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

Water Resources Data
Texas
Water Year 1999

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

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

Water-Data Report TX-99-5

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

UNITED STATES DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

GEOLOGICAL SURVEY

Charles G. Groat, Director

For additional information write to:
District Chief, Water Resources Division
U.S. Geological Survey
8027 Exchange Dr.
Austin, Texas 78754-4733

2000

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:

Mick Baldys
Mike E. Dorsey
Debra A. Sneck-Fahrer
Bradley L. Mansfield
Addis M. Miller III
Jimmy G. Pond
Roberto Perez
Jeffery T. Sandlin
Ken VanZandt

The following individuals contributed to the collection, processing and preparation of the data:

Houston Subdistrict Office

Cindy Billington
Jacqueline Braden
Dexter W. Brown
J. Pat Bruchmiller
Mike R. Burnich
Al Campodonico
Laura S. Coplin
Jeff W. East
Lee B. Goldstein
Jim S. Hutchison
Mark C. Kasmarek
Patrick O. Keefe
Dale Melton
Edna M. Paul
S. Lyle Phipps
Cervando S. Ramirez
Horatio X. Santos
Jasper D. Schaer

San Antonio Subdistrict Office

James M. Briers
Allan K. Clark
Allen L. Furlow
Jon R. Gilhousen
Ken C. Grimm
C.A. Hartmann, Jr.
Stephanie Marr
Cecillo R. Martinez
Vidal Mendoza
Michael Nyman
Cassi L. Otero
Joan T. Patton
Jorge O. Pena
Brian L. Petri
Roel Reyna
Richard N. Slattery
John A. Tomlinson
John F. Wojcik

Fort Worth Field Office

Patrick B. Allen
Jack D. Benton
Martin J. Danz
Judith H. Donohue
Vernon L. Hastings
Fred Liscum
Paul W. McKee
G. Dan McElhany
Darryl G. Pinion
Clyde T. Schoultz
J.M. Taylor
David V. Tudor

Austin Field Office

Freeman L. Andrews
Searcy M. Jacobs
Milton M. Miller
Vemezia Muniz
C.E. Ranzau
Keith R. Snider
Randy A. Samuelson
Milton W. Sunvison
K. Craig Weiss

Wichita Falls Field Office

Paul Bennett
Benjamin J. Carr
Jackie D. Kelly
Michael T. Pettibon
Anita M. Ross

San Angelo Field Office

Hector H. Garza
Henry Jacques, Jr.
Lawanna M. Kiser
James B. Schiller
Tim E. Teagarden

This report was prepared in cooperation with the State of Texas and other agencies under the supervision of Jayne E. May, District Data Chief.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	April 2000	Annual--Oct. 1, 1998 to Sept. 30, 1999

4. TITLE AND SUBTITLE

Water Resources Data--Texas, Water Year 1999, Volume 5
Guadalupe River, Nueces River, Rio Grande River Basins
and Intervening Coastal Basins

5. FUNDING NUMBERS

6. AUTHOR(S)

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

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

U.S. Geological Survey, Water Resources Division
Texas District
8027 Exchange Dr.
Austin, TX 78754-4733

8. PERFORMING ORGANIZATION REPORT NUMBER

USGS-WDR-TX-99-5

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

U.S. Geological Survey, Water Resources Division
Texas District
8027 Exchange Dr.
Austin, TX 78754-4733

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

USGS-WDR-TX-99-5

11. SUPPLEMENTARY NOTES

Prepared in cooperation with Federal, State, and local agencies.

12a. DISTRIBUTION / AVAILABILITY STATEMENT

No restriction on distribution.
This report may be purchased from
National Technical Information Service
Springfield, VA 22161

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

Water-resources data for the 1999 water year for Texas are presented in six volumes, and consist of records of stage, discharge, and water quality of streams and canals; stage, contents, and water-quality of lakes and reservoirs; and water levels and water quality of ground-water wells. Volume 5 contains records for water discharge at 76 gaging stations; stage only at 1 gaging stations; stage and contents at 4 lakes and reservoirs; water quality at 38 gaging stations; and data for 30 partial-record stations comprised of 3 flood-hydrograph, 14 low-flow, and 8 crest-stage, and 5 miscellaneous stations. Also included are lists of discontinued surface-water discharge or stage-only stations and discontinued surface-water-quality stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Federal, State, and local agencies in Texas. Records for a few pertinent stations in the bordering States also are included.

14. SUBJECT TERMS

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

15. NUMBER OF PAGES

414

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	

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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	30
Guadalupe River at Hunt (d) (p)	08165500	32
Guadalupe River at Kerrville (d)	08166200	36
Guadalupe River at Comfort (d) (p)	08167000	38
Guadalupe River near Spring Branch (d)	08167500	42
Canyon Lake near New Braunfels (e) (p)	08167700	44
Guadalupe River at Sattler (d)	08167800	48
Guadalupe River above Comal River at New Braunfels (d)	08168500	50
Comal River:		
Comal Springs at New Braunfels (d)	08168710	52
Comal River at New Braunfels (d) (c) (t) (s)	08169000	54
San Marcos Springs at San Marcos (d)	08170000	56
San Marcos River at San Marcos (d)	08170500	58
Blanco River at Wimberley (d)	08171000	60
Blanco River near Kyle (d) (p)	08171300	62
San Marcos River at Luling (d) (c) (t)	08172000	66
Plum Creek at Lockhart (d)	08172400	70
Guadalupe River at Gonzales (d)	08173900	72
Sandies Creek near Westhoff (d) (c) (t)	08175000	74
Guadalupe River at Cuero (d)	08175800	78
Guadalupe River at Victoria (d)	08176500	80
Coleto Creek:		
Fifteenmile Creek near Weser (d)	08176550	82
Coleto Creek at Arnold Road Crossing near Schroeder (d)	08176900	84
Perdido Creek at Farm to Market Road 622 near Fannin (d)	08177300	86
Coleto Creek Reservoir near Victoria (e)	08177400	88
Coleto Creek near Victoria (d)	08177500	90
SAN ANTONIO RIVER BASIN		
San Antonio River:		
Olmos Creek at Dresden Drive, San Antonio (d) (c) (b) (t)	08177700	92
San Antonio River at Mitchell Street, San Antonio (d) (c) (b) (t)	08178050	96
San Antonio River at Loop 410 at San Antonio (d) (c) (t)	08178565	100
Salado Creek at Wilderness Road at San Antonio (d) (c) (t) (b)	08178585	110
Camp Creek at Wilderness Trail at San Antonio (c) (t) (b)	08178602	116
Salado Creek (upper station) at San Antonio (d) (c) (b) (t)	08178700	120
Salado Creek (lower station) at San Antonio (d) (c) (t) (s)	08178800	124
Medina River at Bandera (d)	08178880	134
Medina Lake near San Antonio (e) (p)	08179500	136
Medina River at La Coste (d) (c) (b) (t) (s)	08180640	140
Medina River near Macdona (d) (c) (b) (t) (s)	08180700	156
Medina River near Somerset (d) (c) (b) (t) (s)	08180800	164
Leon Creek:		
Culebra Creek:		
Helotes Creek at Helotes (d) (c) (b) (t)	08181400	174
Ingram Road Outfall at Leon Creek Tributary at San Antonio (c) (b) (t)	08181440	178
Leon Creek at Interstate Highway 35 at San Antonio (d) (c) (t)	08181480	184
Medina River at San Antonio (d) (t) (c)	08181500	194
San Antonio River near Elmendorf (d) (t) (c) (s)	08181800	204
San Antonio River near Falls City (d)	08183500	216
Cibolo Creek at Interstate Highway 10 above Boerne (d)	08183850	218
Cibolo Creek at Selma (d) (p)	08185000	220
Cibolo Creek near Falls City (d)	08186000	224
San Antonio River at Goliad (d)	08188500	226
Guadalupe-Blanco River Authority Calhoun Canal Pump Station near Long Mott (d)	08188600	228
Guadalupe River near Tivoli (e) (c) (t)	08188800	230

