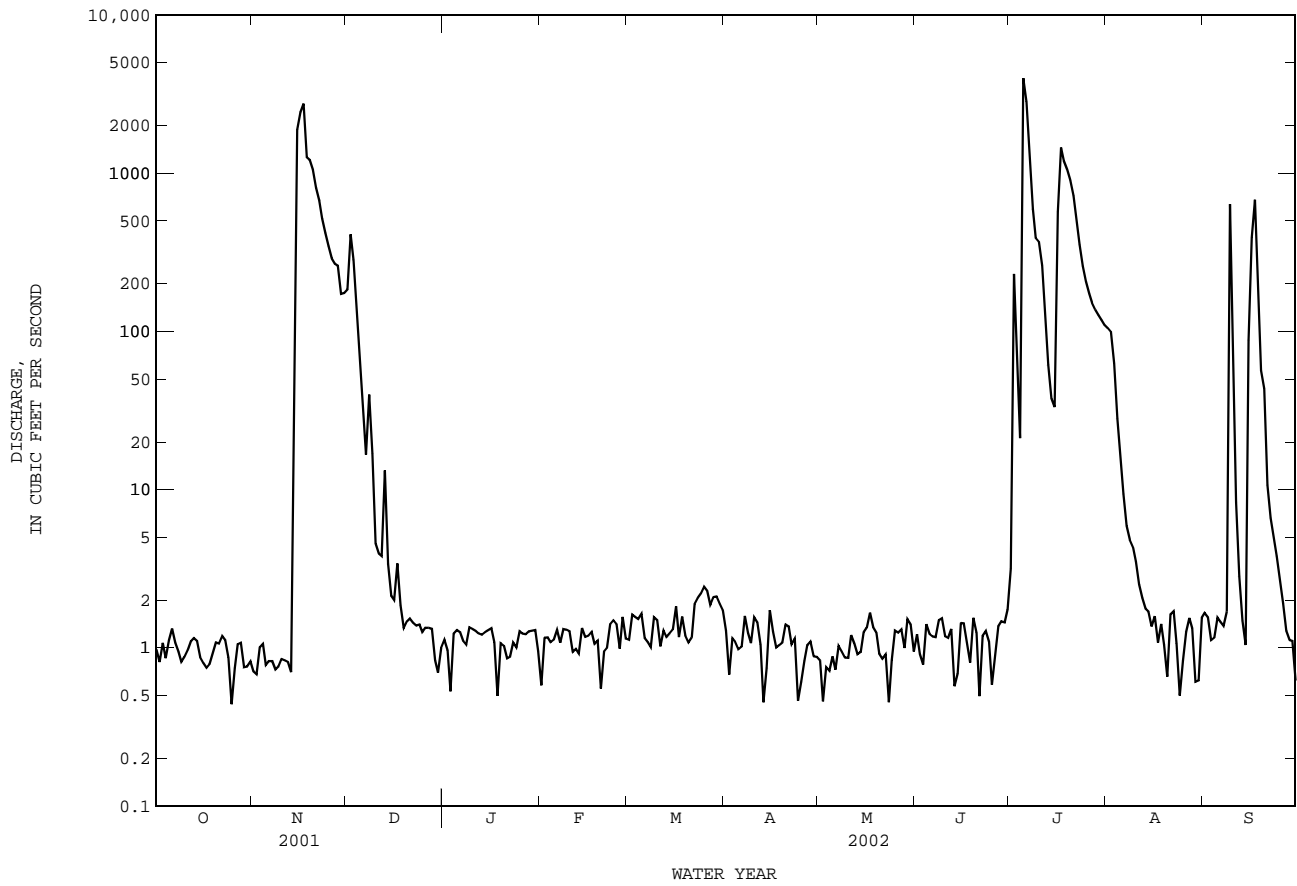
	MEAN	41.93	23.50	4.051	2.794	3.115	3.250	7.058	15.14	8.636	32.76	30.73	111.2
MAX	827	492	38.6	17.0	18.5	28.6	93.7	96.4	59.8	591	403	1419	
(WY)	1972	2002	2002	1980	1969	1965	1985	1985	1981	2002	1980	1971	
MIN	0.84	0.95	0.93	0.92	0.84	0.94	0.72	1.02	0.79	0.63	0.69	0.70	
(WY)	2001	2000	2000	2000	2000	2000	2000	2002	2001	2000	2000	2000	

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1965 - 2002h

ANNUAL TOTAL	25168.09	37043.43	
ANNUAL MEAN	68.95	101.5	25.04
HIGHEST ANNUAL MEAN			126
LOWEST ANNUAL MEAN			0.94
HIGHEST DAILY MEAN	4290	3990	22200
LOWEST DAILY MEAN	0.09	0.44	0.09
ANNUAL SEVEN-DAY MINIMUM	0.40	0.75	0.39
MAXIMUM PEAK FLOW		8200	26800
MAXIMUM PEAK STAGE		14.35	16.51
INSTANTANEOUS LOW FLOW		0.27	0.09
ANNUAL RUNOFF (AC-FT)	49920	73480	18140
10 PERCENT EXCEEDS	9.2	241	4.3
50 PERCENT EXCEEDS	1.1	1.3	1.9
90 PERCENT EXCEEDS	0.57	0.79	1.0

h See PERIOD OF RECORD paragraph.

08211900 San Fernando Creek at Alice, TX--Continued



SAN FERNANDO CREEK BASIN

08212400 Los Olmos Creek near Falfurrias, TX

LOCATION.--Lat 27°15'51", long 98°08'08", Brooks County, Hydrologic Unit 12110205, at downstream side of bridge on U.S. Highway 281 and 2.6 mi north of Falfurrias.

DRAINAGE AREA.--480 mi², of which 4.5 mi² probably is noncontributing.

PERIOD OF RECORD.--Jan. 1967 to Sept. 1983, Mar. 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 116.58 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1929, 15.0 ft Sept. 13, 1951, from information by Texas Department of Transportation.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.5	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.7	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.0	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.07
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
21	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.55	0.00	0.38
MEAN	0.000	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.147	0.000	0.013
MAX	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30	0.00	0.18
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	2.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	71	0.00	0.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002h, BY WATER YEAR (WY)

MEAN	1.503	0.361	0.122	0.121	0.116	3.316	0.312	10.47	4.991	3.588	7.725	49.08
MAX	8.95	4.89	0.75	0.69	0.67	50.8	3.31	146	52.8	36.1	62.5	491
(WY)	1977	1977	1970	1970	1970	1974	1979	1982	1973	1976	1980	1967
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1973	1971	1971	1972	1973	1971	1971	1971	1980	1972	1972	1972

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

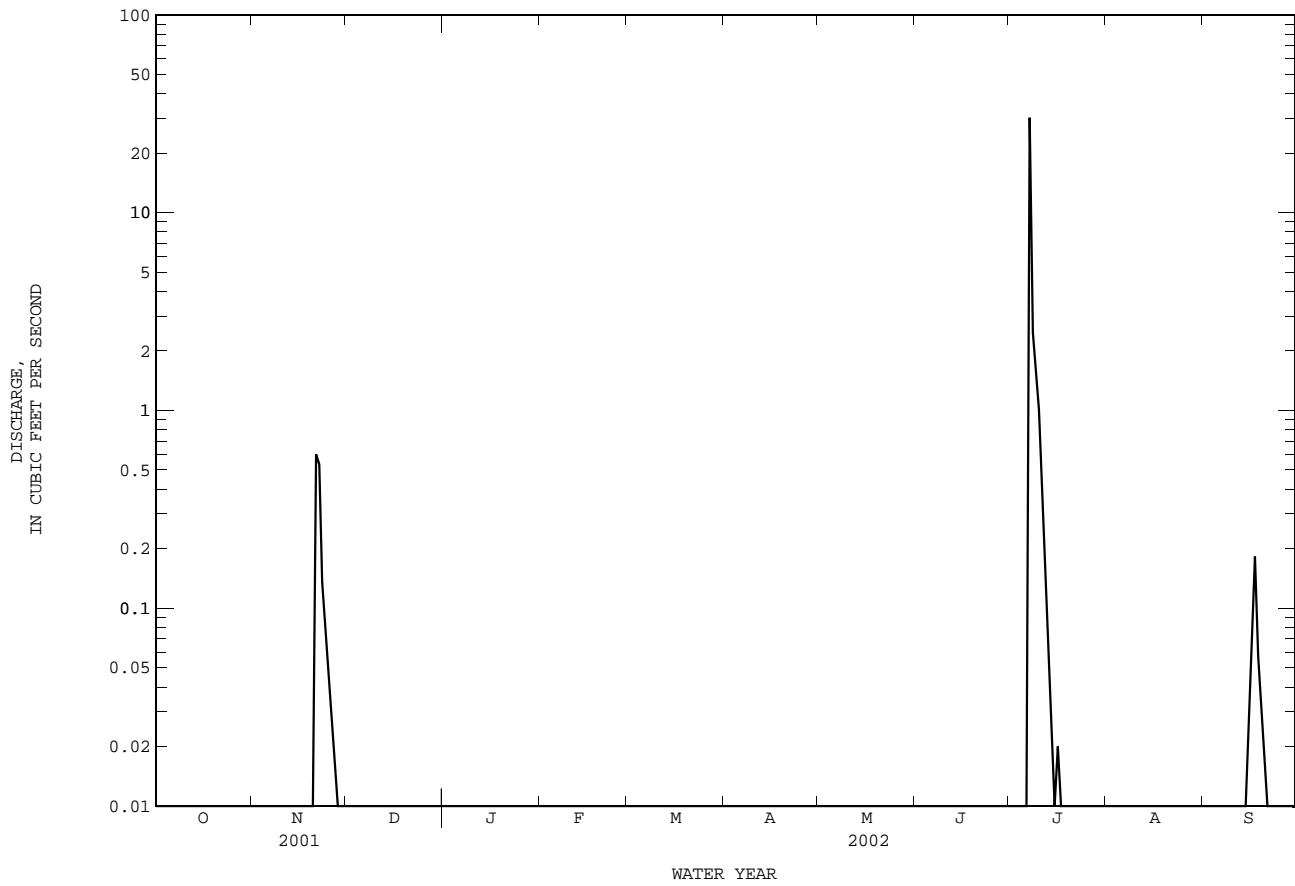
FOR 2002 WATER YEAR

WATER YEARS 1967 - 2002h

ANNUAL TOTAL	1633.30	37.36	7.004
ANNUAL MEAN	4.475	0.102	56.6
HIGHEST ANNUAL MEAN			0.000
LOWEST ANNUAL MEAN			0.000
HIGHEST DAILY MEAN	806 Sep 3	30 Jul 7	3790 Sep 14 1971
LOWEST DAILY MEAN	0.00 Jan 1	0.00 Oct 1	0.00 Aug 10 1970
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 1	0.00 Sep 4 1970
MAXIMUM PEAK FLOW		82 Jul 7	5300 Sep 13 1971
MAXIMUM PEAK STAGE		4.26 Jul 7	12.66 Sep 13 1971
ANNUAL RUNOFF (AC-FT)	3240	74	5070
10 PERCENT EXCEEDS	0.00	0.00	0.65
50 PERCENT EXCEEDS	0.00	0.00	0.00
90 PERCENT EXCEEDS	0.00	0.00	0.00

h See PERIOD OF RECORD paragraph.

08212400 Los Olmos Creek near Falfurias, TX--Continued



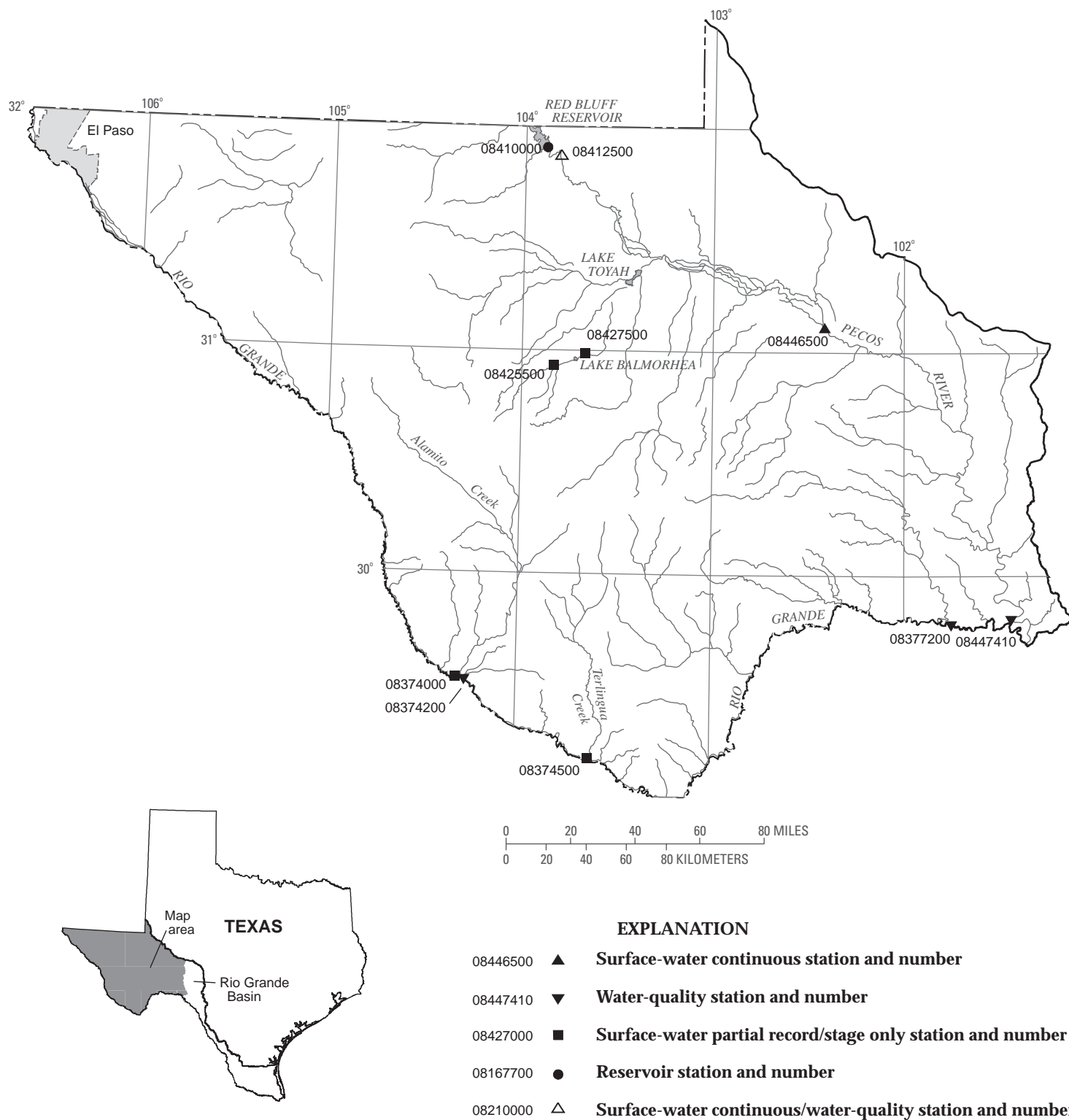


Figure 9.--Map showing location of gaging stations in the first section of the Rio Grande Basin

08374000	Alamito Creek near Presidio, TX	377
08374200	Rio Grande below Rio Conchos near Presidio, TX	330
08374500	Terlingua Creek near Terlingua, TX	377
08377200	Rio Grande at Foster Ranch near Langtry, TX	334
08410000	Red Bluff Reservoir near Orla, TX	338
08412500	Pecos River near Orla, TX	340
08425500	Phantom Lake Springs near Toyahvale, TX	371
08427500	San Solomon Springs at Toyahvale, TX	372
08446500	Pecos River near Girvin, TX	342
08447410	Pecos River near Langtry, TX	344

08374200 Rio Grande below Rio Conchos near Presidio, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°31'10", long 104°17'10", Presidio County, Hydrologic Unit 13040203, at gaging station 0.4 miles downstream from Alamito Creek and 8.9 river miles downstream from the International Highway bridge between Presidio, Texas and Ojinaga, Chihuahua.

DRAINAGE AREA.-- 66,200 mi².

PERIOD OF RECORD.--

CHEMICAL DATA: Apr. 1999 to current year.

BIOCHEMICAL DATA: Apr. 1999 to current year.

PESTICIDE DATA: Aug. 1999 to current year.

SEDIMENT DATA: Apr. 1999 to current year.

REMARKS.--Instantaneous discharges published in the table were provided directly by International Boundary and Water Commission. Records of daily mean discharge for water year 2002 are published in International Boundary and Water Commission Water Bulletins Nos. 71 and 72. Since 1999, quality assurance data for this station may be obtained from the U.S. Geological Survey Texas District office upon request.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	DIS-CHARGE INST. (CMS) (30209)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS /CM) (61726)	CARBON, INORG + ORGANIC PARTIC. TOTAL (MG/L AS C) (00694)	CARBON, INOR-GANIC, PARTIC. TOTAL (MG/L AS C) (00688)	
DEC 03...	1210	182	5.15	3270	7.8	10.0	11.8	104	60	.118	.087	7.0	.9	
JAN 28...	1140	97	2.74	3600	8.1	12.0	15.1	--	36	.094	.066	5.8	<.1	
APR 22...	1120	82	2.31	4060	7.8	23.0	10.5	123	93	.119	.085	6.0	.2	
MAY 20...	1140	52	1.48	3400	7.7	28.0	9.0	114	62	.103	.073	2.2	<.1	
JUN 03...	1300	19	.541	3560	7.8	31.0	9.5	127	--	--	--	--	--	
JUL 22...	1110	1790	50.7	1120	7.5	25.0	6.4	77	--	--	--	--	--	
30...	1040	1800	51.0	1090	7.5	26.0	7.6	92	--	--	--	--	--	
AUG 27...	1100	126	3.57	2370	7.7	27.5	7.2	90	--	--	--	--	--	
Date		NITRO-GEN, PAR TICULATE WAT FLT SUSP (MG/L AS N) (49570)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
DEC 03...	.42	330	94	93.0r	22.1r	250r	6	62	6.59	3	275	231	586	
JAN 28...	.91	660	450	186	46.3	520	9	63	11.9	2	248	207	722	
APR 22...	.67	730	540	208	50.6	581	9	63	12.2	2	233	195	904	
MAY 20...	<.02	510	--	142	36.4	435	8	65	9.43	--e	--e	--e	777	
JUN 03...	--	650	510	186	43.9	545	9	64	12.0	2	162	137	906	
JUL 22...	--	440	390	160	9.06	64.1	1	24	6.03	<1	64	52	436	
30...	--	230	150	82.1	6.40	113	3	51	6.01	<1	100	83	228	
AUG 27...	--	440	--	135	25.4	323	7	61	8.96	--e	--e	--e	496	
Date		CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
DEC 03...	568r	1.0	12.6	2140	1690	2.38	.026	2.40	.14	3.6	1.1	.57	.71	
JAN 28...	665	1.2	10.1	2420		--	<.008	--	.05	--	--	--	--	
APR 22...	692	1.1	14.7	2760		--	<.008	<.05	<.04	--	--	--	.50	
MAY 20...	539	1.7	9.67	2220		--	E.004	<.05	<.04	--	--	--	.47	
JUN 03...	518	1.3	13.4	2440		--	--	--	--	--	--	--	--	
JUL 22...	44.0	.4	10.1	828	764	--	--	--	--	--	--	--	--	
30...	102	.7	16.9	648	605	--	--	--	--	--	--	--	--	
AUG 27...	342	.8	17.5	1540	1460	--	--	--	--	--	--	--	--	

08374200 Rio Grande below Rio Conchos near Presidio, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC- ULATE- TOTAL (MG/L AS C) (00689)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)
DEC 03...	1.2	.66	.51	.48	1.47	5.3	6.1	105	214	99	2v	.15	3.7
JAN 28...	M	--	.19	.09	.285	4.1v	5.8	12.3	47	98	1	.23	4.5
APR 22...	1.2	.19	<.06	<.02	--	6.2	5.8	24.0	109	100	--	.51	3.7
MAY 20...	.64	.07	<.06	<.02	--	5.9	2.2	10.4	74	99	--	.62	2.3
JUN 03...	--	--	--	--	--	--	--	3.9	76	99	2	.60	3.5
JUL 22...	--	--	--	--	--	--	--	93800	19400	90	2	.33	1.2
30...	--	--	--	--	--	--	--	61300	12600	36	5	.37	2.8
AUG 27...	--	--	--	--	--	--	--	198	582	100	3	.54	3.8
Date	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)
DEC 03...	53	<.10	251	<.07	<.8	.46	1.9	<10	E.08	114	5.7	7.3	.20
JAN 28...	71	<.06	523	E.03	<.8	1.05	2.4	<10	E.05	223	--	13.3	2.46
APR 22...	101	<.10	582	E.05	<.8	.81	5.6	E27	E.08	219	--	15.7	8.84
MAY 20...	79	<.10	471	E.04	<.8	.80	3.7	<30	.17	164	--	11.7	1.67
JUN 03...	112	<.10	637	E.04n	<.8	1.02	4.7	<10	E.08n	202	--	12.8	3.48
JUL 22...	105	<.06	89	<.04	<.8	.47	2.9	<10	<.08	26.3	1.3	4.8	<.06
30...	46	<.06	175	E.02	<.8	.36	2.1	<10	E.04	49.6	.9	6.3	.60
AUG 27...	127	<.06	324	E.03	<.8	.54	3.4	<10	<.08	121	2.1	10.5	2.15
Date	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)
DEC 03...	E.6	<2	1570	3.4	2	2.71	<.002	<.004	<.002	<.005	<.007	<.050	<.010
JAN 28...	1.6	<1	3120	5.2	3	5.12	<.006	<.006	<.004	<.005	<.007	<.050	<.010
APR 22...	<.7	<2	3600	3.8	4	7.20	<.006	<.006	<.004	<.005	<.007	<.050	<.010
MAY 20...	1.5	<2	2480	3.0	4	5.63	<.006	<.006	<.004	<.005	<.007	<.050	<.010
JUN 03...	1.1	<2	3290	4.5	4	8.29	--	--	--	--	--	--	--
JUL 22...	3.8	<1	2440	2.2	1	1.28	--	--	--	--	--	--	--
30...	.9	<1	792	8.2	<1	3.38	--	--	--	--	--	--	--
AUG 27...	1.0	<1	2130	7.0	2	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	
	DEC 03...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	.013	<.005	<.02	<.015	<.009
	JAN 28...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009
APR 22...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	
MAY 20...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	
JUN 03...	--	--	--	--	--	--	--	--	--	--	--	--	--	
JUL 22...	--	--	--	--	--	--	--	--	--	--	--	--	--	
30...	--	--	--	--	--	--	--	--	--	--	--	--	--	
AUG 27...	--	--	--	--	--	--	--	--	--	--	--	--	--	
Date	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFO S WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	
	DEC 03...	<.005	<.003	<.004	<.035	<.027	E.003	<.006	<.002	<.007	<.003	<.007	<.006	<.002
	JAN 28...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
APR 22...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	
MAY 20...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	
JUN 03...	--	--	--	--	--	--	--	--	--	--	--	--	--	
JUL 22...	--	--	--	--	--	--	--	--	--	--	--	--	--	
30...	--	--	--	--	--	--	--	--	--	--	--	--	--	
AUG 27...	--	--	--	--	--	--	--	--	--	--	--	--	--	
Date	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	
	DEC 03...	<.010	<.011	E.01	<.010	<.011	<.02	<.004	<.011	<.02	<.034	<.02	<.005	<.002
	JAN 28...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
APR 22...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	E.01n	<.034	<.02	<.005	<.002	
MAY 20...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	
JUN 03...	--	--	--	--	--	--	--	--	--	--	--	--	--	
JUL 22...	--	--	--	--	--	--	--	--	--	--	--	--	--	
30...	--	--	--	--	--	--	--	--	--	--	--	--	--	
AUG 27...	--	--	--	--	--	--	--	--	--	--	--	--	--	

08374200 Rio Grande below Rio Conchos near Presidio, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
DEC	
03...	<.009
JAN	
28...	<.009
APR	
22...	<.009
MAY	
20...	<.009
JUN	
03...	--
JUL	
22...	--
30...	--
AUG	
27...	--

Remark codes used in this report:

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

Value qualifier codes used in this report:

n -- Below the NDV
r -- Value verified by rerun, same method
v -- Analyte detected in laboratory blank

Null value qualifier codes used in this report:

e -- Required equipment not functional/avail

RIO GRANDE BASIN

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, 12.3 mi west of 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.--

CHEMICAL DATA: Apr. 1944 to current year.

BIOCHEMICAL DATA: Oct. 1975 to Aug. 1982, Oct. 1995 to current year.

PESTICIDE DATA: July 1975 to June 1982, Oct. 1995 to current year.

SEDIMENT DATA: Oct. 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct. 1974 to Sept. 1981 (local observer).

WATER TEMPERATURE: Oct. 1974 to Sept. 1981 (local observer).

REMARKS.--Instantaneous discharges published in the table were provided directly by International Boundary and Water Commission. Records of daily mean discharge for water year 2002 are published in International Boundary and Water Commission Water Bulletins Nos. 71 and 72. Since Sept. 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,110 microsiemens/cm, Dec. 4, 1974; minimum daily, 225 microsiemens/cm, 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.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	DIS-CHARGE INST. (CMS) (30209)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS /CM) (61726)	CARBON, INORG + ORGANIC PARTIC. TOTAL (MG/L AS C) (00694)	CARBON, INOR-GANIC, PARTIC. TOTAL (MG/L AS C) (00688)
DEC 18...	1130	325	9.20	1570	8.5	12.8	9.9	98	48	.036	.027	2.5	<.1
JAN 16...	1130	364	10.3	1710	8.0	13.2	10.3	103	77	.038	.028	7.5	<.1
MAR 19...	1200	295	8.35	1360	8.1	20.3	8.0	94	46	.030	.021	1.9	<.1
APR 23...	1030	277	7.84	1000	7.9	24.6	6.9	87	59	.106	.079	2.6	<.1
MAY 08...	1330	773	21.9	1720	7.7	27.2	5.8	78	2000	.112	.083	44.1	37.8
21...	1130	349	9.88	644	8.1	20.8	7.9	92	440	.083	.061	9.6	6.1
JUN 12...	1030	773	21.9	962	7.6	27.0	4.8	64	24000	.132	.100	606	330
SEP 11...	1130	265	7.50	1000	7.9	27.6	7.2	96	340	.048	.036	10.5	2.6
Date		NITRO-GEN, PAR-TICULATE WAT FLT SUSP (MG/L AS N) (49570)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
DEC 18...	.20	340	160	91.4	27.3	186	4	54	5.90	1	215	178	314
JAN 16...	.82	330	190	83.5	27.8	209	5	58	6.71	2	164	138	330
MAR 19...	.13	320	200	82.1	27.1	161	4	52	5.54	1	144	120	277
APR 23...	.21	290	180	76.0	22.9	106	3	44	5.75	1	130	108	233
MAY 08...	1.60	470	330	139	28.5	187	4	46	8.63	1	171	142	475
21...	.39	240	59	69.2	15.8	56.3	2	33	4.82	2	216	180	113
JUN 12...	25.8	280	140	95.8	9.07	107	3	45	6.61	<1	164	135	287
SEP 11...	.57	300	160	89.9	17.2	91.5	2	40	5.40	2	159	133	239

08377200 Rio Grande at Foster Ranch near Langtry, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, DIS- SOLVED TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC DIS- SOLVED TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)
DEC 18...	223	1.1	18.5	1020	982	1.10	.005	1.11	.022	1.4	.23	.12	.15
JAN 16...	237	1.1	7.26	1040	987	--	E.002	.103	.019	1.2	1.0	.21	.23
MAR 19...	165	1.2	15.7	864	812	.51	.005	.514	E.012	.68	--	--	.14
APR 23...	100	1.2	15.5	685	630	.65	.010	.659	.026	1.2	.47	.36	.39
MAY 08...	211	1.3	18.3	1260	1160	.66	.004	.667	.047	3.7	3.0	.23	.28
21...	41.7	1.1	18.8	450	435	1.09	.010	1.10	.037	1.9	.80	.21	.25
JUN 12...	44.2	.8	15.0	686	657	--	E.002	2.13	E.011	25	--	--	.35
SEP 11...	79.3	1.0	19.5	661	629	.84	.003	.840	<.015	1.5	--	--	.13
Date	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC- ULATE TOTAL (MG/L AS C) (00689)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)
DEC 18...	.26	.049	<.004	<.007	--	1.6	2.5	77.2	88	99	<1	.16	3.3
JAN 16...	1.1	.091	E.004	<.007	--	2.6	7.4	91.4	93	97	--	--	2.9
MAR 19...	.16	.004	E.003	<.007	--	1.7	1.9	48.6	61	99	2	.23	2.6
APR 23...	.49	.060	.005	<.007	--	4.1	2.5	49.4	66	100	--	--	3.2
MAY 08...	3.0	1.28	.006	<.007	--	5.0	6.4	3880	1860	100	1	.57	2.5
21...	.84	.23	.005	<.007	--	3.0	3.5	307	326	100	1	.41	3.0
JUN 12...	23	14.5	.023	.017	.052	4.7	276	50700	24300	100	3	.38	1.6
SEP 11...	.62	.26	E.003	<.007	--	1.8	7.9	308	430	100	2	.19	2.5
Date	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM, DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM, DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)
DEC 18...	85	<.06	241	E.03	<.8	.32	1.5	<10	<.08	108	3.1	10.4	1.60
JAN 16...	--	--	269	--	--	--	--	<10	--	118	--	--	--
MAR 19...	85	<.06	329	E.02	<.8	.28	1.4	<10	E.06	109	3.8	11.0	1.01
APR 23...	--	--	202	--	--	--	--	<10	--	73.7	--	--	--
MAY 08...	162	<.06	274	.04	<.8	.37	2.6	<10	E.06	88.7	.4	13.3	2.92
21...	94	<.06	138	E.03	<.8	.27	1.2	<10	.09	48.3	2.1	8.8	.85
JUN 12...	116	<.06	154	E.02	<.8	.22	3.6	<10	<.08	37.4	.2	9.1	.32
SEP 11...	114	<.06	224	E.02	<.8	.24	1.6	<10	<.08	57.5	.9	9.1	3.81

08377200 Rio Grande at Foster Ranch near Langtry, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD RECE (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82673)
DEC 18...	1.6	<1	2130	6.0	1	4.65	<.002	<.004	<.002	<.005	<.007	<.050	<.010
JAN 16...	1.5	--	2140	5.2	--	--	<.006	<.006	<.004	<.005	<.007	<.050	<.010
MAR 19...	1.6	<1	2040	4.6	4	5.05	<.006	<.006	<.004	<.005	<.007	<.050	<.010
APR 23...	1.9	--	1840	6.1	--	--	<.006	<.006	<.004	<.005	<.007	<.050	<.010
MAY 08...	2.2	<1	2810	7.3	2	7.64	<.006	<.006	<.004	<.005	E.006n	<.050	<.010
21...	1.6	<1	1340	8.7	1	3.22	<.006	<.006	<.004	<.005	<.007	<.050	<.010
JUN 12...	1.1	<1	1540	5.9	1	5.09	<.006	<.006	<.004	<.005	<.008	<.050	<.010
SEP 11...	1.5	<1	1830	7.6	2	4.03	<.006	<.006	<.004	<.005	<.007	<.050	<.010
Date	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
DEC 18...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009
JAN 16...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009
MAR 19...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	E.002n	<.005	<.02	<.002	<.009
APR 23...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009
MAY 08...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009
21...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009
JUN 12...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009
SEP 11...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009
Date	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FLTRD 0.7 U GF, REC (UG/L) (82669)
DEC 18...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.007	<.006	<.002
JAN 16...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
MAR 19...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
APR 23...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
MAY 08...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
21...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
JUN 12...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
SEP 11...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004

08377200 Rio Grande at Foster Ranch near Langtry, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)
DEC 18...	<.010	<.011	<.01	<.010	<.011	<.02	<.004	<.011	<.02	<.034	<.02	<.005	<.002
JAN 16...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
MAR 19...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
APR 23...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
MAY 08...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
MAY 21...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
JUN 12...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
SEP 11...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002

TRI-
FLUR-
ALIN
WAT FLT
0.7 U
GF, REC
(UG/L)
(82661)

DEC 18... <.009
JAN 16... <.009
MAR 19... <.009
APR 23... <.009
MAY 08... <.009
MAY 21... <.009
JUN 12... <.009
SEP 11... <.009

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:

n -- Below the NDV

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.--Water-stage recorder with satellite telemetry. Datum of gage is 0.43 ft below National Geodetic Vertical Datum of 1929.

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 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 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, 43,575 acre-ft, Sept. 19, gage height, 2,802.88 ft; minimum observed, 26,740 acre-ft, Nov. 14, gage height, 2,794.41 ft.