	Station number	Page
WESTERN GULF OF MEXICO BASINS--Continued		
COPANO CREEK BASIN		
Copano Creek near Refugio (d)	08189200	236
MISSION RIVER BASIN		
Mission River at Refugio (d)	08189500	238
ARANSAS RIVER BASIN		
Aransas River near Skidmore (d)	08189700	240
NUECES RIVER BASIN		
Nueces River at Laguna (d) (p)	08190000	244
West Nueces River near Brackettville (d) (p)	08190500	248
Nueces River below Uvalde (d) (p)	08192000	252
Nueces River near Asherton (d)	08193000	256
Nueces River at Cotulla (d)	08194000	258
San Casimiro Creek near Freer (d)	08194200	260
Nueces River near Tilden (d) (c) (t)	08194500	262
Frio River at Concan (d) (p)	08195000	266
Dry Frio River near Reagan Wells (d)	08196000	270
Frio River below Dry Frio River near Uvalde (d)	08197500	272
Sabinal River near Sabinal (d)	08198000	274
Sabinal River at Sabinal (d)	08198500	276
Hondo Creek near Tarpley (d)	08200000	278
Hondo Creek at King Waterhole near Hondo (d)	08200700	280
Seco Creek at Miller Ranch near Utopia (d) (c) (b) (t)	08201500	282
Seco Creek Reservoir Inflow near Utopia (d)	08202450	286
Seco Creek at Rowe Ranch near D'Hanis (d)	08202700	288
Frio River near Derby (d)	08205500	290
Frio River at Tilden (d) (c) (t)	08206600	292
San Miguel Creek near Tilden (d)	08206700	296
Choke Canyon Reservoir near Three Rivers (e) (c) (t) (s)	08206900	298
Choke Canyon Reservoir (Outflow Works Channel) near Three Rivers (d)	08206910	308
Atascosa River at Whitsett (d)	08208000	310
Nueces River near Three Rivers (d) (c) (t)	08210000	312
Lake Corpus Christi near Mathis (e) (c) (t) (s)	08210500	316
Nueces River near Mathis (d)	08211000	324
Nueces River at Bluntzer (d)	08211200	326
Nueces River at Calallen (d)	08211500	328
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OSO CREEK BASIN		
Oso Creek at Corpus Christi (d)	08211520	336
COASTAL BASIN		
Los Olmos Creek near Falfurias (d)	08212400	338
RIO GRANDE BASIN		
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Rio Grande below Rio Conchos near Presidio (c) (t)	08374200	348
Rio Grande at Foster Ranch near Langtry (c) (t) (s)	08377200	352
Pecos River near Girvin (d)	08446500	356
Pecos River near Langtry (c) (t) (s)	08447410	358
Rio Grande below Amistad Dam near Del Rio (c) (t) (s)	08450900	364
Rio Grande at Pipeline Crossing below Laredo (d) (c) (t) (s)	08459200	368
Rio Grande below Falcon Dam (c) (t) (s)	08461300	378
Rio Grande at Fort Ringgold, Rio Grande City (c) (t)	08464700	382
Rio Grande near Los Ebanos (c) (t)	08466300	384
Rio Grande below Anzalduas Dam (c) (t)	08469200	386
Arroyo Colorado at Harlingen (c) (t) (s)	08470400	388
Rio Grande near Brownsville (c) (t) (s)	08475000	392

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

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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Johnson Creek near Ingram (d)	08166000	114	1942-60, 1962-93
Guadalupe River above Bear Creek at Kerrville (d)	08166140*	494	1978-86
Guadalupe River above Kerrville (e)	08166150	488	1976-79
Turtle Creek Tributary near Kerrville (e)	08166300	0.46	1966-74
Guadalupe River near Comfort (d)	08166500	762	1918-32
Rebecca Creek near Spring Branch (d)	08167600	10.90	1960-79
Blieders Creek at New Braunfels (e)	08168600	16.0	1962-89
Panther Canyon at New Braunfels (e)	08168700	0.73	1962-89
Trough Creek near New Braunfels (e)	08168720	0.48	1966-74
W.P. Dry Comal Creek Tributary near New Braunfels (e)	08168750	0.32	1966-74
Dry Comal Creek at New Braunfels (e)	08168800	N/A	1962-74
Guadalupe River at New Braunfels (d)	08169500*	1,652	1915-27
Walnut Branch near Seguin (e)	08169750	5.46	1967-74
East Pecan Branch near Gonzales (e)	08169850	0.24	1965-74
San Marcos River at San Marcos (d)	08169950	83.7	1915-21
West Elm Creek near Niederwald (e)	08172100	0.44	1965-74
Plum Creek near Lockhart (d)	08172500	184	1925-30
Plum Creek near Luling (d)	08173000	309	1930-93
San Marcos River at Ottine (d)	08173500	1,249	1915-43
Peach Creek below Dilworth (d)	08174600	460	1959-79
Guadalupe River below Cuero (d)	08176000	4,923	1903-07, 1916-19, 1921-36
Irish Creek near Cuero (e)	08176200	15.5	1967-74
Three Mile Creek near Cuero (e)	08176600	0.48	1966-74
Coleto Creek Reservoir inflow (Guadalupe diversion) near Schroeder (d)	08176990	357	1980-94
Coleto Creek near Schroeder (d)	08177000	369	1930-34, 1953-79
Olmos Creek Tributary at FM 1535 at Savano Park (e)	08177600	0.33	1969-81
Olmos Creek at Dresden Drive, San Antonio (d)	08177700*	21.2	1968-81
Olmos Reservoir at San Antonio (e)	08177800	32.4	1968-71, 1976-89. 1992-95
San Antonio River at Woodlawn Avenue, San Antonio (e)	08177860	36.4	1989-95
San Antonio River at Dolorosa, San Antonio (d)	08177920	N/A	1980-86
San Antonio River at San Antonio (d)	08178000	41.8	1895-1906, 1915-29, 1939-97
Alazan Creek at St. Cloud Street, San Antonio (e)	08178300	3.26	1969-79
San Pedro Creek at Furnish St., San Antonio (d)	08178500*	2.60	1916-29
Harlandale Creek at W. Harding Street, San Antonio (e)	08178555	2.43	1977-81
Panther Springs Creek at FM 2696 near San Antonio (e)	08178600	9.54	1969-77
Lorence Creek at Thousand Oaks Blvd., San Antonio (e)	08178620	4.05	1980-84
West Elm Creek at San Antonio (e)	08178640	2.45	1976-88
East Elm Creek at San Antonio (e)	08178645	2.33	1976-81
Salado Creek Tributary at Bitters Road, San Antonio (e)	08178690	0.26	1969-81
Salado Creek at Rittman Road, San Antonio (e)	08178720	137.1	1968-81
Salado Creek Tributary at Bee Street, San Antonio (e)	08178736	0.45	1970-77
Salado Creek at E. Houston Street, San Antonio (e)	08178740	181	1968-81
Salado Creek at U.S. Highway 87, San Antonio (e)	08178760	186	1968-81
Salado Creek at Southcross Blvd., San Antonio (e)	08178780	188	1968-81

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Bandera Creek Tributary near Bandera (e)	08178900	0.27	1966-74
Medina River near Pipe Creek (d)	08179000	474	1923-35, 1953-82
Red Bluff Creek near Pipe Creek (d)	08179100	56.30	1956-81
Medina River Tributary near Pipe Creek (e)	08179200	0.30	1966-74
Medina Lake near San Antonio (e)	08179500	634	1913-94
Medina Canal near Riomedina (e)	08180000	N/A	1922-34, 1957-93
Medina River near Riomedina (d)	08180500	650	1922-34, 1953-73
Medio Creek at Pearsall Road, San Antonio (e)	08180750	47.9	1987-95
Leon Creek Tributary at FM 1604, San Antonio (e)	08181000	5.57	1968-80
French Creek Tributary near Helotes (e)	08181200	1.08	1966-74
Ranch Creek near Helotes (d)	08181410		1978
Leon Creek Tributary at Kelly Air Force Base (d)	08181450	1.19	1969-79
Calaveras Creek SWS No. 6 (inflow) near Elmendorf (e)	08182400	7.01	1957-77
Calaveras Creek near Elmendorf (d)	08182500	77.20	1954-71
River at Calaveras (d)	08183000	1,786	1918-25
Cibolo Creek near Boerne (d)	08183900	68.4	1963-95
Cibolo Creek near Bulverde (d)	08184000	198	1946-66
Cibolo Creek above Bracken (d)	08184500	250	1946-51
Cibolo Creek at Sutherland Springs (d)	08185500	665	1924-29
Ecleto Creek near Runge (d)	08186500	239	1962-89
Escondido Creek SWS No. 1 (inflow) near Kenedy (e)	08187000	3.29	1955-73
Escondido Creek at Kenedy (d)	08187500	72.40	1954-73
Escondido Creek SWS No. 11 (inflow) near Kenedy (e)	08187900	8.45	1959-77
Dry Escondido Creek near Kenedy (d)	08188000	9.43	1954-59
Baugh Creek at Goliad (e)	08188400	3.02	1966-74
Guadalupe-Blanco River Authority Calhoun Canal-Flume No. 2 near Long Mott (d)	08188750	N/A	1972-86
Guadalupe River at State Highway 35 near Tivoli (e)	08188810	10,280	1975-82
Medio Creek near Beeville (d)	08189300	204	1962-77
Olmos Creek Tributary near Skidmore (e)	08189600	0.58	1966-73
Chiltipin Creek at Sinton (d)	08189800	128	1970-91
Nueces River Basin:			
Nueces River near Uvalde (d)	08191500	1,930	1928-39
Nueces River near Cinonia (d)	08192500	2,150	1915-25
Plant Creek near Tilden (e)	08194550	0.36	1965-74
Nueces River at Simmons (d)	08194600	8,561	1965-77
Dry Frio River at Knippa (d)	08196500	179	1953
East Elm Creek near Sabinal (e)	08198900	10.6	1967-74
Frio River near Frio Town (d)	08199700	1,460	1924-27
Hondo Creek near Hondo (d)	08200500	132	1953-64
Bone Creek near Hondo (e)	08200900	0.19	1965-74
Seco Creek near Utopia (d)	08202000	53.20	1952-61
Seco Creek near D'Hanis (d)	08202500	87.40	1952-64
Leona River Tributary near Uvalde (e)	08203500	1.21	1966-74
Leona River Spring Flow near Uvalde (d)	08204000*	1.21	1939-77
Leona River near Divot (d)	08204500	565	1924-29
Frio River at Calliham (d)	08207000	5,491	1925-26, 1932-81
Rutledge Hollow Creek near Poteet (e)	08207200	9.33	1966-74
Atascosa River near McCoy (d)	08207500	530	1951-57
Lucas Creek near Pleasanton (e)	08207700	32.80	1966-73
Ramirena Creek near George West (d)	08210300	84.40	1968-72
Lagarto Creek near George West (d)	08210400	155	1972-89
Nueces River below Mathis (d)	08211100	16,726	1966-67
Pintas Creek Tributary near Banquete (e)	08211550	3.28	1966-74
Hamon Creek near Freer (e)	08211600	0.73	1965-73
San Diego Creek at Alice (d)	08211800	319	1964-89