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

2,794.0	26,130	2,798.0	32,770	2,802.0	41,350
2,795.0	27,620	2,799.0	34,720	2,803.0	43,880
2,796.0	29,220	2,800.0	36,780	2,804.0	46,580
2,797.0	30,940	2,801.0	38,980	2,805.0	49,440

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32550	29960	33820	38060	39480	40830	41550	41830	40540	40350	42230	42440
2	32530	29740	33900	38100	39520	40870	41580	41700	40470	40280	42490	42440
3	32550	29440	34000	38190	39620	40900	41600	41680	40400	40240	42840	42360
4	32550	29150	34080	38280	39640	40920	41630	41680	40380	40420	43200	42280
5	32570	28920	34150	38340	39900	40940	41680	41650	40330	40450	43250	42230
6	32590	28660	34250	38410	39980	40940	41700	41630	40210	40990	43250	42440
7	32610	28390	34310	38410	40020	40940	41800	41600	40210	41550	43220	42130
8	32680	28080	34370	38500	40070	40870	41800	41580	40160	41930	43200	42080
9	32700	27790	34430	38560	40140	40870	41800	41550	40090	42360	43170	42080
10	32730	27540	34480	38610	40210	40870	41800	41500	40070	42490	43090	42080
11	32770	27260	34540	38650	40280	40870	41800	41470	40000	42510	43020	42060
12	32790	27020	34620	38740	40350	40870	41780	41420	39950	42510	42940	42030
13	32830	26780	34660	38760	40350	40940	41800	41300	39880	42540	42870	41980
14	32910	26740	34720	38830	40350	40990	41850	41280	39810	42460	42790	42130
15	32930	26860	34800	38830	40380	41020	41930	41230	39950	42440	42710	42310
16	32930	26980	34880	38890	40400	41060	41830	41180	39980	42380	42610	42310
17	32950	27160	34940	38940	40450	41090	41830	41140	39930	42340	42660	43220
18	32980	27870	35010	38980	40480	41140	41830	41110	39830	42280	42590	43470
19	33040	28550	35070	38980	40520	41180	41830	41040	39760	42540	42540	43580
20	33060	29340	35150	38980	40570	41110	41850	40970	39640	42610	42540	43400
21	33080	30100	35230	38940	40640	41090	41850	40870	39550	42740	42510	43370
22	33120	30820	35910	38960	40680	41060	41850	40850	39950	42790	42590	43320
23	32810	31730	36410	39030	40680	41060	41850	40780	40380	42760	42540	43300
24	32510	32280	37130	39050	40710	41090	41830	40710	40520	42740	42510	43270
25	32170	32930	37440	39080	40710	41110	41800	40640	40540	42690	42460	43270
26	31870	33260	37620	39120	40730	41140	41830	40540	40520	42660	42410	43250
27	31560	33490	37700	39170	40780	41180	41830	40710	40540	42590	42360	43220
28	31230	33630	37790	39240	40800	41210	41830	40680	40500	42560	42280	43170
29	30920	33630	37900	39310	---	41250	41830	40640	40470	42490	42210	43120
30	30610	33720	37970	39380	---	41500	41830	40620	40420	42440	42130	43070
31	30300	---	37970	39450	---	41520	---	40590	---	42360	42380	---
MAX	33120	33720	37970	39450	40800	41520	41930	41830	40540	42790	43250	43580
MIN	30300	26740	33820	38060	39480	40830	41550	40540	39550	40240	42130	41980
(+)	2796.63	2798.49	2800.54	2801.20	2801.77	2802.07	2802.19	2801.68	2801.61	2802.40	2802.41	2802.68
(++)	-2286	+3420	+4250	+1480	+1350	+720	+320	-1240	-170	+1940	+20	+690

CAL YR 2001 MAX 75020 MIN 26740 (++) -27,180
WTR YR 2002 MAX 43580 MIN 26740 (++) +10,450

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

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RIO GRANDE BASIN

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 from 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 National Geodetic Vertical Datum of 1929. Prior to Nov. 16, 1969, at site 6.9 mi downstream at datum 12.81 ft lower.

REMARKS.--Water-discharge records fair. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	172	5.5	8.3	7.2	7.8	10	6.5	6.5	5.8	6.6	9.6
2	24	172	5.8	8.3	7.0	7.5	9.9	6.6	6.4	6.0	8.0	9.5
3	7.7	172	9.0	8.3	7.1	7.9	10	6.4	6.6	6.2	8.2	9.4
4	6.7	172	9.2	8.4	7.8	7.9	10	6.4	5.9	12	7.3	11
5	5.8	172	9.1	8.3	8.1	7.9	10	6.6	5.2	12	7.0	15
6	5.6	172	9.1	8.3	7.2	9.3	10	6.8	5.8	11	6.9	8.5
7	5.7	172	9.2	8.2	6.8	15	10	7.0	6.2	18	7.0	8.5
8	5.6	171	9.1	8.8	6.6	11	9.8	6.9	6.3	16	7.2	8.2
9	5.5	172	8.9	6.9	6.2	11	10	6.6	6.5	8.6	7.4	8.2
10	5.3	172	9.0	6.6	6.4	11	10	7.1	6.6	8.5	21	8.5
11	5.1	172	9.1	6.7	6.5	11	10	7.0	6.9	9.3	24	9.6
12	4.7	172	9.0	6.6	6.7	11	10	6.8	7.1	8.8	26	11
13	4.4	169	9.1	6.7	6.8	11	11	6.8	7.0	8.7	26	75
14	4.2	24	9.0	6.7	7.0	11	11	6.7	7.4	8.6	12	30
15	4.1	9.9	9.1	6.8	7.2	11	11	6.8	6.7	8.2	7.6	67
16	4.0	8.5	9.0	6.9	7.3	11	10	6.7	9.8	8.4	7.3	144
17	4.0	7.7	8.8	6.9	7.4	11	7.1	6.5	6.8	8.2	7.6	28
18	3.9	7.6	8.8	7.0	7.3	11	6.9	6.7	6.7	20	7.6	13
19	3.8	7.2	8.8	6.8	7.2	11	6.8	6.6	6.4	25	7.8	11
20	3.8	7.1	8.8	6.8	7.3	11	6.8	6.6	6.2	6.1	8.3	12
21	5.2	6.8	8.8	6.6	7.2	11	6.3	6.6	5.7	20	9.0	12
22	45	6.7	8.8	6.6	7.5	11	6.5	6.6	5.6	12	8.4	13
23	169	6.6	8.5	6.6	7.6	11	6.5	6.3	5.7	8.4	8.3	15
24	171	6.5	8.4	6.5	7.6	11	6.3	6.1	5.6	7.5	8.4	14
25	172	6.5	8.5	6.6	7.6	11	7.2	6.1	5.3	6.6	7.5	16
26	172	6.3	8.4	6.7	7.6	11	8.3	6.5	5.4	6.3	8.5	16
27	172	6.1	8.5	7.0	7.7	11	10	6.6	5.7	6.3	8.5	18
28	172	6.1	8.4	7.0	7.7	10	6.8	6.2	5.5	6.6	8.7	20
29	172	6.0	8.5	7.2	---	10	6.7	6.2	5.7	6.3	9.0	21
30	172	5.7	8.3	7.8	---	12	6.6	6.2	5.9	6.5	9.4	19
31	172	---	8.2	7.4	---	11	---	6.4	---	6.5	9.4	---
TOTAL	1734.1	2367.3	266.7	224.3	201.6	326.3	261.5	203.9	249.4	308.4	315.9	661.0
MEAN	55.94	78.91	8.603	7.235	7.200	10.53	8.717	6.577	8.313	9.948	10.19	22.03
MAX	172	172	9.2	8.8	8.1	15	11	7.1	6.7	25	26	144
MIN	3.8	5.7	5.5	6.5	6.2	7.5	6.3	6.1	5.2	5.8	6.6	8.2
AC-FT	3440	4700	529	445	400	647	519	404	495	612	627	1310

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2002, BY WATER YEAR (WY)

MEAN	147.8	67.01	39.79	36.89	42.08	81.03	195.8	194.5	218.0	231.8	188.0	219.6
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	0.76	0.46	0.84	1.05	5.86	8.31	8.11	0.74	8.70
(WY)	1948	1960	1962	1965	1965	1965	1965	1978	2002	1984	1965	1953

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

WATER YEARS 1938 - 2002

ANNUAL TOTAL	27865.99	7120.4	
ANNUAL MEAN	76.35	19.51	138.8
HIGHEST ANNUAL MEAN			1284
LOWEST ANNUAL MEAN			13.1
HIGHEST DAILY MEAN	463	Apr 19	23700
LOWEST DAILY MEAN	0.00	Mar 12	0.00
ANNUAL SEVEN-DAY MINIMUM	0.11	Mar 12	0.00
MAXIMUM PEAK FLOW			452
MAXIMUM PEAK STAGE			5.39
INSTANTANEOUS LOW FLOW			20.74
ANNUAL RUNOFF (AC-FT)	55270	14120	100600
10 PERCENT EXCEEDS	199	22	354
50 PERCENT EXCEEDS	27	7.8	32
90 PERCENT EXCEEDS	1.5	6.1	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, TX.
 Water-quality station operation transferred 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, 1,590 microsiemens, June 22, 1999.

WATER TEMPERATURE: Maximum daily, 32.5 °C, July 20, 1998; minimum daily, 0.0 °C, many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 16,500 microsiemens, July 22; minimum daily, 4,650 microsiemens, July 18.

WATER TEMPERATURE: Maximum daily, 32.0 °C, May 29; minimum daily, 3.0 °C, Nov. 29.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)
NOV 15...	1230	9.7	695	6.5	75	8.1	14500	15.0	15.0	3100	733	305	50.5
JAN 15...	1415	7.1	692	10.1	123	8.0	12000	19.0	18.0	2600	653	245	36.6
FEB 27...	1130	7.6	695	11.0	110	7.8	13800	10.0	9.0	2600	640	252	33.6
MAY 06...	1400	6.9	691	9.0	144	8.4	11900	35.0	33.0	2800	684	262	37.7
JUN 11...	0915	7.0	688	3.8	54	8.0	12800	30.0	26.0	3100	749	290	46.1
AUG 14...	1500	35	690	11.8	174	9.2	12900	31.0	28.0	3100	757	295	49.0

Date	SODIUM AD- SORP- TION RATIO (00931)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	ALKA- LINITY WAT DIS TOT IT FIELD CACO3 (39086)	BICAR- BONATE WATER DIS IT FIELD HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD CO3 (00452)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
NOV 15...	15	1940	105	128	--	3340	1.0	13.7	2710	9160
JAN 15...	12	1440	122	148	--	2650	.8	7.8	2200	7310
FEB 27...	13	1570	102	124	--	2590	.9	8.3	2210	7360
MAY 06...	14	1640	73	80	5	2850	1.02	8.7	2370	7910
JUN 11...	14	1780	74	90	--	2960	1.05	12.7	2440	8320
AUG 14...	15	1880	43	27	13	3180	1.04	5.1	2620	8810

RIO GRANDE BASIN

08412500 PECOS RIVER NEAR ORLA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	19.0	8.0	5.0	8.0	10.0	---	---	29.0	30.0	27.0	29.0
2	19.0	---	8.0	4.0	8.0	7.5	19.0	19.0	---	---	25.0	---
3	21.0	18.5	---	4.0	8.0	7.5	18.0	22.0	---	---	31.0	27.5
4	24.0	---	---	5.0	7.0	---	17.0	23.0	30.0	29.0	---	27.0
5	20.0	18.5	13.0	5.0	7.0	7.5	18.0	23.0	23.0	29.0	28.0	---
6	17.0	18.0	10.0	5.5	---	9.0	18.0	23.0	24.0	28.0	30.0	27.0
7	19.0	20.0	---	6.0	---	10.0	21.0	24.0	24.0	27.0	31.0	27.0
8	22.0	---	8.5	6.0	9.5	14.0	19.0	24.0	25.5	28.0	---	27.0
9	19.0	15.0	8.0	---	9.5	14.0	---	24.0	25.0	---	28.0	25.0
10	18.0	16.0	7.0	8.0	7.5	14.0	20.0	---	25.0	29.0	---	26.0
11	---	18.0	7.0	11.0	7.5	13.0	21.0	24.0	---	29.0	28.0	---
12	17.0	---	10.0	10.0	8.0	12.5	24.0	24.0	25.0	28.0	28.0	29.0
13	17.0	16.0	8.0	7.0	9.0	17.0	24.0	23.0	25.0	---	28.5	---
14	15.0	15.0	8.5	7.0	8.5	18.0	24.0	23.0	24.0	28.0	27.0	---
15	15.0	16.5	8.5	---	9.0	17.0	23.0	22.0	---	27.5	27.0	23.0
16	14.0	---	7.5	7.0	9.0	15.0	22.0	23.0	26.0	28.0	27.0	23.0
17	14.0	16.0	8.0	8.0	9.0	15.0	---	22.0	26.0	29.0	27.0	23.0
18	---	16.0	8.0	8.5	9.0	---	22.0	23.0	26.0	29.0	---	24.0
19	16.0	15.0	8.5	8.5	9.0	14.0	22.0	23.0	26.0	25.0	26.5	23.0
20	18.0	12.0	8.0	7.0	9.0	14.0	---	25.0	26.0	25.0	---	23.0
21	18.0	11.0	8.5	---	10.0	14.0	23.0	25.0	26.0	25.0	27.0	23.0
22	18.0	---	8.0	7.0	12.5	---	23.0	25.0	26.0	27.0	27.0	23.0
23	18.0	11.0	8.0	8.5	13.0	14.0	24.0	26.0	25.0	---	27.0	---
24	20.0	10.0	---	8.0	13.0	13.0	24.0	26.0	25.0	25.0	27.0	---
25	20.0	---	---	6.0	---	13.0	24.0	25.0	---	26.0	27.0	21.0
26	17.0	12.0	7.0	---	8.0	14.0	24.0	24.0	31.0	27.0	27.0	23.0
27	---	---	4.0	---	---	14.5	22.0	---	31.0	---	27.0	---
28	20.0	4.0	4.0	11.0	10.0	17.0	23.0	24.0	30.0	---	27.0	23.0
29	17.5	3.0	8.0	9.5	---	17.0	---	32.0	---	27.5	27.0	23.0
30	17.0	7.0	7.0	9.0	---	18.0	27.0	---	31.0	27.0	25.0	22.0
31	17.0	---	7.0	9.0	---	18.0	---	---	---	27.0	---	---
MEAN	18.1	14.0	7.9	7.3	9.1	13.6	21.8	23.9	26.4	27.5	27.5	24.6
MAX	24.0	20.0	13.0	11.0	13.0	18.0	27.0	32.0	31.0	30.0	31.0	29.0
MIN	14.0	3.0	4.0	4.0	7.0	7.5	17.0	19.0	23.0	25.0	25.0	21.0

WTR YR 2002 MEAN 18.3 MAX 32.0 MIN 3.0

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	13100	12400	10800	10600	---	---	11800	13000	12800	13400	13600
2	12600	---	12400	10700	10500	---	10900	11600	---	---	13400	---
3	12700	13200	---	10800	10600	10900	11000	11600	---	---	13300	13300
4	13000	---	---	10700	10500	---	10900	11500	12400	12800	---	13400
5	13000	12900	11200	10700	---	10900	10900	11500	12200	12900	12800	---
6	12800	12900	11100	10600	---	10900	10900	11500	12200	12800	13000	13600
7	12900	13000	11000	10700	---	10900	10800	12500	12100	12900	13200	13300
8	12900	---	10900	10700	11500	10600	10900	12500	12300	12700	---	13300
9	12800	12900	11000	---	11500	10700	---	12700	12300	---	13600	13400
10	13000	13000	11000	10500	11600	10700	11100	---	12200	14700	---	13600
11	---	12900	11000	10700	11700	10700	11000	12400	---	13400	13000	---
12	13100	---	10900	10600	11700	10700	11000	12400	8980	13400	12900	13200
13	13300	13000	10900	10700	11500	10900	11000	12200	8960	---	12700	---
14	13200	13000	10900	10600	11500	10800	11000	12400	9100	13500	12900	---
15	13300	13000	11000	---	11500	10800	11200	12400	---	13800	13600	10100
16	13300	---	10900	10800	11400	10900	11100	12700	8960	13500	13400	4870
17	13300	13200	11000	10700	11400	10800	11200	12400	12700	13400	13700	5020
18	---	13100	10900	10800	11400	---	11500	12400	11800	4650	---	5520
19	13400	13100	11000	10800	11600	10600	11300	12400	12800	4750	13400	11100
20	13400	13000	10900	10800	11600	10400	---	12600	12700	16400	---	---
21	13400	13100	11000	---	11700	11100	11500	12700	12900	16400	13300	11100
22	13300	---	10900	10700	11400	---	11300	12700	13000	16500	13300	11100
23	13100	13300	11000	10900	11500	10900	11300	12600	13200	---	13100	---
24	13100	13200	---	10800	11400	10800	11300	12400	13000	15000	13400	---
25	13000	---	---	10700	---	10800	9610	12600	---	14200	13700	12600
26	13000	13100	10900	---	11800	10800	9640	12600	13700	13800	13400	13000
27	---	---	10900	---	---	10900	9880	---	13700	---	13400	---
28	13100	12800	10900	10800	---	10900	9640	12500	13700	---	13500	12900
29	12500	12600	10900	10600	---	10700	---	12800	---	13900	13600	13100
30	13000	12400	10800	10500	---	10900	11600	---	13600	13400	13400	12900
31	13100	---	10800	10500	---	10700	---	---	---	13700	---	---
MEAN	13100	13000	11100	10700	11400	10800	10900	12300	12100	13100	13300	11600
MAX	13400	13300	12400	10900	11800	11100	11600	12800	13700	16500	13700	13600
MIN	12500	12400	10800	10500	10500	10400	9610	11500	8960	4650	12700	4870

WTR YR 2002 MEAN 11900 MAX 16500 MIN 4650

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RIO GRANDE BASIN

08446500 Pecos River near Girvin, TX

LOCATION.--Lat 31°06'47", long 102°25'02", Pecos County, Hydrologic Unit 13070001, 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.--Aug. 1939 to current year.

Water-quality records.--Chemical data: Oct. 1939 to June 1941, Oct. 1946 to Sept. 1947, Oct. 1953 to Aug. 1982.

Pesticide data: May 1968 to July 1974. Specific conductance: Oct. 1939 to June 1941, Oct. 1946 to Sept. 1947, Oct. 1953 to Sept. 1982. Water temperature: Oct. 1953 to Jan. 1959, Mar. 1964 to Sept. 1982.

GAGE.--Water-stage recorder with concrete control and measuring flume. Elevation of gage is 2,290 ft above NGVD of 1929, from topographic map. Supplementary water-stage recorder, 7.2 mi downstream at datum 2,269.65 ft above NGVD of 1929, used as regular gage prior to July 17, 1951, is now used only for peaks exceeding about 750 ft³/s. Satellite telemeter at station.

REMARKS.--Records good except those for May 25-31, which are fair, and those for estimated daily discharges, which are poor. Since installation of gage in water year 1939, at least 10% of contributing drainage area has been regulated. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e15	14	31	21	21	21	19	10	5.2	2.9	4.9	4.2
2	e15	13	29	21	21	21	19	9.7	4.7	3.0	4.8	4.2
3	e15	14	28	21	21	21	18	9.2	4.4	2.8	5.1	4.3
4	e20	14	28	21	22	20	19	9.1	4.3	2.9	4.9	4.3
5	e20	14	29	21	26	21	19	9.0	4.5	3.0	4.7	4.2
6	e15	17	27	20	28	21	18	9.0	4.6	12	4.7	4.3
7	e15	19	27	20	27	21	18	8.5	6.5	16	8.4	4.4
8	e15	20	26	19	26	21	17	7.9	4.8	100	17	4.6
9	e15	21	26	19	25	20	17	7.5	4.2	30	36	5.0
10	e15	22	25	20	25	20	16	22	4.0	11	24	5.4
11	e15	22	24	20	25	21	16	31	4.1	8.7	14	5.6
12	e15	22	25	20	25	21	16	20	3.9	6.8	11	5.4
13	e15	22	25	19	25	23	15	11	3.8	7.2	8.7	5.4
14	e15	35	25	19	25	21	15	7.5	3.7	6.5	7.8	6.0
15	e15	37	25	19	25	18	14	13	3.6	6.0	7.0	6.6
16	e15	28	25	20	24	18	15	15	3.6	5.9	6.4	71
17	e10	26	25	20	24	17	14	11	3.5	5.6	5.8	56
18	e10	24	26	20	24	19	12	8.8	3.1	5.6	5.4	16
19	e10	26	26	20	23	20	12	8.0	2.9	5.4	4.9	13
20	e10	25	25	20	23	20	12	7.4	2.9	5.3	4.7	9.2
21	e10	23	25	20	23	21	13	6.6	2.9	5.2	4.8	8.8
22	e10	23	25	20	23	20	13	7.3	2.8	5.2	4.8	8.1
23	e10	24	25	20	23	20	13	6.8	2.8	5.2	4.7	7.8
24	12	25	25	19	22	20	12	6.5	2.6	5.3	4.5	8.1
25	12	22	24	19	22	20	12	&6.5	2.6	5.3	4.5	7.8
26	12	20	24	20	21	20	12	&6.4	2.8	5.1	4.4	7.7
27	13	19	24	20	21	19	13	&6.0	2.9	5.0	4.3	8.0
28	12	24	23	20	20	19	12	&11	2.9	4.9	4.4	8.0
29	14	31	22	20	---	19	11	&10	2.8	4.9	4.4	8.3
30	14	32	22	20	---	20	11	&4.2	2.8	4.9	4.3	10
31	14	---	21	21	---	19	---	&5.1	---	5.0	4.3	---
TOTAL	423	678	787	619	660	622	443	311.0	110.2	302.6	239.6	321.7
MEAN	13.65	22.60	25.39	19.97	23.57	20.06	14.77	10.03	3.673	9.761	7.729	10.72
MAX	20	37	31	21	28	23	19	31	6.5	100	36	71
MIN	10	13	21	19	20	17	11	4.2	2.6	2.8	4.3	4.2
AC-FT	839	1340	1560	1230	1310	1230	879	617	219	600	475	633

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002, BY WATER YEAR (WY)

MEAN	189.6	101.6	66.26	62.36	53.23	44.62	35.27	44.71	97.19	45.39	33.68	62.48
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 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1939 - 2002

ANNUAL TOTAL	6789.5		5517.1						
ANNUAL MEAN	18.60		15.12				69.79		
HIGHEST ANNUAL MEAN							1386		1942
LOWEST ANNUAL MEAN							15.1		2002
HIGHEST DAILY MEAN	92	Aug 17	100	Jul 8			19400	Oct 5	1941
LOWEST DAILY MEAN	5.3	Jul 22	2.6	Jun 24			1.9	Jun 19	1982
ANNUAL SEVEN-DAY MINIMUM	5.7	Jul 16	2.8	Jun 20			2.3	Jul 1	1983
MAXIMUM PEAK FLOW			155	May 10			k20000	Oct 5	1941
MAXIMUM PEAK STAGE			2.08	May 10			pk20.49	Oct 5	1941
ANNUAL RUNOFF (AC-FT)	13470		10940				50560		
10 PERCENT EXCEEDS	26		25				83		
50 PERCENT EXCEEDS	19		15				28		
90 PERCENT EXCEEDS	9.7		4.3				10		

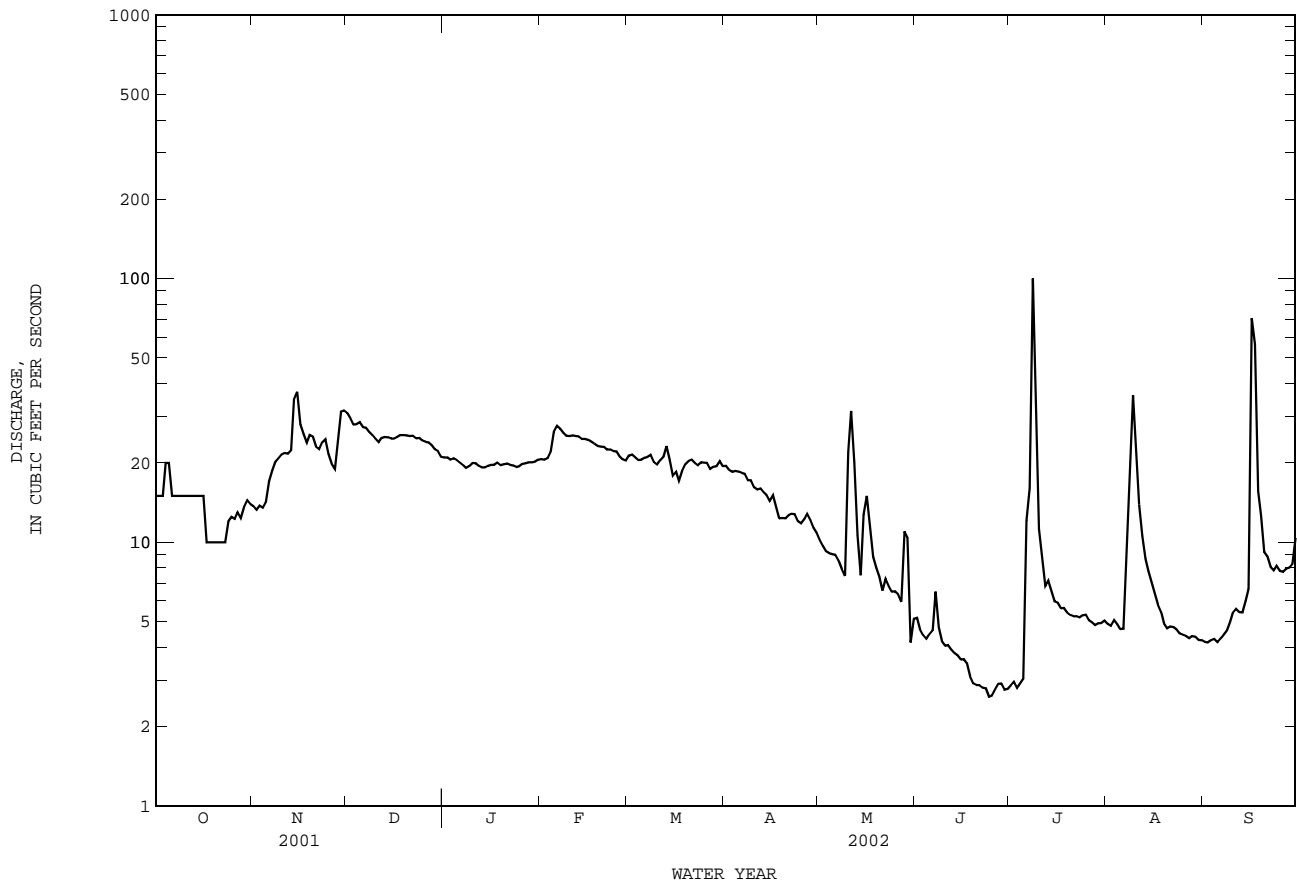
e Estimated

& Value was computed from affected unit values

k From supplementary gage.

p Observed.

08446500 Pecos River near Girvin, TX--Continued



RIO GRANDE BASIN

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 13070008, 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.--

CHEMICAL DATA: Oct. 1954 to current year.

BIOCHEMICAL DATA: Oct. 1974 to current year.

PESTICIDE DATA: July 1975 to June 1982, Oct. 1995 to current year.

SEDIMENT DATA: Oct. 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct. 1970 to Sept. 1976 and Oct. 1980 (local observer), Nov. 1980 to Sept. 1985.

WATER TEMPERATURE: Oct. 1970 to Sept. 1976 and Oct. 1980 (local observer), Nov. 1980 to Sept. 1985.

INSTRUMENTATION.--Water-quality monitor Nov. 1980 to Sept. 1985.

REMARKS.--Instantaneous discharges published in the table were provided by International Boundary and Water Commission. Records of daily mean discharge for water year 2002 are published in International Boundary and Water Commission Water Bulletins Nos. 71 and 72. Since Oct. 1995, suspended sediment chemistry and quality assurance data 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, 6,000 microsiemens/cm, Mar. 21, 22, 1981; minimum, 230 microsiemens/cm, Oct. 11, 1981.

WATER TEMPERATURE: Maximum, 32.5°C, June 8, 1981; minimum, 1.5°C, Dec. 26, 27, 1983.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	DIS-CHARGE INST. (CMS) (30209)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD ARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PERCENT SATURATION) (00301)	TURBIDITY LAB HACH 2100AN (NTU) (99872)	UV ABSORBANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORBANCE 280 NM, WTR FLT (UNITS /CM) (61726)	CARBON, INORG + ORGANIC TOTAL (MG/L AS C) (00694)	CARBON, INORGANIC TOTAL (MG/L AS C) (00688)
DEC													
19...	1140	176	4.98	2540	--e	12.1	9.9	96	1.4	.027	.020	.2	<.1
JAN													
17...	1400	150	4.25	3210	7.9	13.2	10.2	102	.9	.022	.016	.2	<.1
MAR													
18...	1410	118	3.34	3740	8.1	20.4	9.3	110	--	.025	.018	.2	<.1
APR													
22...	1330	116	3.29	3990	8.2	24.8	8.3	106	1.2	.034	.025	.3	<.1
MAY													
20...	1410	78	2.22	3200	8.1	24.1	8.9	111	1.4	.038	.027	.2	<.1
JUN													
11...	1230	72	2.03	2640	8.1	28.2	7.4	101	.8	.084	.063	.3	<.1
AUG													
13...	1030	64	1.81	2890	8.1	28.6	7.0	96	4.7	.038	.027	.2	<.1
SEP													
10...	1420	76	2.14	2420	8.1	28.0	7.6	103	5.0	.037	.028	.2	<.1
Date		NITROGEN, PAR TICULTE WAT FLT SUSP (MG/L AS N) (49570)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	CARBONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKALINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
DEC													
19...	<.02	520	350	117	53.5	309	6	56	5.81	3	202	170	336
JAN													
17...	<.02	650	490	145	68.9	412	7	58	7.25	2	190	160	433
MAR													
18...	<.02	710	590	152	79.8	494	8	60	7.54	2	142	120	516
APR													
22...	.05	720	550	150	83.3	518	8	61	6.78	2	201	169	537
MAY													
20...	.03	600	510	124	70.1	440	8	61	6.99	2	113	95	418
JUN													
11...	.05	510	400	111	55.2	339	7	59	6.77	1	129	108	333
AUG													
13...	.04	510	420	106	59.9	379	7	61	6.87	<1	113	95	365
SEP													
10...	.04	450	360	97.6	50.3	310	6	60	5.80	2	116	98	313

08447410 Pecos River near Langtry, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, DIS- SOLVED TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC DIS- SOLVED TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)
DEC 19...	524	.8	12.8	1550	1470	--	E.005	.84	E.02	1.0	--	--	.15
JAN 17...	697	.7	11.4	1940	1880	--	E.006	.75	<.04	.96	--	--	.15
MAR 18...	843	.8	6.93	2330	2180	--	<.008	.19	<.04	.42	--	--	.20
APR 22...	891	.9	5.17	2380	2300	--	<.008	E.03	<.04	--	--	--	.31
MAY 20...	695	.9	6.92	1900	1820	--	<.008	.08	<.04	.44	--	--	.30
JUN 11...	556	.6	10.2	1570	1480	.10	.009	.11	.11	.64	.42	.34	.45
AUG 13...	616	.9	14.7	1700	1610	--	<.008	E.03	<.04	--	--	--	.27
SEP 10...	528	.8	14.8	1470	1380	--	<.008	E.03	E.03	--	--	--	.29
Date	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC- ULATE TOTAL (MG/L AS C) (00689)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (T/DAY) (80155)	SEDI- MENT, SUS- PENDEED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)
DEC 19...	.19	E.002	<.004	<.007	.9	.2	.48	1.0	55	1.1	164	<10	52.5
JAN 17...	.21	<.004	<.004	<.007	1.0v	.2	4.0	10	69	1.1	201	<30	63.5
MAR 18...	.23	<.004	<.004	<.007	2.4	.2	.32	1.0	60	1.3	205	<10	70.9
APR 22...	.29	E.003	E.004	<.007	3.6	.2	.63	2.0	42	1.6	245	E16n	71.7
MAY 20...	.36	.006	E.004	<.007	2.3	.2	.21	1.0	80	1.3	215	<30	58.8
JUN 11...	.53	.008	.005	<.007	5.1	.3	.39	2.0	77	1.6	186	<30	50.2
AUG 13...	.30	.007	E.004	<.007	2.9	.2	.17	1.0	82	2.0	204	E17	53.7
SEP 10...	.34	.006	E.003	<.007	2.7	.2	--	<.001	100	1.6	238	<10	47.5
Date	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
DEC 19...	1.5	2120	7.5	<.002	<.004	<.002	<.005	<.007	<.050	<.010	<.002	<.041	<.020
JAN 17...	1.4	2670	9.3	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020
MAR 18...	1.2	2870	6.2	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020
APR 22...	1.6	3080	6.8	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020
MAY 20...	.9	2400	7.6	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020
JUN 11...	E.6	1970	7.3	<.006	<.015	<.004	<.005	.395	<.050	<.010	<.002	<.041	<.020
AUG 13...	1.3	2200	7.9	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020
SEP 10...	.7	1870	8.8	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020

RIO GRANDE BASIN

08447410 Pecos River near Langtry, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U (UG/L) (82687)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)
DEC 19...	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004
JAN 17...	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004
MAR 18...	<.005	<.006	<.018	<.003	<.006	E.002n	<.005	<.02	<.002	<.009	<.005	<.003	<.004
APR 22...	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004
MAY 20...	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004
JUN 11...	<.005	<.006	<.018	<.003	E.035	.007	<.005	<.02	.002	<.009	<.005	<.003	<.004
AUG 13...	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004
SEP 10...	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004

Date	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER FLTRD 0.7 U GF, REC (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)
DEC 19...	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.007	<.006	<.002	<.010	<.011	<.01
JAN 17...	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01
MAR 18...	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01
APR 22...	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01
MAY 20...	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01
JUN 11...	<.035	<.027	.079	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	E.01
AUG 13...	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01
SEP 10...	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01