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Lake Alice at Alice (e)	08211850	150	1965-86
San Fernando Creek at Alice (d)	08211900	507	1965-77
San Fernando Creek near Alice (d)	08212000	518	1962-63
North Las Animas Creek Tributary near Freer (e)	08212320	0.07	1969-74
Los Olmos Creek near Falfurrias (d)	08212400	480	1967-73
Rio Grande at Vinton Bridge near Anthony (d)	08363840	28,680	1969-74
Northgate Reservoir at El Paso (e)	08365540	6.89	1973-75
Range Reservoir at El Paso (e)	08365545	11.89	1973-75
Franklin Canal at El Paso (d)	08365550	N/A	1969-72
McKelligon Canyon at El Paso (d)	08365600	2.30	1958-77
Government Ditch at El Paso (d)	08365800	6.40	1958-77
Rio Grande at Jaurez, MX (d)	08366000	29,350	1938-56
Riverside Canal near Socorro (d)	08366400	37,830	1969-72
Rio Grande at Island Station near El Paso (d)	08366500	29,743	1938-60
Rio Grande at Tornillo Branch near Fabens (d)	08367000	N/A	1924-38
Tornillo Drain at mouth near Tornillo (d)	08368000	N/A	1969-72
Tornillo Canal near Tornillo (d)	08368300	N/A	1969-72
Hudspeth Feeder Canal near Tornillo (d)	08368900	N/A	1969-72
Rio Grande at County Line Station near El Paso (d)	08369500	30,610	1938-60
Camo Rice Arroyo Tributary near Fort Hancock (e)	08370200	2.35	1966-74
Wild Horse Creek Tributary near Van Horn (e)	08370800	0.74	1966-73
Cibolo Creek near Presidio (d)	08373200	276	1971-77
Rio Grande above Presidio (lower Station) (d)	08373500	N/A	1901-13, 1924-54
Sanderson Canyon at Sanderson (d)	08376300	195	1968-80
Rio Grande at Langtry (d)	08377500	84,795	1900-14, 1920, 1924-60
Rio Grande Tributary near Langtry (e)	08377600	0.32	1966-74
Delware River Tributary near Orla (e)	08407800	1.6	1966-74
Pecos River near Angeles (d)	08409500	20,540	1914-37
Salt Screwbean Draw near Orla (d)	08411500	464	1939-41, 1944-57
Pecos River near Mentone (d)	08414000	21,650	1922-26, 1969-73
Reeves County WID No. 2 Canal near Mentone (d)	08414500	N/A	1922-25, 1939-57, 1964-90
Ward County WID No. 3 Canal near Barstow (d)	08415000	N/A	1939-57, 1964-90
Pecos River above Barstow (d)	08416500	21,800	1916-21
Ward County Irrigation District No. 1 Canal near Barstow (d)	08418000	N/A	1922-25, 1939-57, 1964-90
Pecos River at Pecos (d)	08420500	22,100	1898-1907, 1914-15, 1922-26, 1939-55
Madera Canyon near Toyahvale (d)	08424500	53.80	1932-49
Phantom Lake Spring near Toyahvale (d)	08425500*	N/A	1932-34, 1942-66
Giffin Springs at Toyahvale (d)	08427000*	N/A	1932-33
San Solomon Springs at Toyahvale (d)	08427500	N/A	1932-34, 1941-65
West Sandia Spring at Balmorhea (d)	08429000	N/A	1932-33
East Sandia Spring at Balmorhea (d)	08430000	N/A	1932-33
Toyah Creek near Pecos (d)	08431000	1,024	1940-41, 1944-45
Salt Draw near Pecos (d)	08431500	1,882	1939-41, 1944-45
Limpia Creek above Fort Davis (d)	08431700	52.40	1966-86

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Limpia Creek below Fort Davis (d)	08431800	227	1962-77
Limpia Creek near Fort Davis (d)	08432000	303	1925-32
Barrilla Draw near Saragosa (d)	08433000	612	1925-26, 1932, 1976-83
Toyah Creek below Toyah Lake near Pecos (d)	08434000	3,709	1939-51
Grandfalls-Big Valley Canal near Barstow (d)	08435000	N/A	1922-26, 1939-57, 1964-76
Pecos River below Barstow (d)	08435500	25,980	1939-41
Toronto Creek near Alpine (d)	08435600	27.90	1971-76
Alpine Creek at Alpine (d)	08435620	18.10	1971-76
Moss Creek near Alpine (d)	08435660	11.30	1971-76
Sunny Glen Canyon near Alpine (d)	08435700	29.70	1968-77
Coyanosa Draw near Fort Stockton (d)	08435800	1,182	1964-77
Pecos County WID No. 2 (Upper Div.) Canal near Grandfalls (d)	08436500	N/A	1922-25, 1939-57, 1964-90
Courtney Creek Tributary near Fort Stockton (e)	08436800	0.44	1966-74
Pecos County WID No. 2 Canal near Imperial (d)	08437500	N/A	1940-57, 1964-90
Lake Leon Tributary near Fort Stockton (e)	08437550	1.59	1966-74
Pecos County WID No. 3 Canal near Imperial (d)	08437600	N/A	1940-57, 1964-90
Monument Draw Tributary at Pyote (e)	08437650	178	1966-74
Ward County WID No. 2 Canal near Grand Falls (d)	08437700	N/A	1939-57, 1964-90
Pecos River near Grand Falls (d)	08438100	27,810	1916-26
Pecos River below Grand Falls (d)	08441500	27,820	1921-26, 1939-56
Three Mile Mesa Creek near Fort Stockton (e)	08444400	1.04	1966-74
Comanche Springs at Fort Stockton (d)	08444500	N/A	1936-64
Pecos River near Sheffield (d)	08447000	31,600	1922-25, 1940-49
Independence Creek near Sheffield (d)	08447020	763	1974-85
Howards Creek Tributary near Ozona (e)	08447200	7.53	1967-73
Pecos River near Shumla (d)	08447400	35,162	1955-60
Pecos River near Comstock (d)	08447500	35,298	1900-54
Goodenough Springs near Comstock (e)	08448500	N/A	1929-60
Sonora Field Creek at Sonora (e)	08448800	2.60	1965-71
Devils River near Juno (d)	08449000	2,730	1925-49, 1964-73
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 mear mouth, Del Rio (d)	08450500	4,305	1954-60
Rio Grande near Del Rio (d)	08452500	123,303	1900-15, 1920, 1924-54
San Felipe Creek near Del Rio (e)	08453000	46.0	1931-60
Zorro Creek near Del Rio (e)	08453100	10.0	1966-74
East Perdido Creek near Brackettville (e)	08454900	3.39	1965-74
Pinto Creek near Del Rio (d)	08455000	249	1929-69, 1971-72
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Rio Grande at Roma (d)	08462500	166,464	1900-13, 1923-54
Rio Grande near Rio Grande City (d)	08465500	180,941	1932-54
Rio Grande Tributary near Rio Grande City (e)	08466100	1.20	1966-74
Rio Grande Tributary near Sullivan City (e)	08466200	0.40	1966-74
North Floodway South of McAllen (d)	08468000	N/A	1928-60
South Floodway South of McAllen (d)	08470000	N/A	1929-60
Rio Grande at Hildalgo (d)	08471500	176,100	1928-32, 1935, 1939, 1941-51
Rio Grande near Progreso Bridge (d)	08473300	176,228	1953-60
Rio Grande near San Beniot (d)	08473700	176,304	1953-60
Rio Grande at Matamoros, MX (d)	08474500	182,211	1900-13, 1923-54
Rio Grande near Brownsville (d)	08475000	176,333	1935-50

The following stations were discontinued as continuous-record surface-water-quality stations prior to the 1999 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)
Guadalupe River near Spring Branch	08167500	1,315	SC	1942-45
Guadalupe River at Sattler	08167800	1,436	T	1984-87
Blanco River at Wimberley	08171000	355	T	1977-78
Plum Creek near Luling	08173000	309	SC, T	1968-86
Guadalupe River at Victoria	08176500	5,198	SC	1946-81,
			T	1951-81
Coleto Creek Reservoir (Condenser No. 1) near Fannin	08177360	414	T	1980-94
Coleto Creek Reservoir (outflow) near Victoria	08177410	494	T	1980-94
San Antonio River at San Antonio	08178000	41.8	SC, T	1991-92,
				1996-97
Medina River at La Coste	08180640	805	SC, pH, T, DO	1987-95
Medio Creek at Pearsall Rd. at San Antonio	08180750	47.9	SC, pH, T, DO	1987-95
San Antonio River near Falls City	08183500	2,113	SC, pH, T, DO	1987-96
Cibolo Creek near Falls City	08186000	827	SC, T	1969-91
Escondido Creek SWS #1 near Kenedy	08187000	3.29	S	1955-65
Guadalupe River at Tivoli	08188800	10,128	SC, T	1966-83
Mission River at Refugio	08189500	690	SC, T	1961-81
Nueces River at Cotulla	08194000	5,171	SC	1942
Nueces River near Tilden	08194500	8,093	SC, T, S	1950
Frio River at Calliham	08207000	5,491	SC, T	1968-81
Nueces River near Three Rivers	08210000	15,427	SC	1945-47,
			SC, T, pH, Cl, S	1951-52,
			SC, T	1975-81
Nueces River at Bluntzer	08211000	16,772	SC, T	1948-91
Los Olmos Creek near Falfurrias	08212400	480	SC, T	1975-81
Rio Grande at Fort Quitman	08370500	31,944	SC, T	1975-78.
Rio Grande at Foster Ranch near Langtry	08377200	80,742	SC, T	1975-81
Pecos River below Red Bluff Dam near Orla	08410100	20,720	SC	1937-69,
			T	1953-69
Salt Draw near Orla	08411500	464	SC, T	1943-48
Pecos River near Mentone	08414000	21,650	SC	1939
Pecos River at Pecos	08420500	22,100	SC	1939-41
Toyah Creek near Pecos	08431000	1,024	SC	1940,
				1944
Salt Draw near Pecos	08431500	1,882	SC	1940,
				1944
Toyah Creek below Toyah Lake near Pecos	08434000	3,709	SC	1940-50,
			Cl	1940
Pecos River below Grand Falls	08441500	27,820	SC	1939-42,
				1947-56
Pecos River near Girvin	08446500	29,560	SC	1940-41,
				1947,
				1954-82
			T	1954-59,
				1964-82
Pecos River near Sheffield	08447000	31,600	SC	1940-41,
				1947
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