Date	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
DEC 19...	<.010	<.011	<.02	<.004	<.011	<.02	<.034	<.02	<.005	<.002	<.009
JAN 17...	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
MAR 18...	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
APR 22...	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
MAY 20...	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
JUN 11...	<.010	<.011	<.02	<.004	.018	<.02	<.034	<.02	<.005	<.002	<.009
AUG 13...	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
SEP 10...	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:

n -- Below the NDV
v -- Analyte detected in laboratory blank

Null value qualifier codes used in this report:

e -- Required equipment not functional/avail

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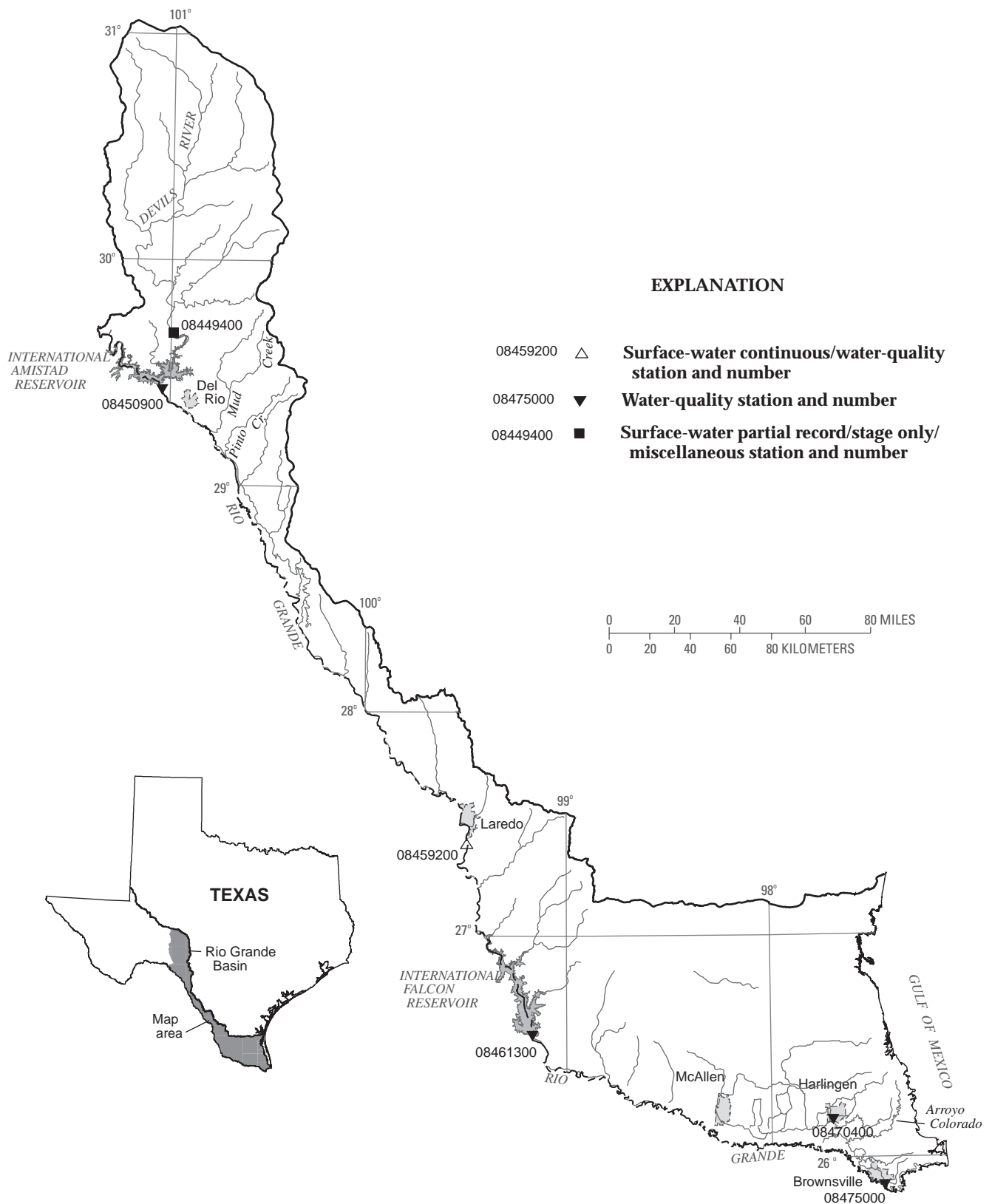


Figure 10.--Map showing location of gaging stations in the second section of the Rio Grande Basin

08449400	Devils River at Pafford Crossing near Comstock, TX	377
08450900	Rio Grande below Amistad Dam near Del Rio, TX	350
08459200	Rio Grande at Pipeline Crossing below Laredo, TX	354
08461300	Rio Grande below Falcon Dam, TX	360
08470400	Arroyo Colorado at Harlingen, TX	364
08475000	Rio Grande near Brownsville, TX	368

RIO GRANDE BASIN

08450900 Rio Grande below Amistad Dam near Del Rio, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°25'30", long 101°02'27", 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.--

CHEMICAL DATA: July 1968 to current year.

BIOCHEMICAL DATA: Oct. 1995 to current year.

PESTICIDE DATA: Oct. 1995 to current year.

SEDIMENT DATA: Oct. 1995 to current year.

REMARKS.-- The flow is controlled largely by releases from Amistad Reservoir. Instantaneous discharges published in the table were provided directly by International Boundary and Water Commission. Records of daily mean discharge for water year 2002 are published in International Boundary and Water Commission Water Bulletins Nos. 71 and 72. Since June 1996, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	DIS-CHARGE INST. (CMS) (30209)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED SATUR-ATION (00301)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS) /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS) /CM) (61726)	CARBON, INORG + ORGANIC, PARTIC. TOTAL (MG/L AS C) (00694)	CARBON, INOR-GANIC, PARTIC. TOTAL (MG/L AS C) (00688)
DEC 20...	1100	61	1.73	938	--e	14.5	10.8	109	1.3	.040	.028	.2	<.1
JAN 15...	1330	678	19.2	1010	8.0	12.8	12.3	124	1.8	.039	.027	.3	<.1
APR 24...	0830	1400	39.6	1010	7.6	16.5	6.7	71	3.1	.039	.027	.4	<.1
MAY 22...	0700	2020	57.2	1020	7.6	18.9	5.7	64	3.6	.035	.024	.5	<.1
AUG 14...	0820	1150	32.6	952	7.4	25.0	1.3	16	3.0	.039	.028	.4	<.1
SEP 12...	0800	1210	34.3	965	7.6	25.8	4.1	53	1.9	.038	.027	.3	<.1
Date	NITRO-GEN, PAR TICULATE WAT FLT SUSP (MG/L AS N) (49570)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
DEC 20...	.04	220	120	55.9	20.0	99.0	3	49	4.08	1	127	106	185
JAN 15...	<.02	230	130	58.6	20.5	105	3	49	4.48	2	122	103	189
APR 24...	<.02	270	170	70.7	22.7	110	3	46	4.27	1	128	106	187
MAY 22...	.04	270	140	70.0	23.2	114	3	47	4.21	<1	155	128	187
AUG 14...	.04	260	130	67.6	21.2	102	3	46	4.20	<1	151	124	177
SEP 12...	.03	250	140	64.5	20.3	97.4	3	46	4.28	1	133	110	174
Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
DEC 20...	121	.7	13.5	606	566	--	<.008	.20	<.04	.39	.17	.20	.004
JAN 15...	126	.8	13.7	620	583	--	<.008	.22	<.04	.44	.16	.23	.005
APR 24...	133	.7	13.2	659	607	.25	.008	.26	<.04	.49	.23	.23	.004
MAY 22...	138	.8	14.2	695	631	--	E.006	.34	<.04	.59	.17	.25	.011
AUG 14...	128	.8	15.2	620	592	.19	.011	.20	<.04	.43	.18	.23	.010
SEP 12...	123	.7	15.0	600	567	--	<.008	.21	E.04	.47	.22	.26	.012

08450900 Rio Grande below Amistad Dam near Del Rio, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC- ULATE TOTAL (MG/L AS C) (00689)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)
DEC 20...	<.004	<.007	2.1	.2	.49	3.0	100	2.6	187	<10	47.1	.9	1150
JAN 15...	E.003	<.007	2.3v	.3	9.2	5.0	62	2.3	155	<10	45.3	.8	1170
APR 24...	E.003	<.007	2.1	.4	7.6	2.0	100	1.8	156	<10	41.6	.7	1230
MAY 22...	.004	<.007	2.0	.5	27.3	5.0	94	1.7	147	<10	42.4	1.0	1240
AUG 14...	E.003	<.007	2.1	.4	3.1	1.0	100	2.9	150	<10	39.6	.6	1160
SEP 12...	.007	<.007	2.2	.3	6.5	2.0	92	2.7	139	<10	35.9	.7	1090
Date	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)
DEC 20...	6.4	<.002	<.004	<.002	<.005	<.007	<.050	<.010	<.002	<.041	<.020	<.005	<.006
JAN 15...	7.0	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020	<.005	<.006
APR 24...	5.7	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020	<.005	<.006
MAY 22...	5.4	<.006	<.006	<.004	<.005	<.007	<.050	<.010	<.002	<.041	<.020	<.005	<.006
AUG 14...	4.7	<.006	<.006	<.004	<.005	E.004n	<.050	<.010	<.002	<.041	<.020	<.005	<.006
SEP 12...	4.6	<.006	<.006	<.004	<.005	E.004n	E.006	<.010	<.002	<.041	<.020	<.005	<.006
Date	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THON, DIS- SOLVED (UG/L) (39532)
DEC 20...	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027
JAN 15...	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027
APR 24...	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027
MAY 22...	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027
AUG 14...	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027
SEP 12...	<.018	<.003	E.002	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027
Date	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER FLTRD 0.7 U GF, REC (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)
DEC 20...	<.013	<.006	<.002	<.007	<.003	<.007	<.006	<.002	<.010	<.011	<.01	<.010	<.011
JAN 15...	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01	<.010	<.011
APR 24...	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01	<.010	<.011
MAY 22...	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01	<.010	<.011
AUG 14...	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01	<.010	<.011
SEP 12...	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01	<.010	<.011

RIO GRANDE BASIN

08450900 Rio Grande below Amistad Dam near Del Rio, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
DEC									
20...	<.02	<.004	<.011	<.02	<.034	<.02	<.005	<.002	<.009
JAN									
15...	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
APR									
24...	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
MAY									
22...	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
AUG									
14...	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
SEP									
12...	<.02	<.004	<.005	Mn	<.034	<.02	<.005	<.002	<.009

Remark codes used in this report:

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

Value qualifier codes used in this report:

n -- Below the NDV
v -- Analyte detected in laboratory blank

Null value qualifier codes used in this report:

e -- Required equipment not functional/avail

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RIO GRANDE BASIN

08459200 Rio Grande at Pipeline Crossing below Laredo, TX
(National stream-quality accounting network)

LOCATION.--Lat 27°24'01", long 99°29'18", Webb County, Hydrologic Unit 13080002, 8.7 mi (14.0 km) downstream from Texas-Mexican Railway bridge near Laredo, and at mile 352.60 (567.47 km).

DRAINAGE AREA.--132,578 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 335 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in Oct. 1997, at least 10% of contributing drainage area has been regulated. Extensive withdrawals during the year for municipal and agricultural usage.

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	732	642	861	e791	815	670	982	3430	1620	1730	4130	900
2	714	603	886	e787	830	684	1020	3440	1450	3190	2290	962
3	700	604	855	e787	825	691	1030	3370	1450	6190	1460	849
4	711	614	863	e759	814	736	1010	3460	1410	6030	1170	1020
5	779	639	843	807	849	782	958	3510	1360	3670	1070	955
6	731	637	847	792	855	776	944	3490	1420	3860	1070	879
7	718	637	837	797	857	763	978	3370	1930	2630	1050	791
8	757	646	1050	801	832	730	1020	3410	1950	1920	1020	840
9	640	668	897	819	837	666	1000	3470	1680	1820	1060	1730
10	719	693	891	813	813	675	1010	3470	1600	1880	1010	9600
11	705	743	1150	796	821	746	1010	3530	1510	1990	1020	2450
12	698	682	1010	788	812	902	981	4480	1500	1770	2160	1730
13	671	660	889	769	809	1050	935	4180	1450	1590	1250	1200
14	661	662	855	773	794	1030	1000	3790	1400	1590	1060	1110
15	647	672	816	767	774	1030	1130	3720	1270	3050	1030	3420
16	674	2270	809	785	767	1050	1850	3390	1280	7470	942	9280
17	678	2560	812	771	758	1050	1820	3680	1320	8550	948	5340
18	677	1610	815	749	766	1060	1420	6240	1300	3300	937	2980
19	673	1130	e847	755	772	1050	1220	5490	1260	1780	873	1710
20	666	1200	e830	748	776	1070	1130	3930	1220	1380	919	1300
21	661	1070	e794	741	768	1100	1060	3660	1200	1220	899	1190
22	677	960	e756	765	725	1060	1070	3550	1170	1110	863	1120
23	696	948	e787	773	712	1210	1050	3510	1120	1080	735	1100
24	705	899	e773	777	699	1050	1180	2920	1110	1050	862	1080
25	668	854	e759	780	705	1010	1870	2250	1100	992	828	1100
26	654	824	e756	751	670	1050	1890	2190	1110	993	778	1010
27	682	801	e756	738	685	1110	2390	2500	1110	947	793	808
28	686	787	e770	761	674	1090	3430	2200	1300	904	779	675
29	670	795	e756	774	---	1060	3550	2140	1370	892	777	616
30	675	800	e759	807	---	1050	3500	2220	1740	926	812	601
31	660	---	e770	814	---	981	---	2040	---	960	761	---
TOTAL	21385	27310	26099	24135	21814	28982	43438	106030	41710	76464	35356	58346
MEAN	689.8	910.3	841.9	778.5	779.1	934.9	1448	3420	1390	2467	1141	1945
MAX	779	2560	1150	819	857	1210	3550	6240	1950	8550	4130	9600
MIN	640	603	756	738	670	666	935	2040	1100	892	735	601
AC-FT	42420	54170	51770	47870	43270	57490	86160	210300	82730	151700	70130	115700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2002, BY WATER YEAR (WY)

	1998	1999	2000	2001	2002
MEAN	1335	1209	971.1	942.9	1115
MAX	2066	1659	1478	1451	1427
(WY)	1998	1998	1998	1998	2001
MIN	690	781	586	489	779
(WY)	2002	1999	1999	1999	2002

SUMMARY STATISTICS

FOR 2001 CALENDAR YEAR

FOR 2002 WATER YEAR

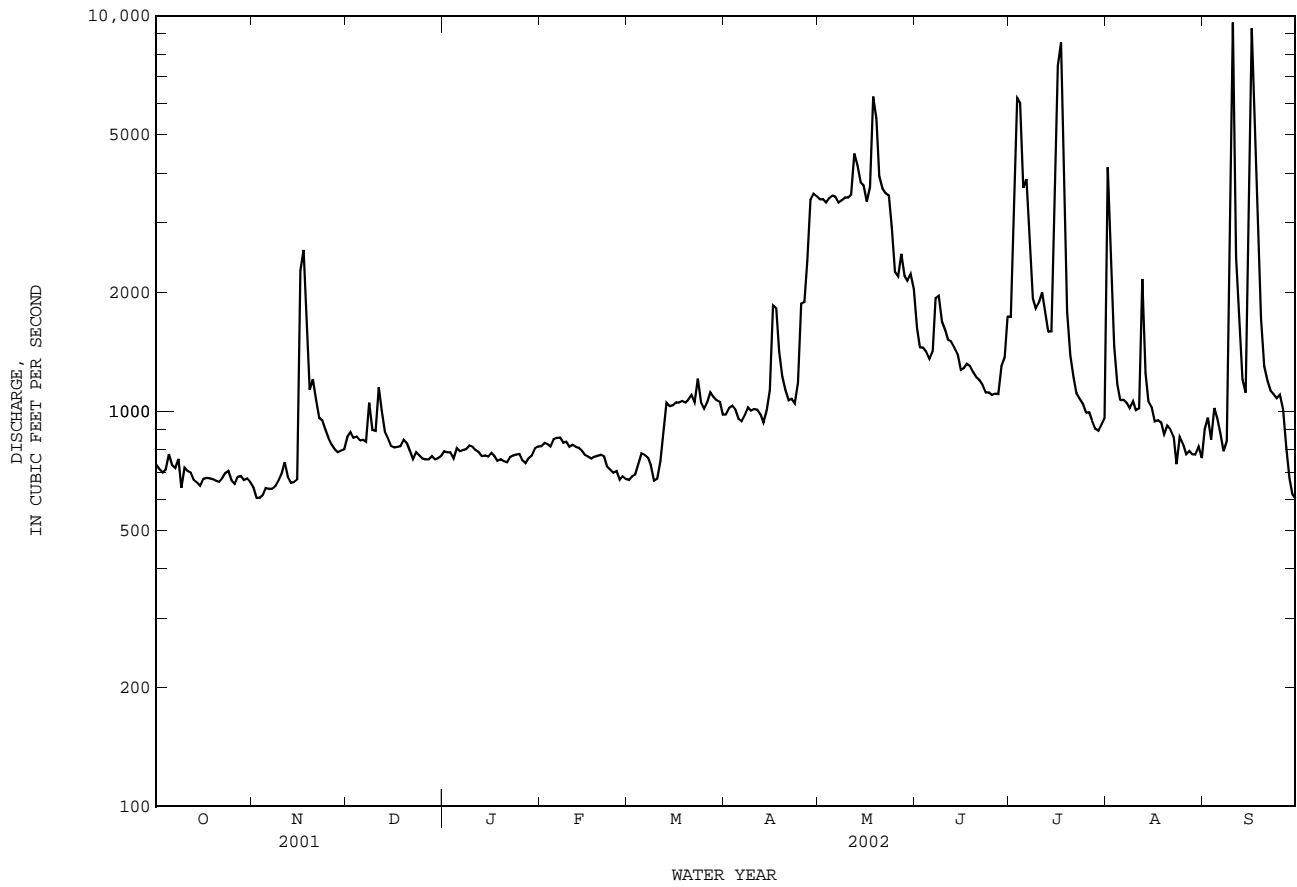
WATER YEARS 1998 - 2002

ANNUAL TOTAL	670993	511069		
ANNUAL MEAN	1838	1400		
HIGHEST ANNUAL MEAN			1996	
LOWEST ANNUAL MEAN			2713	1998
HIGHEST DAILY MEAN	17400	Sep 10	1400	2002
LOWEST DAILY MEAN	603	Nov 2	88000	Aug 27 1998
ANNUAL SEVEN-DAY MINIMUM	625	Nov 1	414	Feb 7 1999
MAXIMUM PEAK FLOW			439	Feb 1 1999
MAXIMUM PEAK STAGE			18000	Sep 10
INSTANTANEOUS LOW FLOW			91000	Aug 27 1998
ANNUAL RUNOFF (AC-FT)	1331000	1014000	10.94	Aug 27 1998
10 PERCENT EXCEEDS	3320	3370	567	Nov 2 2001
50 PERCENT EXCEEDS	1390	948		
90 PERCENT EXCEEDS	705	680		

e Estimated

a From floodmark.