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Rio Grande at Mission Pumping Plant	08468000	171,800	SC	1945-50
Rio Grande at Cameron Co. WID #2 near San Benito	08473800	N/A	SC	1942-43
Rio Grande at Los Fresnos Pumping Plant near Brownsville	08474130	N/A	SC	1945-46
Rio Grande near Brownsville	08475000	176,333	SC	1943-44,
			SC, T	1967-83
			S	1966-83

WATER RESOURCES DATA—TEXAS, 1999

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 76 gaging stations; stage only at 1 gaging stations; stage and contents at 4 lakes and reservoirs; and water quality at 38 gaging stations. Also included are data for 30 partial-record stations comprised of 3 flood-hydrograph, 14 low-flow, and 8 crest-stage, and 5 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-99-5." 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 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 1999 are:

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

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

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

HYDROLOGIC CONDITIONS

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

Streamflow across the State averaged normal during water year 1999 .

Conservation storage in 77 selected reservoirs throughout the State, with a combined conservation capacity of 34,481,000 acre-feet, increased from 75 percent at the end of September 1998 to 76 percent at the end of September 1999. Records from these reservoirs indicate that storage decreased in 42, increased in 34, and remained the same in 1.

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 and water-quality stations in the area are shown in figure 1.

Streamflow

In the area covered in volume 5, streamflow averaged above normal during water year 1999. Streamflow for water year 1999 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 1999 was normal. Monthly mean discharges for water year 1999 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 above normal during October through December, below normal during September and normal for the remaining 8 months. Streamflow for the station Neches River near Rockland was above normal during October through February and normal for the remaining 7 months. The station North Bosque River near Clifton had above normal streamflow during November and December, below normal streamflow during May, August, and September and normal streamflow for the remaining 7 months. The station North Concho River near Carlsbad had normal streamflow for each month of water year 1999.

Conservation storage in 8 selected reservoirs in this area of the State, with a total combined conservation capacity of 5,244,000 acre-feet, decreased from 56 percent of capacity at the end of September 1998 to 50 percent of capacity at the end of September 1999. Records from these reservoirs indicate that storage decreased in 6, increased in 2.

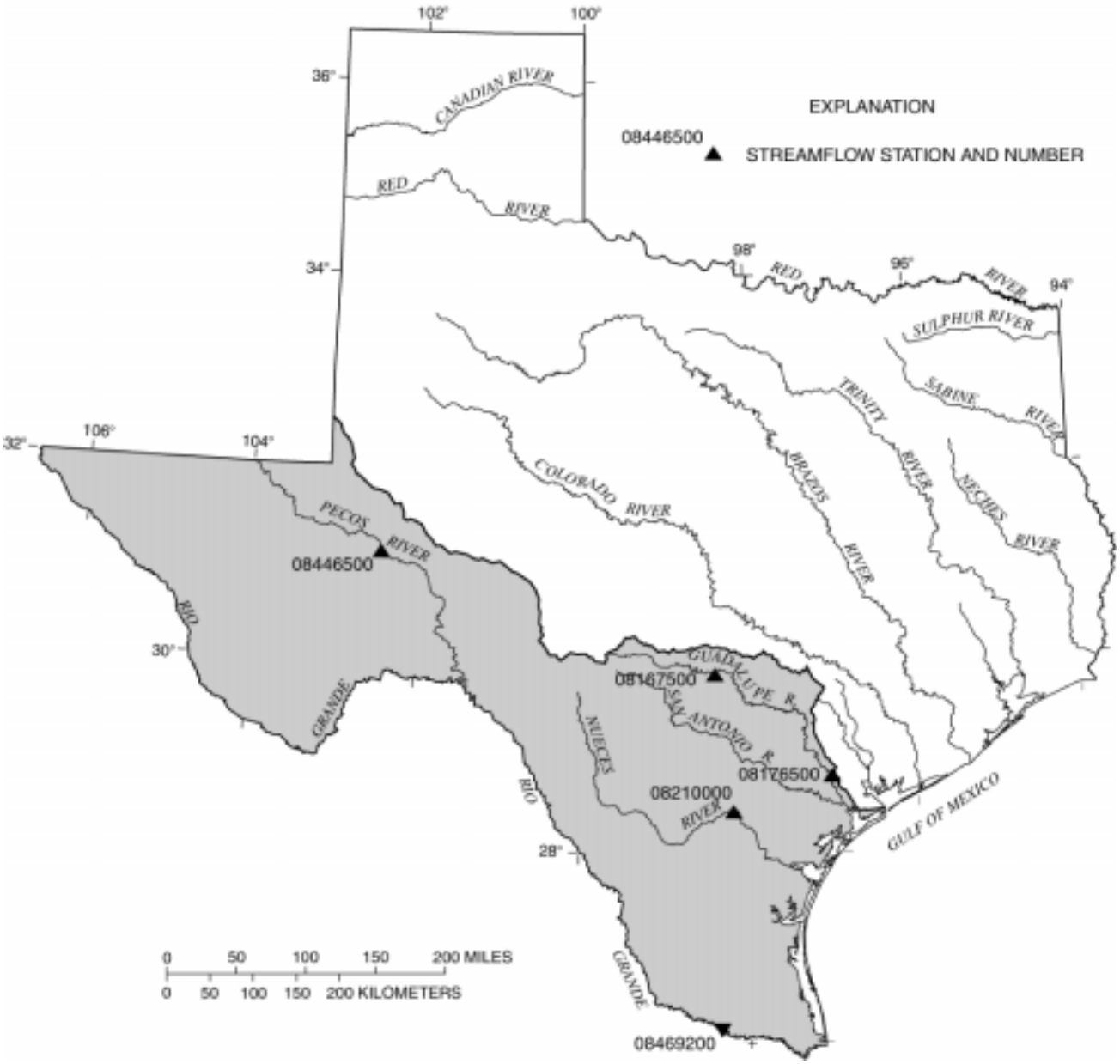


Figure 1. Area of Texas covered by volume 5 (shaded) and location of selected streamflow and water-quality stations in volume 5.

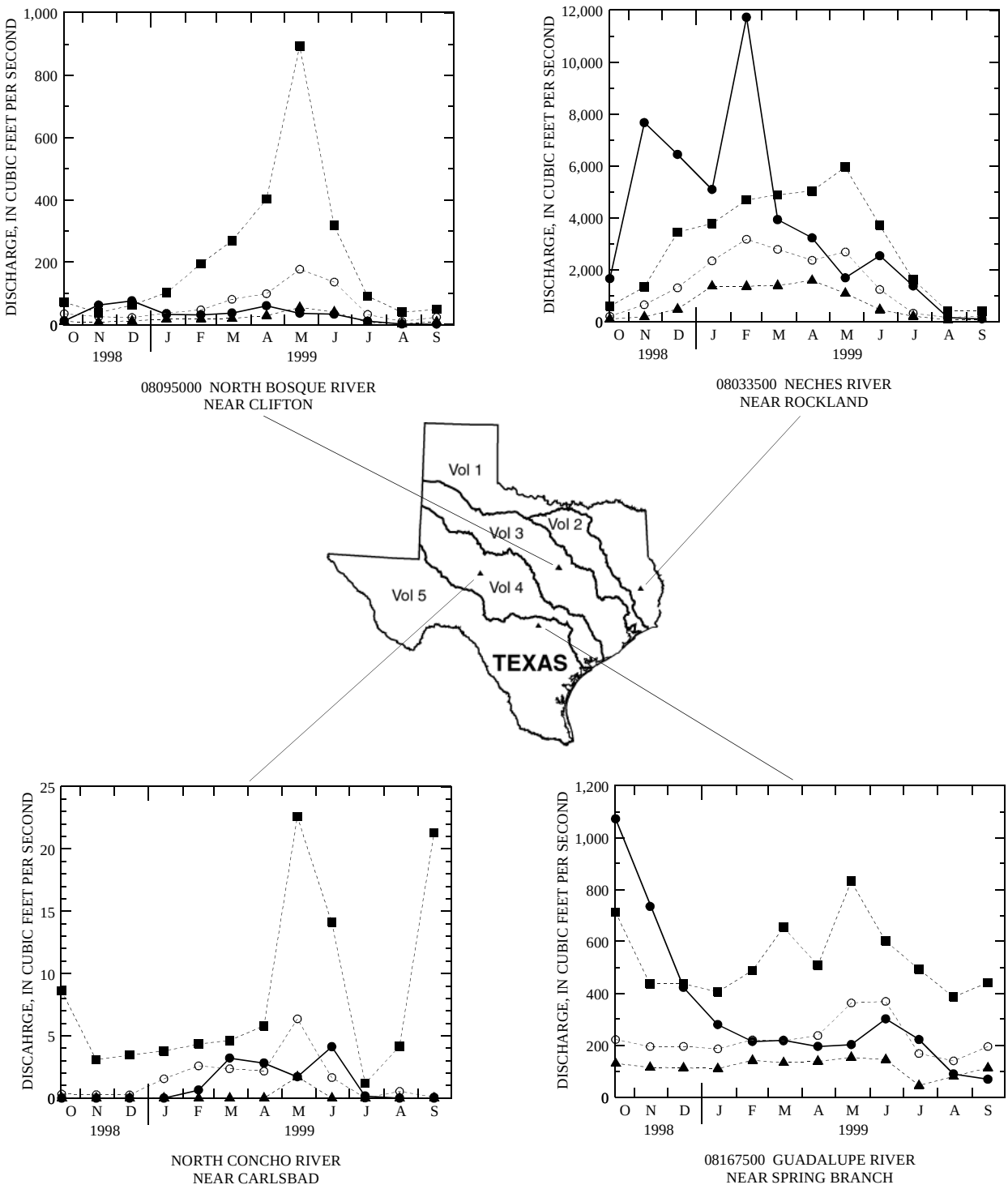


Figure 2. Monthly mean discharges at four long-term hydrologic index stations during 1999 water year and median of the monthly mean discharges for 1961–90 water years.

Water Quality

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

Records of discharge-weighted-average concentrations of dissolved solids for water year 1999 are compared with those for water years 1995–99 for selected long-term daily or continuous-record water-quality stations (fig. 1) in the Rio Grande Basin. Results are shown in table 2.

Table 1. Streamflow at four selected stations

Station no. and name		Discharge during 1999 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
Guadalupe River Basin							
08167500	Guadalupe River near Spring Branch, Tex. 1/	51,400	50	337	160,000	0	431 (1922-99)
08176500	Guadalupe River at Victoria, Tex.	i466,000	441	4,788	i466,000	14	1,912 (1935-99)
Nueces River Basin							
08210000	Nueces River near Three Rivers, Tex.	4,510	57	502	18,300	0	694 (1946-99)
Rio Grande Basin							
08446500	Pecos River near Girvin, Tex.	69	7.9	22.2	20,000	1.9	72.3 (1939-99)

1/ Hydrologic index station.
i From indirect measurement of peak flow

Table 2.--Comparison of records of discharge-weighted-average concentrations of dissolved solids for the 1999 and 1995-99 water years

Station no. and name		Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
		1999	1995-99	1999	1995-99
Rio Grande Basin					
08469200	Rio Grande below Anzalduas Dam, Tex.	956	1,150	668	781

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities.

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

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

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

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

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

http://nadp.sws.uiuc.edu

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

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

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

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

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

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

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

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1999 water year that began October 1, 1998, and ended September 30, 1999. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

Downstream Order Numbering

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 08057000, which appears just to the left of the station name, includes the 2-digit Part number "08" plus the 6-digit downstream-order number "057000." The Part number designates the major river basin; for example, Part "08" is the Western Gulf of Mexico basin.

Records of Stage and Water Discharge

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

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

Data Collection and Computation

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

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

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

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

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

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

For some streamflow gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the stage sensor or recorder fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily mean discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

Streamflow data in this report are presented in a format that is considerably different from the format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

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

Station Manuscript

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

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station

name is given. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

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

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

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

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

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

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

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

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error. Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscripts published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the offices whose addresses are given on the back of the title page of this report to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check, because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

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

Data table of daily mean values

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

Statistics of monthly mean data

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

Summary statistics

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

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

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

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

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

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

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

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

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

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

INSTANTANEOUS PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period.

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

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

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

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

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

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

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

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

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

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

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

Accuracy of the Records

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

The accuracy attributed to the records is indicated under “REMARKS.” “Excellent” means that about 95 percent of the daily discharges are within 5 percent of their true values; “good,” within 10 percent; and “fair,” within 15 percent.

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

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

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

Other Records Available

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

Records of Surface-Water Quality

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

Classification of Records

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

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

Arrangement of Records

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

On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Records of surface-water quality at some National Water Quality Accounting (NAWQA) Sites include data collected by different government agencies as identified in the water-quality data tables under AGENCY COLLECTING SAMPLE (CODE NUMBER). Values for this code are given below:

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

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

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

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

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

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

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

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

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

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

Water Temperature

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

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

Sediment

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

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

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

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

Laboratory Measurements

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

Historical and current (1999) dissolved trace-element concentrations are reported herein for water that was collected, processed, and analyzed by using either ultraclean or other than ultraclean techniques. If ultraclean techniques were used, then those concentrations are reported in nanograms per liter. If other than ultraclean techniques were used, then those concentrations are reported in micrograms per liter and could reflect contamination introduced during some phase of the procedure.

Data Presentation

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

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

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

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

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

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

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

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

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

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

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

Remarks Codes

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

PRINTED OUTPUT	REMARK
e or E	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptance range (non-ideal colony count).
L	Biological organism count less than 0.5 percent (Organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
&	Biological organism estimated as dominant.
V	Analyte was detected in both the environmental sample and the associated blanks.

Dissolved Trace-Element Concentrations

NOTE: Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (mg/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the mg/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994.

Change in National Trends Network Procedures

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

WATER QUALITY-CONTROL DATA

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

Blank Samples

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

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

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

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

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

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

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

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

Reference Samples

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

Replicate Samples

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

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

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

Spike Samples

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

ACCESS TO USGS WATER DATA

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

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

http://tx.usgs.gov

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

DEFINITION OF TERMS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Bottom material: See "Bed material".

Cells/volume refers to the number of plankton cells or natural units counted using a microscope and grid or counting cell. Results are generally reported as cells or units per milliliter.

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

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

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

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

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

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

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

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

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

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

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

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

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

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to reflect the change.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Organism is any living entity.

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

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

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

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

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

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

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

Classification	Size (mm)			Method of analysis
Clay	0.00024	-	0.004	Sedimentation
Silt	0.004	-	0.062	Sedimentation
Sand	0.062	-	2.0	Sedimentation/sieve
Gravel	2.0	-	64.0	Sieve

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

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

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

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

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

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

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

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

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

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

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

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

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

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

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

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

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

achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

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

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

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

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

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

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

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

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

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

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

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

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

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. The term needs to be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It is not synonymous with total-sediment discharge.

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

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 ºC. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

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

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

Substrate is the physical surface upon which an organism lives.

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

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with

clean streamside rocks) and multiplate samplers (made of hard-board) for benthic organism collection, and plexiglass strips for periphyton collection.

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

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

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

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

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

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

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

Synoptic Studies Short-term investigations of specific water-quality conditions during selected seasonal or hydrologic 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.

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

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

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

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

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

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

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

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

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

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

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

Water year in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1990, is called the "1990 water year."

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

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

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

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

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

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

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

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

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

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

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

Section E. Subsurface Geophysical Methods

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

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

Section F. Drilling and Sampling Methods

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

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Section B. Ground-Water Techniques

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

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

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

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

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

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

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

3-B7. ***Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow***, by E.J. Wexler: USGS--TWRI Book 3, Chapter B7. 1992. 190 pages.