08459200 Rio Grande at Pipeline Crossing below Laredo, TX--Continued
(National stream-quality accounting network)



08459200 Rio Grande at Pipeline Crossing below Laredo, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Jan. 1998 to current year.
BIOCHEMICAL DATA: Apr. 1977 to Dec. 1981, Jan. 1998 to current year.
PESTICIDE DATA: Jan. 1998 to current year.
SEDIMENT DATA: Jan. 1998 to current year.

REMARKS.--Since Jan. 1998, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey Texas District office upon request.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	DIS-CHARGE INST. (CMS) (30209)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS /CM) (61726)	CARBON, INORG + ORGANIC PARTIC. TOTAL (MG/L AS C) (00694)	CARBON, INOR-GANIC, PARTIC. TOTAL (MG/L AS C) (00688)
DEC 19...	0930	781	22.1	950	8.0	15.5	9.3	94	10	.048	.035	1.2	<.1
JAN 04...	1300	785	22.2	900	8.2	10.0	12.3	112	--	.040	.029	.5	<.1
FEB 28...	1330	679	19.2	1040	7.7	13.5	--e	--	22	.049	.036	1.6	<.1
MAR 18...	1220	1080	30.6	1040	7.6	22.5	7.7	91	28	.055	.040	1.7	<.1
APR 23...	1300	1080	30.6	940	8.0	26.5	8.8	111	44	.069	.050	2.7	<.1
MAY 15...	1030	4340	123	895	8.1	23.0	7.8	93	140	.065	.047	10.9	3.1
JUN 18...	1050	1400	39.6	1020	8.3	30.0	--e	--	26	.050	.035	1.9	<.1
AUG 07...	1000	1030	29.2	671	7.6	29.5	6.2	82	51	.076	.056	2.5	<.1
22...	1000	848	24.0	1020	8.0	28.0	5.9	77	35	.057	.041	2.0	<.1
SEP 11...	1100	2260	64.0	583	7.8	26.0	6.6	83	400	.126	.097	13.3	2.1

Date	NITRO-GEN, PAR-TICULATE WAT FLT SUSP (MG/L AS N) (49570)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
DEC 19...	.08	250	120	69.6	19.3	95.4	3	45	4.06	1	157	130	186
JAN 04...	.04	220	120	57.3	18.1	90.5	3	47	3.74	<1	117	97	169
FEB 28...	.10	250	130	63.9	21.1	108	3	48	4.08	1	141	118	192
MAR 18...	.15	270	140	70.7	21.2	101	3	45	4.74	1	154	129	186
APR 23...	.20	240	110	63.8	18.1	89.7	3	45	4.47	<1	151	126	164
MAY 15...	.49	220	--	59.3	17.4	87.2	3	46	4.43	1	E138	E114	153
JUN 18...	.21	240	140	59.0	22.1	112	3	50	4.33	1	124	104	184
AUG 07...	.16	180	88	51.9	12.6	56.4	2	40	4.13	<1	115	96	107
22...	.18	250	120	65.6	20.8	107	3	48	4.70	1	152	126	179
SEP 11...	.77	150	76	43.4	8.76	52.7	2	43	4.60	<1	84	70	109

08459200 Rio Grande at Pipeline Crossing below Laredo, TX--Continued
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WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, DIS- SOLVED TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC DIS- SOLVED TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED TOTAL (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED TOTAL (MG/L AS N) (00623)
DEC 19...	113	.7	10.1	620	583	.82	.033	.85	.23	1.5	.43	.29	.52
JAN 04...	106	.6	1.89	524	509	.43	.016	.45	.21	.99	.34	.24	.45
FEB 28...	124	.7	1.57	636	592	.47	.025	.50	.39	1.3	.43	.26	.65
MAR 18...	120	.6	1.54	628	586	.19	.029	.22	.24	.92	.46	.36	.61
APR 23...	112	.5	11.6	586	545	.83	.052	.88	.20	1.6	.54	.38	.58
MAY 15...	108	.5	12.0	546	517	--	E.007	.85	<.04	1.6	--	--	.27
JUN 18...	131	.7	11.4	624	590	.29	.015	.31	.07	.83	.45	.28	.35
AUG 07...	66.4	.4	10.6	411	372	.97	.027	.99	.10	1.6	.47	.25	.36
AUG 22...	130	.7	13.2	631	603	.80	.027	.82	.15	1.4	.44	.29	.44
SEP 11...	58.5	.3	7.23	357	330	.58	.033	.61	.13	1.8	1.1	.35	.48
Date	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC- ULATE TOTAL (MG/L AS C) (00689)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)
DEC 19...	.65	.27	.24	.22	.675	2.7	1.2	42.2	20	98	13v	.49	2.3
JAN 04...	.55	.23	.21	.21	.653	2.6v	.5	12.7	6.0	91	21	.33	1.3
FEB 28...	.83	.27	.23	.24	.724	4.9	1.5	38.5	21	100	--	--	1.5
MAR 18...	.70	.29	.23	.22	.681	--	1.6	114	39	97	--	--	2.4
APR 23...	.74	.32	.23	.20	.619	5.4	2.7	169	58	99	13	.45	3.4
MAY 15...	.73	.22	.07	.07	.199	2.8	7.8	1900	162	98	--	--	2.1
JUN 18...	.52	.18	.13	.12	.383	--	1.9	110	29	97	11	.41	3.0
AUG 07...	.58	.26	.19	.19	.576	3.7v	2.5	197	71	99	14	.41	2.5
AUG 22...	.59	.32	.27	.26	.797	6.0	2.0	--	--	--	--	--	3.6
SEP 11...	1.2	.46	.09	.09	.270	5.3	11.2	3010	494	100	--	--	2.9
Date	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)
DEC 19...	79	<.06	184	E.02	<.8	.24	1.1	<10	<.08	38.9	5.0v	5.4	1.16v
JAN 04...	63	<.06	168	<.04	<.8	.19	1.0	<10	<.08	38.9	3.7	4.4	.57
FEB 28...	--	--	187	--	--	--	--	<10	--	37.8	--	--	--
MAR 18...	--	--	169	--	--	--	--	<10	--	36.2	--	--	--
APR 23...	82	<.06	154	E.02	<.8	.26	1.7	<10	<.08	35.9	6.2	5.2	2.99
MAY 15...	--	--	137	--	--	--	--	<10	--	31.9	--	--	--
JUN 18...	86	<.06	176	E.02	<.8	.26	1.8	<10	<.08	44.7	3.0	6.1	1.61
AUG 07...	73	<.06	114	<.04	<.8	.20	1.2	<10	<.08	20.0	2.0	4.6	1.22
AUG 22...	--	--	193	--	--	--	--	<10	--	38.1	--	--	--
SEP 11...	--	--	117	--	--	--	--	<10	--	18.7	--	--	--

08459200 Rio Grande at Pipeline Crossing below Laredo, TX--Continued
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WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82673)
DEC 19...	.9	<1	1170	4.8	2	2.61	<.002	<.004	<.002	<.005	E.005	<.050	<.010
JAN 04...	.6	<1	1010	3.9	2	2.40	<.002	<.004	<.002	<.005	<.007	<.050	<.010
FEB 28...	.6	--	1190	3.0	--	--	<.006	<.006	<.004	<.005	E.006n	<.050	<.010
MAR 18...	.7	--	1170	4.4	--	--	<.006	<.006	<.004	<.005	<.007	<.050	<.010
APR 23...	.6	<1	1090	9.3	2	2.43	<.006	<.006	<.004	<.005	.022	<.050	<.010
MAY 15...	1.0	--	993	7.6	--	--	<.006	<.006	<.004	<.005	.013	<.050	<.010
JUN 18...	.8	<1	1150	6.6	2	2.69	<.006	<.006	<.004	<.005	<.007	<.050	<.010
AUG 07...	.4	<1	777	7.2	1	1.42	<.006	<.006	<.004	<.005	<.007	<.050	<.010
22...	1.0	--	1140	7.4	--	--	<.006	<.006	<.004	<.005	<.007	<.050	<.010
SEP 11...	.6	--	527	8.4	--	--	<.006	<.006	<.004	<.005	.011	<.050	<.010
Date	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
DEC 19...	<.002	<.041	<.020	<.005	<.006	<.018	.010	E.002	.026v	<.005	<.02	<.002	<.009
JAN 04...	<.002	<.041	<.020	<.005	<.006	<.018	E.002	<.006	.016v	<.005	<.02	<.002	<.009
FEB 28...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	.034	<.005	<.02	<.002	<.009
MAR 18...	<.002	<.041	<.150	<.005	<.006	<.018	<.003	<.006	.019	<.005	<.02	<.010	<.009
APR 23...	<.002	E.007	<.020	.006	<.006	<.018	.003	E.005	.022	<.005	<.02	<.002	<.009
MAY 15...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	.007	<.005	<.02	<.002	<.009
JUN 18...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	E.005n	<.005	<.02	<.002	<.009
AUG 07...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.006	.006	<.005	<.02	<.002	<.009
22...	<.002	E.002	<.020	<.005	<.006	<.018	<.003	<.006	.008	<.005	<.02	<.002	<.009
SEP 11...	<.002	E.011	<.020	.007	<.006	<.018	<.003	<.006	.012	<.005	<.02	<.002	<.009
Date	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)
DEC 19...	<.005	<.003	<.004	<.035	<.027	E.003	<.006	<.002	<.007	<.003	<.007	<.006	<.002
JAN 04...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.007	<.006	<.002
FEB 28...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
MAR 18...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
APR 23...	<.005	<.003	<.004	<.035	<.027	.015	<.006	<.002	<.007	<.003	<.010	<.006	<.004
MAY 15...	<.005	<.003	<.004	<.035	<.027	E.011n	<.006	<.002	<.007	<.003	<.010	<.006	<.004
JUN 18...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
AUG 07...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
22...	<.005	<.003	E.002n	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
SEP 11...	<.005	<.003	<.004	<.035	E.008n	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004

08459200 Rio Grande at Pipeline Crossing below Laredo, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)
DEC 19...	<.010	<.011	<.01	<.010	<.011	<.02	<.004	<.011	<.02	<.034	<.02	<.005	<.002
JAN 04...	<.010	<.011	<.01	<.010	<.011	<.02	<.004	<.011	<.02	<.034	<.02	<.005	<.002
FEB 28...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
MAR 18...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.100	<.02	<.005	<.002
APR 23...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
MAY 15...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
JUN 18...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
AUG 07...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
SEP 22...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002
SEP 11...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	<.005	.04	<.034	<.02	<.005	<.002

TRI-
FLUR-
ALIN
WAT FLT
0.7 U
GF, REC
(UG/L)
(82661)

DEC 19... <.009
JAN 04... <.009
FEB 28... <.009
MAR 18... <.009
APR 23... <.009
MAY 15... <.009
JUN 18... <.009
AUG 07... <.009
SEP 22... <.009
SEP 11... <.009

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:

n -- Below the NDV
v -- Analyte detected in laboratory blank

Null value qualifier codes used in this report:

e -- Required equipment not functional/avail

RIO GRANDE BASIN

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, at International Boundary and Water Commission, Chapeno gaging station, 2.5 mi. below 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 DATA: July 1955 to current year.

BIOCHEMICAL DATA: Oct. 1995 to current year.

PESTICIDE DATA: Oct. 1995 to current year.

SEDIMENT DATA: Oct. 1995 to current year.

REMARKS.--The flow is controlled by releases from Falcon Reservoir. Instantaneous discharges published in the table were provided directly by International Boundary and Water Commission. Records of daily mean discharge for water year 2002 are published in International Boundary and Water Commission Water Bulletins Nos. 71 and 72. Since Sept. 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey Texas District office upon request.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	DIS-CHARGE INST. (CMS) (30209)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED SATUR-ATION) (00301)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS /CM) (61726)	CARBON, INORG + ORGANIC, PARTIC. TOTAL (MG/L AS C) (00694)	CARBON, INOR-GANIC, PARTIC. TOTAL (MG/L AS C) (00688)	
DEC 18...	1600	989	28.0	870	8.3	17.5	12.0	128	--	.081	.059	2.4	<.1	
JAN 16...	1530	1240	35.1	900	8.5	15.5	11.9	121	12	.080	.059	1.9	<.1	
MAR 26...	1500	1870	53.0	1030	8.6	20.0	10.2	113	29	.075	.054	3.2	<.1	
MAY 14...	1530	3040	86.1	1120	8.4	25.0	9.3	113	19	.067	.048	3.2	<.1	
AUG 06...	1800	2120	60.0	846	8.2	29.5	6.9	92	17	.077	.056	1.9	<.1	
21...	1500	2190	62.0	847	8.2	29.5	6.4	84	19	.079	.057	2.0	<.1	
Date		NITRO-GEN, PAR-TICULATE WAT FLT SUSP (MG/L AS N) (49570)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
DEC 18...	.28	210	100	58.7	16.1	87.9	3	47	4.90	2	134	113	161	
JAN 16...	.26v	220	100	60.1	16.3	88.5	3	46	5.06	1	141	118	156	
MAR 26...	.34	240	120	66.3	18.4	96.0	3	46	4.96	2	141	119	178	
MAY 14...	.40	240	120	62.7	20.1	109	3	49	5.10	2	140	119	197	
AUG 06...	.29	200	110	52.2	17.5	89.4	3	48	4.93	1	107	90	152	
21...	.31	210	120	54.8	16.7	87.6	3	47	5.25	<1	111	92	150	
Date		CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS. TOTAL (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
DEC 18...	105	.6	9.96	548	514	E.005	.05	<.04	.68	--	--	.33	.63	
JAN 16...	102	.6	9.62	534	510	<.008	E.03	E.04	--	--	--	.37	.57	
MAR 26...	114	.6	8.31	594	559	<.008	<.05	<.04	--	--	--	.32	.71	
MAY 14...	133	.6	8.41	647	608	<.008	<.05	<.04	--	--	--	.34	.74	
AUG 06...	107	.6	9.88	537	488	E.006	<.05	.05	--	.61	.28	.32	.66	
21...	106	.6	10.4	514	488	<.008	E.03	E.04	--	--	--	.34	.72	