Section C. Sedimentation and Erosion Techniques

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

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

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

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

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

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

Section B. Surface Water

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

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

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

Section D. Interrelated Phases of the Hydrologic Cycle

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

Book 5. Laboratory Analysis

Section A. Water Analysis

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

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

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

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

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

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

Section A. Sediment Analysis

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

Book 6. Modeling Techniques

Section A. Ground Water

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

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

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

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

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

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

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

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

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

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

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

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

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

Section B. Instruments for Measurement of Discharge

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

Book 9. Handbooks for Water-Resources Investigations

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

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

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

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

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

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

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

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

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

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

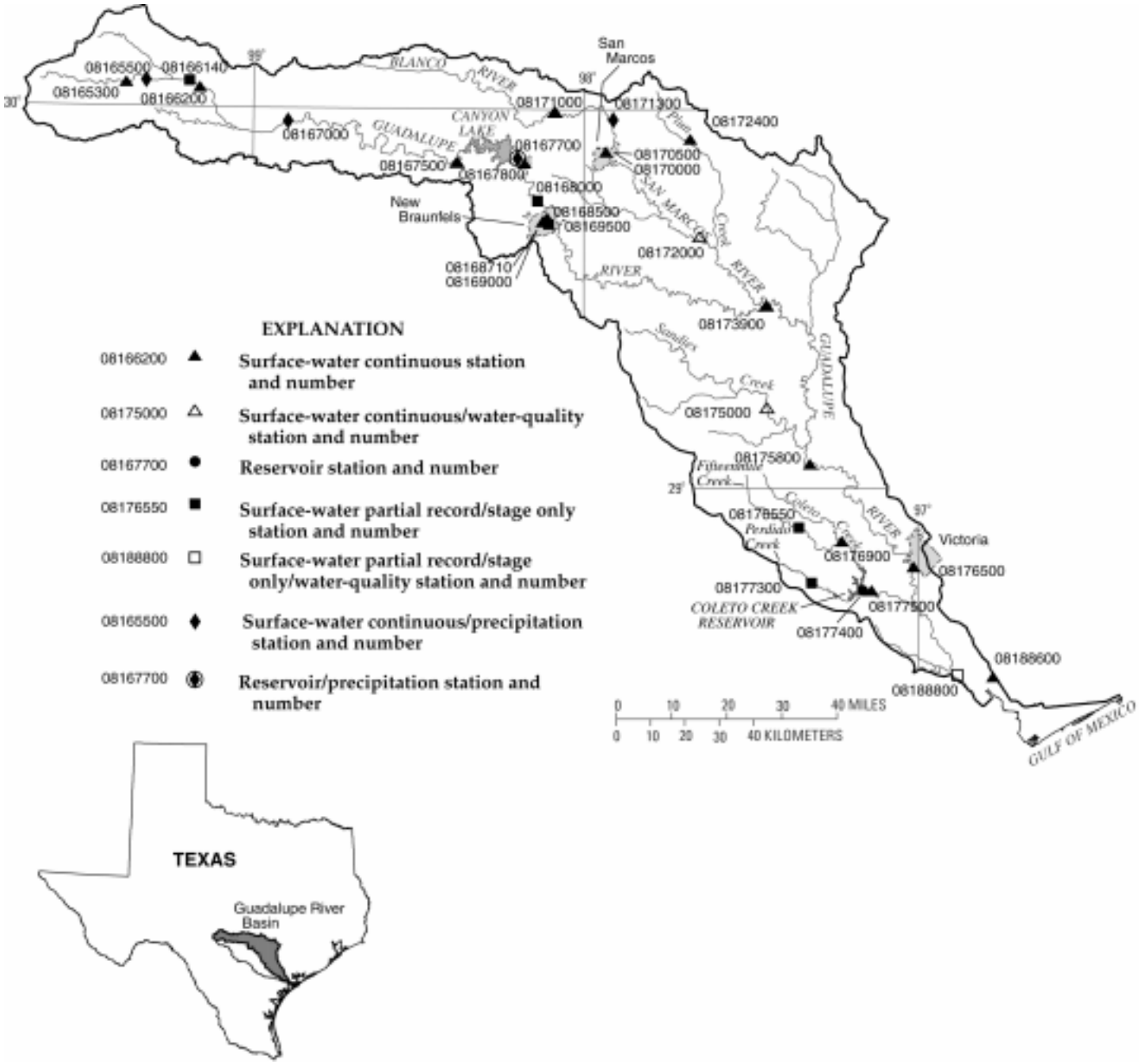


Figure 3.--Map showing location of gaging stations in the Guadalupe River Basin

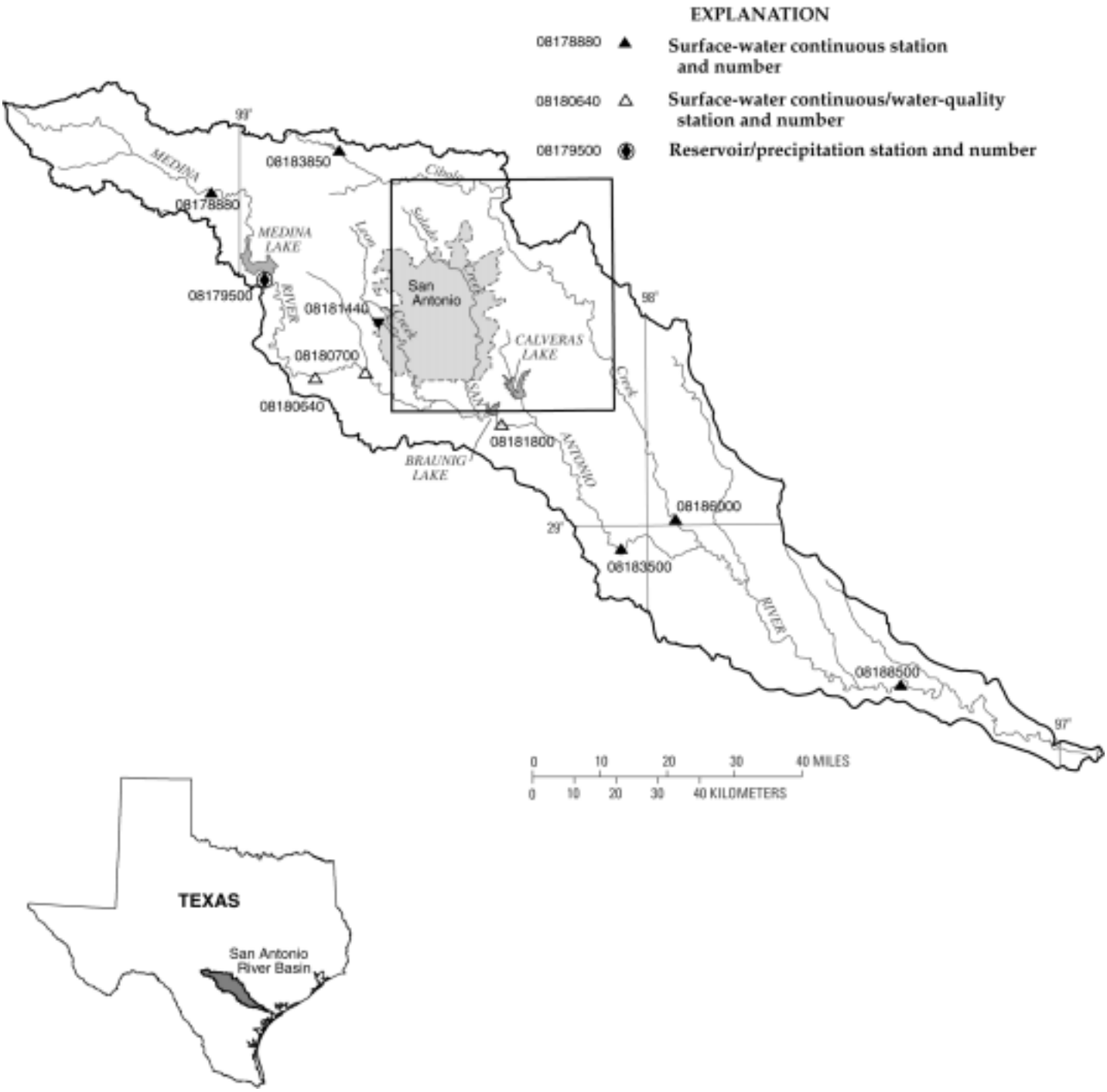


Figure 4.--Map showing location of gaging stations in the San Antonio River Basin

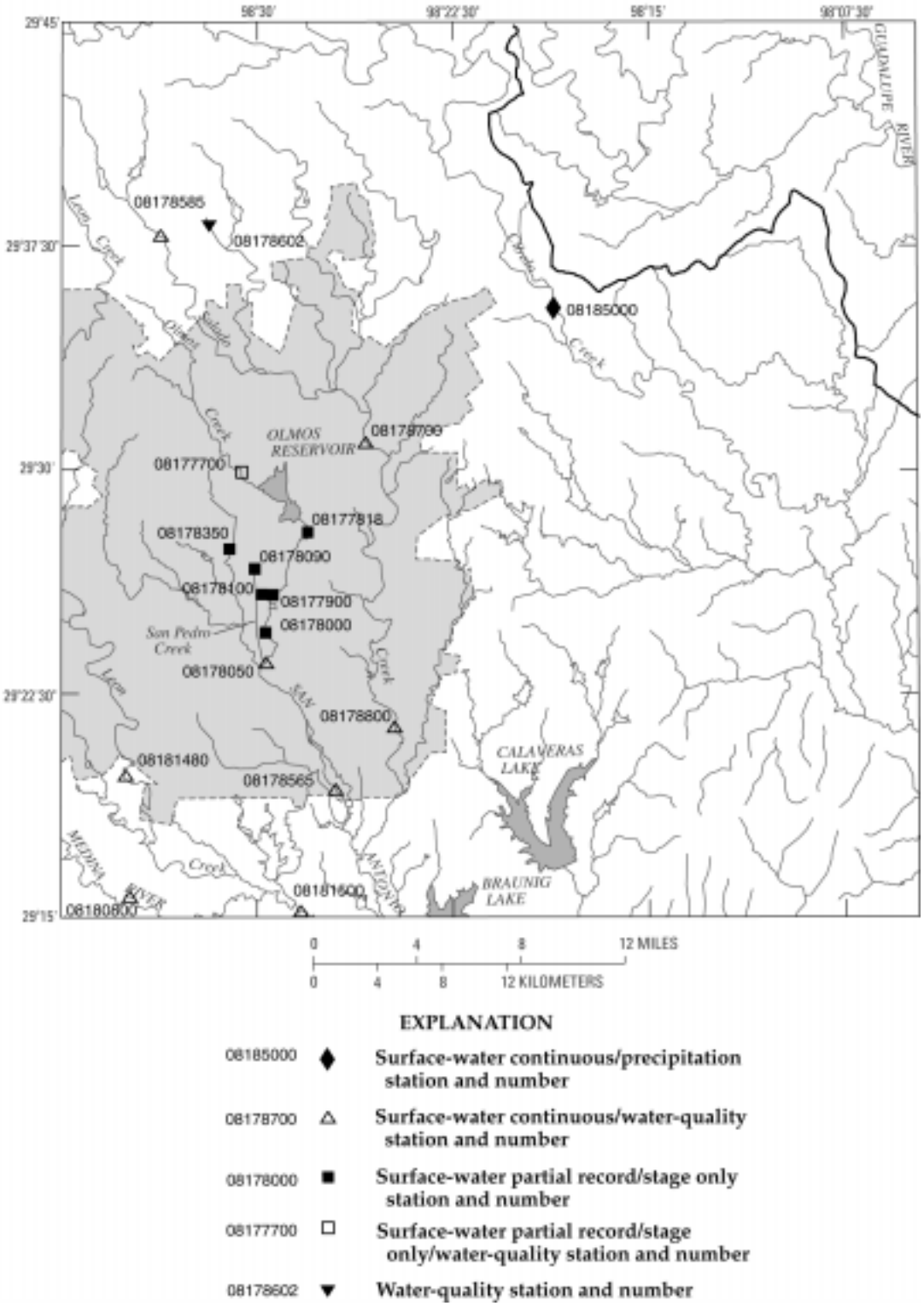


Figure 5.--Map showing location of gaging stations in the San Antonio inset of the San Antonio River Basin

08165300 North Fork Guadalupe River near Hunt, TX 30
08165500 Guadalupe River at Hunt, TX 32
08166140 Guadalupe River above Bear Creek at Kerrville, TX 395
08166200 Guadalupe River at Kerrville, TX 36
08167000 Guadalupe River at Comfort, TX 38
08167500 Guadalupe River near Spring Branch, TX 42
08167700 Canyon Lake near New Braunfels, TX 44
08167800 Guadalupe River at Sattler, Tx 48
08168000 Hueco Springs near New Braunfels, TX 395
08168500 Guadalupe River above Comal River at New Braunfels, TX 50
08168710 Comal Springs at New Braunfels, Tx 52
08169000 Comal River at New Braunfels, TX 54
08169500 Guadalupe River at New Braunfels, TX 397
08170000 San Marcos Springs at San Marcos, TX 56
08170500 San Marcos River at San Marcos, TX 58
08171000 Blanco River at Wimberley, TX 60
08171300 Blanco River near Kyle, Tx 62
08172000 San Marcos River at Luling, TX 66
08172400 Plum Creek at Lockhart, TX 70
08173900 Guadalupe River at Gonzales, TX 72
08175000 Sandies Creek near Westhoff, TX 74
08175800 Guadalupe River at Cuero, TX 78
08176500 Guadalupe River at Victoria, TX 80
08176550 Fifteenmile Creek near Weser, TX 82
08176900 Coleto Creek at Arnold Road Crossing near Schroeder, TX 84
08177300 Perdido Creek at Farm to Market Road 622 near Fannin, TX 86
08177400 Coleto Creek Reservoir near Victoria, TX 88
08177500 Coleto Creek near Victoria, TX 90
08177700 Olmos Creek at Dresden Drive, San Antonio, TX 92
08177818 San Antonio Springs at San Antonio, TX 395
08177900 San Antonio River at Navarro Street, San Antonio, TX 397
08178000 San Antonio River at San Antonio, TX 397
08178050 San Antonio River at Mitchell Street, San Antonio, TX 96
08178090 San Pedro Springs at San Antonio, TX 395
08178100 San Pedro Creek at Santa Rosa Street, San Antonio, TX 397
08178350 Martinez Creek at Fredericksburg Road, San Antonio, TX 397
08178565 San Antonio River at Loop 410, San Antonio, TX 100
08178585 Salado Creek at Wilderness Road at San Antonio, TX 110
08178602 Camp Creek at Wilderness Trail at San Antonio, TX 116
08178700 Salado Creek (upper station) at San Antonio, TX 120
08178800 Salado Creek (lower station) at San Antonio, TX 124
08178880 Medina River at Bandera, TX 134
08179500 Medina Lake near San Antonio, TX 136
08180640 Medina River at LaCoste, TX 140
08180700 Medina River near Macdona, TX 156
08180800 Medina River near Somerset, TX 164
08181400 Helotes Creek at Helotes, TX 174
08181440 Ingram Road Outfall at Leon Creek Tributary, San Antonio, TX 178
08181480 Leon Creek at Interstate Highway 35 at San Antonio, TX 184
08181500 Medina River at San Antonio, TX 194
08181800 San Antonio river near Elemendorf, TX 204
08183500 San Antonio River near Falls City, TX 216
08183850 Cibolo Creek at Interstate Highway 10 above Boerne, TX 218
08185000 Cibolo Creek at Selma, TX 220
08186000 Cibolo Creek near Falls City, TX 224
08188500 San Antonio River at Goliad, TX 226
08188600 GBRA Calhoun Canal Pump Station near Long Mott, TX 228
08188800 Guadalupe River near Tivoli, TX 230

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 mi^2.

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 sea level. 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 ft^3/s, by slope-area measurements, combined flow of North Fork Guadalupe River 5 mi upstream and Bear Creek 2 mi upstream from mouth, and adjusted for difference in drainage area.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 20	1730	2,370	6.48	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	44	32	24	e21	18	30	37	20	e44	e27	e21
2	33	33	31	25	e21	18	29	34	19	e43	e26	e21
3	33	31	30	25	e21	18	29	22	19	e42	e26	e21
4	32	29	29	25	e21	18	28	21	18	e43	e26	e21
5	31	30	28	25	21	18	27	21	15	e43	e25	e21
6	37	30	27	25	21	18	26	21	16	e39	e25	e20
7	34	30	27	26	21	18	25	19	16	e38	e25	e20
8	32	29	26	26	21	18	25	20	19	e37	e24	e20
9	31	28	26	25	21	18	25	18	22	e36	e24	e30
10	31	30	28	25	21	18	25	24	21	e40	e24	21
11	31	30	27	25	19	17	26	24	21	e44	23	20
12	31	30	25	25	18	18	23	26	21	e48	23	21
13	31	31	25	25	19	18	23	26	26	e43	23	26
14	31	33	25	25	19	18	24	28	23	e39	23	22
15	31	33	25	24	19	17	24	26	22	e37	22	24
16	31	32	25	23	19	19	19	24	23	e36	22	24
17	32	32	25	23	19	17	25	22	23	e36	22	21
18	35	32	25	23	19	31	26	23	23	e35	21	19
19	36	32	24	23	20	35	21	21	22	e34	21	20
20	36	31	24	23	20	33	21	21	296	e33	20	17
21	34	31	24	22	19	32	17	19	e140	e33	21	16
22	34	31	24	22	19	30	20	19	e90	e32	21	18
23	33	30	24	22	19	29	21	20	e70	e31	21	18
24	33	30	24	e22	19	24	21	19	e58	e30	23	18
25	33	30	24	e22	19	27	23	19	e54	e29	23	19
26	32	30	24	e22	19	26	28	19	e52	e29	22	27
27	32	29	24	e22	19	27	26	19	e50	e28	22	22
28	33	29	24	e22	18	36	27	19	e48	e28	21	20
29	33	29	24	e22	---	33	27	23	e47	e27	e21	19
30	34	32	24	e21	---	31	29	23	e46	e27	e21	18
31	34	---	24	e21	---	30	---	21	---	e27	e21	---
TOTAL	1015	931	798	730	552	728	740	698	1340	1111	709	625
MEAN	32.7	31.0	25.7	23.5	19.7	23.5	24.7	22.5	44.7	35.8	22.9	20.8
MAX	37	44	32	26	21	36	30	37	296	48	27	30
MIN	31	28	24	21	18	17	17	18	15	27	20	16
AC-FT	2010	1850	1580	1450	1090	1440	1470	1380	2660	2200	1410	1240
CFSM	.19	.18	.15	.14	.12	.14	.15	.13	.26	.21	.14	.12
IN.	.22	.20	.18	.16	.12	.16	.16	.15	.29	.24	.16	.14

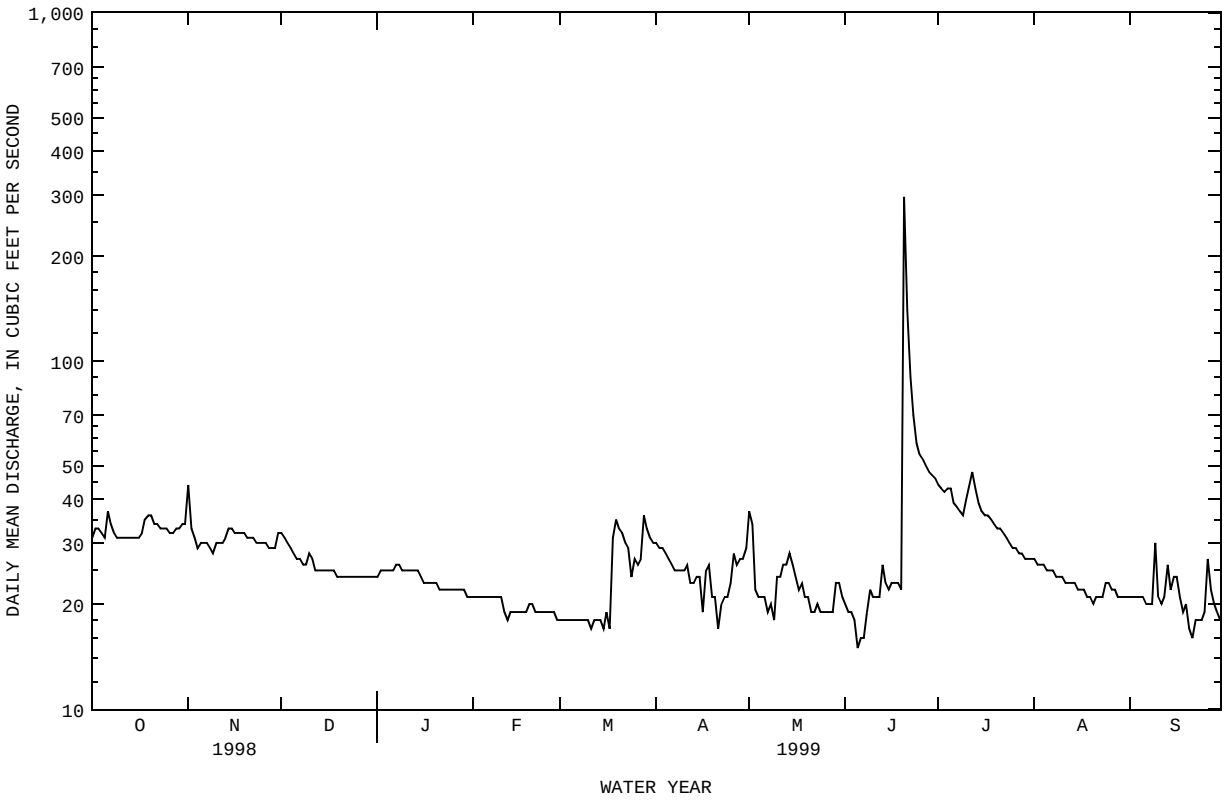
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1999, BY WATER YEAR (WY)