08461300 Rio Grande below Falcon Dam, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO- DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC- ULATE TOTAL (MG/L AS C) (00689)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)
DEC 18...	.030	.013	E.004	--	3.9	2.4	48.1	18	98	1v	.45	3.3	96
JAN 16...	.048	.013	E.006	--	3.6v	1.9	46.9	14	97	<1	.52	3.2	88
MAR 26...	.087	.015	E.006	--	--	3.1	116	23	97	--	--	2.8	--
MAY 14...	.082	.021	.010	.031	4.5	3.1	156	19	94	--	--	3.5	--
AUG 06...	.059	.013	E.006	--	--	1.9	68.7	12	96	--	--	3.5	--
21...	.072	.019	.009	.028	5.1	2.0	--	--	--	--	--	3.7	--
Date	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)
DEC 18...	<.06	162	<.04	E.4	.27	1.4	<10	<.08	37.6	1.8v	5.0	1.42v	.6
JAN 16...	<.06	166	<.04	<.8	.29	1.2	<10	<.08	45.5	1.7	5.2	.47r	.7
MAR 26...	--	164	--	--	--	--	<10	--	36.5	--	--	--	.6
MAY 14...	--	196	--	--	--	--	<10	--	39.3	--	--	--	.7
AUG 06...	--	153	--	--	--	--	<10	--	31.6	--	--	--	.7
21...	--	165	--	--	--	--	<10	--	33.0	--	--	--	.8
Date	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82673)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)
DEC 18...	<1	1010	7.1	<1	1.90	<.002	<.004	<.002	<.005	.009	<.050	<.010	<.002
JAN 16...	<1	1070	6.9	<1	1.89	<.006	<.006	<.004	<.005	.010	<.050	<.010	<.002
MAR 26...	--	1070	4.4	--	--	<.006	<.006	<.004	<.005	.011	<.050	<.010	<.002
MAY 14...	--	1190	9.4	--	--	<.006	<.006	<.004	<.005	.012	<.050	<.010	<.002
AUG 06...	--	938	8.1	--	--	<.006	<.006	<.004	<.005	.007	<.050	<.010	<.002
21...	--	926	7.7	--	--	<.006	<.006	<.004	<.005	E.006n	<.050	<.010	<.002
Date	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)
DEC 18...	<.041	<.020	<.005	<.006	<.018	<.003	<.006	.033	<.005	<.02	<.002	<.009	<.005
JAN 16...	<.041	<.020	<.005	<.006	<.018	<.003	<.006	.009v	<.005	<.02	<.002	<.009	<.005
MAR 26...	<.041	<.020	<.005	<.006	<.018	<.003	<.006	.020	<.005	<.02	<.002	<.009	<.005
MAY 14...	<.041	<.020	<.005	<.006	<.018	E.003n	<.006	<.005	<.005	<.02	<.002	<.009	<.005
AUG 06...	<.041	<.020	<.005	<.006	<.018	<.003	<.006	<.005	<.005	<.02	<.002	<.009	<.005
21...	<.041	<.020	<.005	<.006	<.018	<.003	E.002	<.005	<.005	<.02	<.002	<.009	<.005

RIO GRANDE BASIN

08461300 Rio Grande below Falcon Dam, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U (UG/L) (82683)
DEC 18...	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.007	<.006	<.002	<.010
JAN 16...	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022
MAR 26...	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022
MAY 14...	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022
AUG 06...	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022
21...	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022
Date	PHORATE WATER FLTRD 0.7 U (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U (UG/L) (82661)
DEC 18...	<.011	<.01	<.010	<.011	<.02	<.004	<.011	<.02	<.034	<.02	<.005	<.002	<.009
JAN 16...	<.011	<.01	<.010	<.011	<.02	<.004	<.005	E.01	<.034	<.02	<.005	<.002	<.009
MAR 26...	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
MAY 14...	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
AUG 06...	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
21...	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:

n -- Below the NDV
r -- Value verified by rerun, same method
v -- Analyte detected in laboratory blank

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RIO GRANDE BASIN

08470400 Arroyo Colorado at Harlingen, TX
(National stream-quality accounting network)

LOCATION.--Lat 26°10'24", long 97°42'01", Cameron County, Hydrologic Unit 12110208, 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.

DRAINAGE AREA.--182 mi².

PERIOD OF RECORD.--

CHEMICAL DATA: Nov. 1986 to current year.

BIOCHEMICAL DATA: Nov. 1986 to current year.

PESTICIDE DATA: Oct. 1995 to current year.

SEDIMENT DATA: Oct. 1995 to current year.

REMARKS.--Instantaneous discharges published in the table were provided directly by International Boundary and Water Commission. Records of daily mean discharge for water year 2002 are published in International Boundary and Water Commission Water Bulletins Nos. 71 and 72. Since Sept. 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey Texas District office upon request.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	DIS-CHARGE INST. (CMS) (30209)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS /CM) (61726)	CARBON, INORG + ORGANIC TOTAL (MG/L AS C) (00694)	CARBON, INOR-GANIC, PARTIC. TOTAL (MG/L AS C) (00688)	
DEC 05...	1530	195	5.52	3330	8.0	23.5	--e	--	57	.105	.076	7.3	.3	
JAN 17...	1120	150	4.25	4200	7.6	20.0	10.6	119	120	.090	.065	7.0	.7	
FEB 20...	1130	150	4.25	4020	7.5	21.0	9.7	111	170	--	--	--	--	
APR 01...	1500	158	4.47	4150	--e	25.5	12.1	151	190	.100	.073	8.5	1.1	
16...	1200	145	4.11	4120	8.0	25.5	10.4	130	170	.105	.076	9.2	.7	
MAY 30...	1100	186	5.27	4150	8.3	27.5	8.1	105	360	.113	.082	19.8	4.2	
JUN 27...	1410	154	4.36	3660	8.1	28.5	13.0	170	140	.110	.080	8.1	.5	
JUL 31...	1000	107	3.03	3910	8.2	28.0	7.6	99	76	.091v	.067v	4.6	<.1	
AUG 25...	1400	100	2.83	4040	8.1	30.5	7.9	107	100	.111	.082	5.9	<.1	
SEP 18...	1000	731	20.7	840	7.8	28.0	5.2	68	230	.132	.100	.3	<.1	
Date		NITRO-GEN, PAR-TICULATE WAT FLT SUSP (MG/L AS N) (49570)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
DEC 05...	.52	690	490	169	64.8	446	7	58	8.97	2	240	200	615	
JAN 17...	.49v	820	590	197	79.5	579	9	60	10.8	2	280	232	764	
FEB 20...	--	790	570	191	75.4	539	8	59	10.5	2	261	218	712	
APR 01...	.81	840	610	203	79.9	592	9	60	10.7	2	276	230	732	
16...	.77	820	590	195	78.8	581	9	61	10.6	3	266	224	739	
MAY 30...	1.83	860	630	206	82.2	600	9	60	11.2	3	267	224	758	
JUN 27...	.81	760	550	185	71.1	517	8	59	10.8	2	250	209	661	
JUL 31...	.67	750	--	179	73.2	552	9	61	9.80	--	--	--	689	
AUG 25...	.58	830	600	202	78.8	563	9	59	11.5	3	276	232	724	
SEP 18...	.05	170	87	47.6	12.7	99.2	3	55	5.89	<1	104	86	123	

08470400 Arroyo Colorado at Harlingen, TX--Continued
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WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, DIS- SOLVED TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC DIS- SOLVED TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)
DEC 05...	645	.6	21.5	2230	2120	4.25	.171	4.42	E.03	5.5	--	--	.45
JAN 17...	810	.9	21.5	2750	2630	5.49	.243	5.73	.11	6.9	1.1	.57	.68
FEB 20...	749	.9	21.0	2610	2460	4.95	.124	5.08	<.04	6.2	--	--	.49
APR 01...	786	.9	22.7	2700		4.27	.167	4.43	<.04	5.8	--	--	.53
16...	789	.8	22.1	2740	2580	4.30	.100	4.40	<.04	5.9	--	--	.55
MAY 30...	799	.8	20.2	2740	2640	3.66	.079	3.73	<.04	5.8	--	--	.54
JUN 27...	690	1.1	23.6	2380	2300	2.92	.057	2.97	<.04	4.3	--	--	.47
JUL 31...	759	.8	21.8	2560	2430	2.74	.063	2.81	<.04	4.4	--	--	.46
AUG 25...	784	.9	27.4	2700	2560	3.94	.060	4.00	<.04	5.1	--	--	.47
SEP 18...	121	.3	11.5	503	478	.74	.053	.79	<.04	1.8	--	--	.36
Date	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC- ULATE TOTAL (MG/L AS C) (00689)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)
DEC 05...	1.1	.63	.42	.41	1.27	4.7	7.0	188	357	100	--	.51	4.8
JAN 17...	1.2	.74	.50	.49	1.50	4.3v	6.3	108	267	99	15	.46	8.2
FEB 20...	1.2	.74	.46	.45	1.36	--	--	91.9	227	96	--	--	5.7
APR 01...	1.4	.74	.44	.42	1.28	--	7.5	--	--	--	--	.42	6.7
16...	1.5	.79	.44	.40	1.22	--	8.5	197	504	99	32	.68	8.1
MAY 30...	2.0	.92	.39	.38	1.16	5.2	15.6	168	334	97	10	.75v	9.1
JUN 27...	1.3	.60	.33	.34	1.03	4.0	7.6	103	247	99	--	--	10.2
JUL 31...	1.6	.66	.42	.41	1.25	2.1	4.5	101	350	99	5	.68	8.0
AUG 25...	1.1	.82	.61	.61	1.87	6.6	5.9	79.4	294	100	--	--	9.5
SEP 18...	1.0	.68	.33	.26	.794	6.7	.3	653	331	93	6	.61	7.8
Date	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM, DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM, DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)
DEC 05...	79	<.10	1120	<.07	<.8	.55	3.6	<30	.16	96.4	12.1	15.7	<.10
JAN 17...	71	<.10	1460	E.05	<.8	.87	3.1	<30	.18	133r	9.3	19.6	5.65
FEB 20...	--	--	1420	--	--	--	--	<30	--	126	--	--	--
APR 01...	80	<.06	1450	.07n	<.8	.96	5.8	E8	.16	125	--	20.2	2.32
16...	71	<.06	1400	.06n	<.8	.83	4.3	<10	.14n	123	3.1	21.0	1.94
MAY 30...	80	<.10	1440	E.07n	<.8	1.09	4.4	<20	E.14n	125	1.8	21.9	5.80
JUN 27...	--	--	1260	--	--	--	--	<30	--	113	--	--	--
JUL 31...	72	<.10	1530	E.05	<.8	1.05	3.9	<10	.22	122	2.9	19.8	1.61
AUG 25...	--	--	1310	--	--	--	--	<30	--	118	--	--	--
SEP 18...	39	<.06	220	E.02	<.8	.24	1.8	<10	E.06	19.8	.9	5.8	2.68

08470400 Arroyo Colorado at Harlingen, TX--Continued
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WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82673)
DEC 05...	<.7	<2	3310	11.3	4	7.77	<.002	<.004	<.002	<.005	.064	<.050	<.010
JAN 17...	2.7r	<2	3940	13.9	5	9.40	<.006	<.006	<.004	<.005	.031	<.050	<.010
FEB 20...	<.7	--	3860	12.5	--	--	<.006	<.006	<.004	<.005	1.66	<.050	<.010
APR 01...	2.1	<1	3890	11.8	4	10.1	<.006	<.006	<.004	<.005	.489	<.050	<.010
APR 16...	4.8	<1	3830	13.2	4	9.12	<.006	<.006	<.004	<.005	3.75	<.050	<.010
MAY 30...	2.8	<2	3920	17.5	3	9.92	<.006	<.006	<.004	<.005	.173	<.050	<.010
JUN 27...	2.6	--	3550	16.5	--	--	<.006	<.006	<.004	<.005	.070	<.050	<.010
JUL 31...	2.8	<1	3680	16.0	3	9.04	<.006	<.006	<.004	<.005	.036	<.050	<.010
AUG 25...	4.1	--	3930	16.6	--	--	<.006	<.006	<.004	<.005	.038	<.050	<.010
SEP 18...	.5	<1	740	17.1	3	1.68	<.006	<.006	<.018	<.005	.149	<.050	<.010
Date	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
DEC 05...	<.002	E.007	<.020	<.005	<.006	<.018	E.002	E.019	.229	<.005	<.02	<.002	<.009
JAN 17...	<.002	<.041	<.020	<.005	<.006	<.018	E.003	E.012	.016v	<.005	<.02	<.002	<.009
FEB 20...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	E.067	.166	<.005	<.02	<.002	<.009
APR 01...	<.002	<.041	<.020	<.005	<.006	<.018	<.005	E.026	.020	<.005	<.02	<.002	<.009
APR 16...	<.002	<.041	<.020	<.005	<.006	<.018	.005	E.224	.013	<.005	<.02	<.002	<.009
MAY 30...	<.002	<.041	<.020	<.007	<.006	<.018	E.002n	E.087	.009	<.005	<.02	<.002	<.009
JUN 27...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	E.034	.006	<.005	<.02	<.002	<.009
JUL 31...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	E.023	E.005	<.005	<.02	<.002	<.009
AUG 25...	<.002	<.041	<.020	<.005	<.006	<.018	<.003	E.029	.465	<.005	<.02	<.002	<.009
SEP 18...	<.002	E.017	<.020	.015	<.006	<.018	.052	E.029	.631	<.005	--u	<.002	<.009
Date	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FLTRD 0.7 U GF, REC (UG/L) (82669)
DEC 05...	<.005	<.003	<.004	<.035	E.007	E.003	<.006	<.002	<.007	<.003	<.007	<.006	<.002
JAN 17...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
FEB 20...	<.005	<.003	<.004	.306	<.027	E.004	<.006	<.002	<.007	<.003	<.010	<.006	<.004
APR 01...	<.005	<.003	<.004	<.035	<.027	E.012n	<.006	<.005	<.007	<.003	<.010	<.006	<.004
APR 16...	<.005	<.003	<.004	.097	<.027	.014	<.006	<.002	<.007	E.003	<.010	<.006	<.004
MAY 30...	<.005	<.003	E.003n	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
JUN 27...	<.005	<.003	.005	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.020	<.004
JUL 31...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
AUG 25...	<.005	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004
SEP 18...	<.005	<.003	<.004	<.035	E.013n	<.013	<.006	<.002	<.010	<.003	<.010	<.006	<.004

08470400 Arroyo Colorado at Harlingen, TX--Continued
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WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)
DEC 05...	<.010	<.011	E.01	<.010	<.011	<.02	<.004	.026	<.02	<.034	<.02	<.005	<.002
JAN 17...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	.013	<.02	<.034	<.02	<.005	<.002
FEB 20...	<.022	<.011	E.01	<.010	<.011	<.02	<.004	.021	<.02	E.036	<.02	<.005	<.002
APR 01...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	.041	<.02	<.050	<.02	<.005	<.002
APR 16...	.039	<.011	<.01	<.010	<.011	<.02	<.004	.063	<.02	<.034	<.02	<.005	<.002
MAY 30...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	.022	<.02	<.034	<.02	<.005	<.002
JUN 27...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	.011	<.02	<.034	<.02	<.005	<.002
JUL 31...	<.022	<.011	M	<.010	<.011	<.02	<.004	.009	<.02	<.034	<.02	<.005	<.002
AUG 25...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	.024	<.02	<.034	<.02	<.005	<.002
SEP 18...	<.022	<.011	<.01	<.010	<.011	<.02	<.004	.026	<.02	<.034	<.02	<.005	<.002

TRI-
FLUR-
ALIN
WAT FLT
0.7 U
GF, REC
(UG/L)
(82661)

DEC 05... <.009
JAN 17... <.009
FEB 20... <.009
APR 01... <.009
APR 16... E.001t
MAY 30... E.007n
JUN 27... <.009
JUL 31... <.009
AUG 25... <.009
SEP 18... E.005n

Remark codes used in this report:

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

Value qualifier codes used in this report:

n -- Below the NDV
r -- Value verified by rerun, same method
t -- Below the long-term MDL
v -- Analyte detected in laboratory blank

Null value qualifier codes used in this report:

e -- Required equipment not functional/avail
u -- Unable to determine-matrix interference

RIO GRANDE BASIN

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, 900 feet above International Boundary and Water Commission gaging station, 1,000 ft downstream from El Jardin pumping plant on earthen dam, 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 DATA: Jan. 1932, Mar. 1943 to Feb. 1944, Feb. 1966 to current year.
BIOCHEMICAL DATA: Oct. 1974 to current year.
PESTICIDE DATA: May 1975 to May 1982, Oct. 1995 to current year.
SEDIMENT DATA: Feb. 1996 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Mar. 1943 to Feb. 1944, Apr. 1967 to Sept. 1983.
WATER TEMPERATURE: Oct. 1966 to Sept. 1983.
SUSPENDED SEDIMENT DISCHARGE: Feb. 1966 to Sept. 1983.

REMARKS.--The flow is controlled largely by releases from Falcon Reservoir. Instantaneous discharges published in the table were provided directly by International Boundary and Water Commission. Records of daily mean discharge for water year 2002 are published in International Boundary and Water Commission Water Bulletins Nos. 71 and 72. Since Sept. 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey Texas District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,130 microsiemens/cm, May 29, 1972; minimum daily, 337 microsiemens/cm, 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 LOADS: Maximum daily, 181,000 tons, Feb. 28, 1983; minimum daily, 0.12 tons, Aug. 26, 1983.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	DIS-CHARGE INST. (CMS) (30209)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS) /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS) /CM) (61726)	CARBON, INORG + ORGANIC TOTAL (MG/L AS C) (00694)	CARBON, INOR-GANIC, PARTIC. TOTAL (MG/L AS C) (00688)	
MAY 29...	1230	2370	67.1	1230	--e	28.5	3.1	41	6.8	.088	.063	1.3	<.1	
SEP 17...	1500	2230	63.2	932	7.4	30.0	1.9	25	4.4	.089	.065	7.2	1.1	
Date		NITRO-GEN,PAR TICULTE WAT FLT SUSP (MG/L AS N) (49570)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
MAY 29...	.26	290	160	76.7	24.2	135	3	50	5.76	<1	156	129	235	
SEP 17...	.46	220	--	58.9	17.1	102	3	50	5.89	--	--	--	159	
Date		CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
MAY 29...	161	.7	10.5	769	.26	.020	.275	.029	.77	.46	.35	.38	.49	
SEP 17...	120	.6	11.7	572	.11	.012	.118	.044	.54	.38	.31	.35	.43	
Date		PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
MAY 29...	.158	.150	.122	.374	5.1	1.3	19.2	3.0	79	<1	.79	3.4	126	
SEP 17...	.20	.195	.173	.530	7.1	6.1	12.0	2.0	94	<1	.70	4.9	103	

08475000 Rio Grande near Brownsville, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM, DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM, DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)
MAY 29...	<.06	269	E.02	<.8	.24	1.5	<10	<.08	47.3	15.1	--	2.63	.6
SEP 17...	<.06	156	<.04	<.8	.16	1.2	<10	<.08	29.5	14.1	5.6	2.78	E.3
Date	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82673)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)
MAY 29...	<1	1250	7.2	2	3.06	<.006	<.006	<.004	<.005	.019	<.050	<.010	<.002
SEP 17...	<1	980	7.0	3	1.78	<.006	<.006	<.004	<.005	.024	<.050	<.010	<.002
Date	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)
MAY 29...	<.041	<.020	.007	<.006	<.018	<.003	E.005	.010	<.005	<.02	<.002	<.009	<.005
SEP 17...	E.008	<.030	<.010	<.006	<.018	<.003	E.013	.011	<.005	--u	<.002	<.009	<.005
Date	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN WATER FLTRD 0.7 U DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)
MAY 29...	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022
SEP 17...	<.003	<.004	<.035	<.027	<.013	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022
Date	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
MAY 29...	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009
SEP 17...	<.011	<.01	<.010	<.011	<.02	<.004	<.005	<.02	<.034	<.02	<.005	<.002	<.009

Remark codes used in this report:

< -- Less than
E -- Estimated value

Null value qualifier codes used in this report:

e -- Required equipment not functional/avail
u -- Unable to determine-matrix interference

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The U.S. Geological Survey collects limited streamflow data at sites other than continuous stream-gaging stations because the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage of those events. The data collected for special reasons are called measurements at miscellaneous sites.

Streamflow data collected at partial-record stations where water-quality data other than observations of water temperature are not obtained are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations; the second is a table of annual maximum stage and (or) discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low and high flows are given in a third table. Discharge measurements and water-quality data collected at partial-record stations are presented in downstream order in the section of this report entitled "Gaging-station records."

Low-flow partial-record stations

Measurements of streamflow at low-flow partial-record stations that are not published in the gaging-station section are given in the following table. Most of the measurements of low flow were made during periods when streamflow was sustained primarily by ground-water discharge. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will indicate the low-flow potential of the stream. The years listed in the column headed "Period of record" identifies the water years in which measurements were made at the same or at practically the same site.

Discharge measurements made at low-flow partial-record station during water year 2002

Station number	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Dis-charge (ft ³ /s)
Guadalupe River Basin						
08168000	Hueco Springs near New Braunfels, TX	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.	--	1944-2002	10-05-01 12-04-01 01-18-02 03-15-02 05-10-02 06-27-02 08-19-02	112 88.3 93.4 77.5 53.4 26.8 109
08177818	San Antonio Springs at San Antonio, TX	Lat 29°27'56", long 98°28'04", Bexar County, just below Hildebrand Ave. in San Antonio.	--	1951-52, 1959-62, 1972, 1974-77, 1979-2002	10-18-01 05-10-02 07-23-02	30.1 0 147
08178090	San Pedro Springs at San Antonio, TX	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, 1979-2002	10-18-01 12-27-01 01-29-02 03-28-02 05-10-02 07-23-02	9.70 15.6 13.6 9.78 4.86 22.1
Nueces River Basin						
08204000	Leona River Springflow near Uvalde TX	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.	--	1939-65?, 1966-2002	10-12-01 12-04-01 01-29-01 03-19-02 05-09-02 06-17-02 08-13-02	17.4 7.76 9.63 5.85 6.36 3.27 5.94
Rio Grande Basin						
08425500	Phantom Lake Spring near Toyahvale, TX	Lat 30°56'01", long 103°50'43", Jeff Davis County, 375 ft down-stream from source of spring, 3.5 mi southwest of Toyahvale, and 7.0 mi southwest of Balmorhea.	--	1931-33?, 1934, 1941, 1942-66?, 1967-2002	12-19-01 01-30-02 03-27-02 05-14-02 06-26-02 08-28-02	0 0 0 0 0 0

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record station during water year 2002--Continued

					Measurements	
Station number	Station name	Location	Drainage area (mi ²)	Period of record	Date	Dis-charge (ft ³ /s)
Rio Grande Basin--Continued						
08427500	San Solomon Springs at Toyahvale, TX	Lat 30°56'34", long 103°47'16", Reeves County, measurement of total spring flow from all canals at Balmorhea State Park, and 4.0 mi southwest of Balmorhea.	--	1919, 1922-25, 1931-33†, 1934-36, 1941-65†, 1966-86, 2002	12-19-01 03-27-02 05-14-02 06-26-02 08-28-02	24.1 24.6 25.5 24.4 20.4

† Operated as a continuous-record station.

‡/ Measurements furnished by 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 relation 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 facilitate 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 occurring between inspection 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 2002

Station name and number	Location	Period of record	Water Year 2001 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft ³ /s)	Date	Gage height (ft)	Dis- charge (ft ³ /s)
Guadalupe River Basin								
San Antonio River at Navarro St., San Antonio, TX 08177900	Lat 29°25'50", long 98°29'24", Bexar County, at bridge on Navarro Street in San Antonio. Drainage area is unknown.	1973- 2002	07-01-02	*637.04	--	10-17-98	*643.72	--
San Pedro Creek at Santa Rosa St., San Antonio, TX 08178100	Lat 29°25'51", long 98°29'49", Bexar County, at bridge on Santa Rosa Street in San Antonio. Drainage area is unknown.	1973- 2002	11-15-01	*639.95	--	07-16-90	*648.38	--
Martinez Creek at Fredericksburg Rd., San Antonio, TX 08178350	Lat 29°27'22", long 98°31'04", Bexar County, at bridge on Fredericksburg Road in San Antonio. Drainage area is unknown.	1973- 2002	07-01-02	*684.42	--	10-17-98	*685.46	--
San Fernando Creek Basin								
Tranquitas Creek at Kingsville, TX 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 upstream from San Fernando Creek, and 5.9 mi downstream from Tranquitas Dam. Drainage area is 48.5 mi ² .	1965-82, 1984-90, 1992- 2002	11-16-01	4.04	--	08-10-80	6.88	--

- * Elevation, in feet above sea level.
- ‡ Operated as a continuous-record station.
- a From floodmark.
- i From indirect measurement of peak flow.

Discharge measurements made at miscellaneous sites during water year 2002

Station number	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft ³ /s)
Guadalupe River Basin						
Welch Springs near Mountain Home, TX 08165700	Guadalupe	Lat 30°10'11", long 99°21'51", Kerr County on Cedar Creek Ranch, southeast of Mountain Home.	--	2001-02	06-06-01	2.37
					07-10-01	2.10
					08-07-01	1.76
					09-20-01	2.30
					10-16-01	1.38
					11-13-01	1.51
					12-12-01	2.48
					01-22-02	1.71
					02-20-02	1.25
					03-28-02	1.46
					04-18-02	1.44
					05-29-02	1.79
					Fessenden Springs nr Mountain Home, TX 08165710	Guadalupe
07-10-01	4.92					
08-07-01	5.77					
09-11-01	5.16					
09-20-01	5.32					
10-16-01	5.42					
11-13-01	4.79					
12-12-01	6.38					
01-22-02	6.00					
02-20-02	5.52					
03-28-02	5.45					
04-18-02	4.94					
05-29-02	5.58					
San Antonio River Basin						
Medina River at English Crossing nr Pipe Creek, TX 08178990	San Antonio	Lat 29°40'53", long 98°58'32", Bandera County, at English Crossing Road, 4.1 miles southwest of Pipe Creek.	474	1996-97 2001-02	05-17-01	293
					07-10-01	66.7
					08-17-01	24.0
					09-10-01	200
					09-18-01	111
					10-05-01	77.0
					11-19-01	434
					11-26-01	281
					12-12-01	236
					01-09-02	159
					01-23-02	133
					03-11-02	81.2
					04-15-02	83.9
					05-09-02	46.8
					06-13-02	29.6
Red Bluff Creek at FM 1283 nr Pipe Creek, TX 08179110	San Antonio	Lat 29°40'23", long 98°57'36", Bandera County, at FM 1283, 3.9 miles southwest of Pipe Creek.	57.9	2001-02	10-02-02	264
					11-22-02	343
					05-17-01	8.70
					07-10-01	0.00
					08-17-01	0.00
					09-11-01	58.2
					09-19-01	15.6
09-27-01	7.06					
10-12-01	3.55					
11-20-01	64.4					
11-28-01	24.4					
12-12-01	55.6					
01-09-02	11.5					
01-23-02	4.08					
03-11-02	0.00					
04-15-02	1.00					
05-09-02	0.15					
06-13-02	0.00					
08-20-02	6.44					
10-04-02	3.60					
11-25-02	11.9					

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Station number	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft ³ /s)
San Antonio River Basin--Continued						
Bruins Creek nr Pipe Creek, TX 08179240	San Antonio	Lat 29°39'23", long 98°59'17", Bandera County, upstream of inflow to Medina Lake, 5.8 miles southwest of Pipe Creek.	8.76	2001-02	07-10-01	0.02
					09-10-01	2.53
					09-18-01	1.14
					09-27-01	0.91
					10-05-01	0.44
					11-14-01	0.34
					11-20-01	1.46
					11-26-01	0.88
					12-12-01	4.43
					01-09-02	1.18
					01-23-02	1.20
					03-11-02	0.00
					04-15-02	0.30
					05-09-02	0.16
					06-13-02	0
					08-16-02	3.57
					10-02-02	3.20
					11-25-02	3.84
Rocky Creek nr Pipe Creek, TX 08179260	San Antonio	Lat 29°37'15", long 98°59'57", Bandera County, at County Road 151, 7.3 miles southwest of Pipe Creek.	5.22	2001-02	07-10-01	0
					09-10-01	2.83
					09-18-01	0
					11-20-01	0
					12-12-01	1.36
					01-09-02	0
Elm Creek nr Pipe Creek, TX 08179300	San Antonio	Lat 29°36'15", long 98°55'45", Bandera County, downstream of FM 1283, upstream of inflow to Medina Lake, 9.5 miles south of Pipe Creek.	12.7	2001-02	05-17-01	0
					07-10-01	0.03
					08-17-01	0
					09-11-01	3.33
					09-14-01	3.93
					09-19-01	2.70
					09-27-01	1.17
					10-12-01	0.59
					11-20-01	2.13
					11-28-01	2.06
					12-12-01	1.08
					01-09-02	0.57
					01-23-02	0.60
					03-11-02	0
					04-15-02	0.07
					05-09-02	0.05
					06-13-02	0
					08-20-02	0.85
					10-04-02	1.13
					11-25-02	1.23
Koenig Creek nr Riomedina, TX 08179530	San Antonio	Lat 29°31'57", long 98°56'14", Medina County, at County Road 271, 4.5 miles northwest of Riomedina.	3.69	2001-02	05-21-01	3.40
					06-25-01	3.80
					08-07-01	3.03
					09-11-01	3.52
					11-07-01	3.00
					01-10-02	3.00

Station number	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft ³ /s)
San Antonio River Basin--Continued						
Cibolo Creek at Ralph Fair Rd. blw Boerne, TX 08183950	San Antonio	Lat 29°44'37", long 98°37'24", Comal County about 1.6 miles downstream from the confluence with Balcones Creek.	112	2001-02	09-06-01	564
					09-07-01	227
					09-07-01	214
					09-08-01	148
					09-09-01	78.6
					09-10-01	52.7
					09-11-01	36.3
					09-12-01	29.3
					07-08-02	1,350
					07-09-02	1,200
					07-10-02	1,110
					07-12-02	540
					07-22-02	121
Cibolo Creek at Blanco Rd. abv Bulverde, TX 08183970	San Antonio	Lat 29°44'33", long 98°30'51", Comal County about 8.1 miles upstream from U.S. Highway 281.	154	2001-02	09-07-01	258
					09-07-01	234
					09-07-01	185
					09-08-01	115
					09-09-01	55
					09-10-01	26.1
					09-10-01	22.6
					09-11-01	9.5
					09-11-01	8.6
					09-12-01	1.4
					07-09-02	1,380
					07-10-02	1,310
					07-13-02	420
Cibolo Creek at Burverde Rd. nr Bulverde, TX 08183990	San Antonio	Lat 29°43'59", long 98°27'08", Comal County about 1.75 miles upstream from U.S. Highway 281.	191	2002	07-08-02	1,528
					07-09-02	1,315
					07-10-02	1,220
					07-11-02	1,054
					07-13-02	416
					07-22-02	106
Cibolo Creek at U.S. Hwy 281 nr Bulverde, TX 08183995	San Antonio	Lat 29°43'09", long 98°26'36", Comal County.	195	2001	09-06-01	597
					09-07-01	246
					09-07-01	178
					09-08-01	111
					09-09-01	42.8
					09-10-01	9.3
Cibolo Creek at Smithson Valley Rd. nr Bulverde, TX 08184050	San Antonio	Lat 29°44'54", long 98°24'28", Comal County about 6.5 miles downstream of U.S. Highway 281.	230	2001	09-10-01	19.9
Cibolo Creek at Farm Rd. 1863 blw Bulverde, TX 08184300	San Antonio	Lat 29°43'58", long 98°21'23", Comal County, about 11.7 miles downstream from U.S. Highway 281.	235	2001-03	09-08-01	112
					09-09-01	36.4
					09-10-01	7.5
					07-09-02	1,407
					07-10-02	1,230
					07-11-02	1,058
					07-12-02	877
					07-19-02	383

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

379

Discharge measurements made at miscellaneous sites during water year 2002--Continued

Station number	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft ³ /s)
Rio Grande Basin						
Alamito Creek nr Presidio, TX 08374000	Rio Grande	Lat 29°31'25", long 104°17'15", Presidio County on downstream side of highway bridge on FM 170, about 0.25 mi upstream from the confluence with the Rio Grande, and about 6 mi southeast of Presidio.	1,504	1999-2002	10-23-01	0
					12-18-01	0.34
					01-29-02	0.32
					03-26-02	0.19
					05-13-02	0
					06-25-02	0.33
Terlingua Creek nr Terlingua, TX 08374500	Rio Grande	Lat 29°11'50", long 103°36'20", Brewster County, on left bank, 2.6 mi upstream from the confluence with the Rio Grande, and about 8.5 mi south of Terlingua.	1,070	1999-2002	10-22-01	1.13
					12-18-01	1.19
					01-29-02	1.12
					03-26-02	1.10
					05-13-02	0.66
					06-25-02	0.45
Devils River at Pafford Crossing nr Comstock, TX 08449400	Rio Grande	Lat 29°40'35", long 101°00'00", Val Verde County, on left bank, about 11.5 mi east of Comstock, and about 25.5 mi upstream from the confluence with the Rio Grande.	3,961	1999-2002	10-04-01	212
					12-17-01	266
					01-18-02	242
					03-20-02	234
					05-23-02	197
					06-13-02	150

‡ Operated as a continuous-record station.

1/ Measurements furnished by International Boundary and Water Commission.

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CALENDAR FOR WATER YEAR 2002

2001

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6					1	2	3							1
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22
28	29	30	31				25	26	27	28	29	30		23	24	25	26	27	28	29
														30	31					

2002

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2						1	2
6	7	8	9	10	11	12	3	4	5	6	7	8	9	3	4	5	6	7	8	9
13	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16
20	21	22	23	24	25	26	17	18	19	20	21	22	23	17	18	19	20	21	22	23
27	28	29	30	31			24	25	26	27	28			24	25	26	27	28	29	30
														31						

APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6				1	2	3	4							1
7	8	9	10	11	12	13	5	6	7	8	9	10	11	2	3	4	5	6	7	8
14	15	16	17	18	19	20	12	13	14	15	16	17	18	9	10	11	12	13	14	15
21	22	23	24	25	26	27	19	20	21	22	23	24	25	16	17	18	19	20	21	22
28	29	30					26	27	28	29	30	31		23	24	25	26	27	28	29
														30						

JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6					1	2	3	1	2	3	4	5	6	7
7	8	9	10	11	12	13	4	5	6	7	8	9	10	8	9	10	11	12	13	14
14	15	16	17	18	19	20	11	12	13	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	22	23	24	25	26	27	28
28	29	30	31				25	26	27	28	29	30	31	29	30					

CONVERSION FACTORS

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

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$