MEAN	66.4	31.4	42.5	31.5	30.3	29.7	40.3	42.9	44.3	40.2	54.2	39.4
MAX	529	54.4	296	113	108	144	351	149	278	465	452	198
(WY)	1986	1975	1985	1968	1992	1992	1977	1990	1981	1987	1978	1986
MIN	12.5	14.8	16.2	15.2	13.3	13.6	13.6	11.8	10.8	11.0	10.6	10.8
(WY)	1984	1984	1990	1990	1984	1971	1971	1971	1971	1971	1984	1984

08165300 NORTH FORK GUADALUPE RIVER NEAR HUNT, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1967 - 1999	
ANNUAL TOTAL	13643		9977			
ANNUAL MEAN	37.4		27.3		41.4	
HIGHEST ANNUAL MEAN					103	1987
LOWEST ANNUAL MEAN					13.4	1984
HIGHEST DAILY MEAN	3110	Aug 23	296	Jun 20	14900	Oct 19 1985
LOWEST DAILY MEAN	14	Jul 28	15	Jun 5	6.6	May 30 1969
ANNUAL SEVEN-DAY MINIMUM	16	Jul 27	17	Jun 2	8.3	Jun 7 1971
INSTANTANEOUS PEAK FLOW			2370	Jun 20	c57000	Oct 19 1985
INSTANTANEOUS PEAK STAGE			6.48	Jun 20	a29.81	Oct 19 1985
ANNUAL RUNOFF (AC-FT)	27060		19790		29970	
ANNUAL RUNOFF (CFSM)	.22		.16		.24	
ANNUAL RUNOFF (INCHES)	3.00		2.20		3.33	
10 PERCENT EXCEEDS	35		35		48	
50 PERCENT EXCEEDS	31		24		24	
90 PERCENT EXCEEDS	19		19		15	

e Estimated
c From rating curve extended above indirect measurement of 39,000 ft^3/s.
a From floodmark.



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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1941 to Sep 1949 (discharge not computed above 600 ft^3/s), Apr 1965 to current year. Occasional discharge measurements made 1950-64.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,722.7 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those above 300 ft^3/s, which are fair. No known regulation. There are numerous diversions for irrigation above station, but amounts are unknown.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 36.6 ft Jul 2, 1932, from information by local resident (discharge, 206,000 ft^3/s, determined by slope-area measurement 4.5 mi downstream from gage).

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 20	1545	1,470	10.02	Jun 20	1845	2,980	11.08

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	136	71	60	48	44	57	52	47	66	43	36
2	69	120	71	59	49	44	56	54	45	62	43	37
3	64	100	71	58	50	43	53	75	44	60	41	36
4	59	92	71	58	49	44	53	53	43	62	42	36
5	64	97	71	58	52	45	52	49	41	64	43	36
6	81	90	71	58	54	46	50	49	38	59	41	36
7	69	89	70	59	47	53	49	53	41	57	40	36
8	62	87	68	59	46	48	49	42	39	59	39	37
9	59	83	75	57	46	48	44	44	38	54	40	39
10	55	80	e79	56	47	46	45	63	38	54	38	39
11	53	79	83	56	46	45	49	61	38	58	38	34
12	55	79	e75	56	43	45	47	59	39	61	37	34
13	55	80	e72	56	44	48	51	58	55	57	37	35
14	55	87	68	58	44	46	51	53	50	53	37	37
15	55	87	68	56	45	45	49	49	43	52	37	38
16	55	83	70	55	46	46	46	52	47	51	37	38
17	63	81	66	54	46	46	41	52	44	51	37	36
18	70	81	66	54	46	65	43	55	44	50	36	35
19	69	81	64	54	46	59	44	53	44	50	37	34
20	68	78	64	54	47	49	44	49	657	49	36	34
21	66	79	64	54	45	51	44	48	364	49	36	33
22	63	79	63	53	44	52	41	46	158	48	36	34
23	61	77	63	52	44	51	43	48	128	47	37	34
24	59	76	63	50	44	50	44	51	110	47	40	33
25	59	71	63	51	45	48	49	40	99	46	42	34
26	59	71	62	50	46	50	62	36	101	45	40	37
27	60	71	61	50	46	53	56	40	81	46	38	40
28	61	71	61	50	45	79	54	46	76	44	38	36
29	60	71	60	51	---	69	55	52	71	44	37	35
30	59	71	59	51	---	61	60	53	70	43	38	34
31	59	---	59	49	---	57	---	49	---	43	37	---
TOTAL	1903	2527	2092	1696	1300	1576	1481	1584	2733	1631	1198	1073
MEAN	61.4	84.2	67.5	54.7	46.4	50.8	49.4	51.1	91.1	52.6	38.6	35.8
MAX	81	136	83	60	54	79	62	75	657	66	43	40
MIN	53	71	59	49	43	43	41	36	38	43	36	33
AC-FT	3770	5010	4150	3360	2580	3130	2940	3140	5420	3240	2380	2130
CFSM	.21	.29	.23	.19	.16	.18	.17	.18	.32	.18	.13	.12
IN.	.25	.33	.27	.22	.17	.20	.19	.20	.35	.21	.15	.14

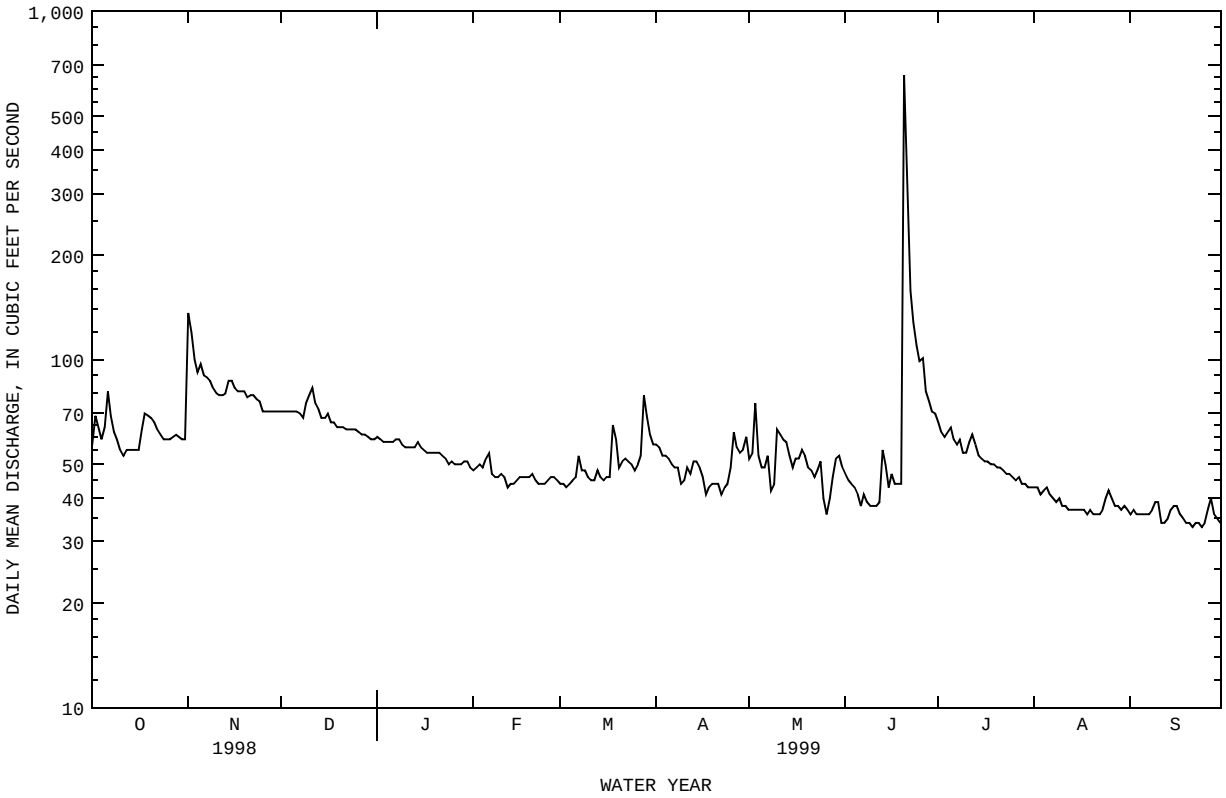
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1999, BY WATER YEAR (WY)

MEAN	104	61.5	72.4	60.9	62.4	63.4	76.3	86.7	84.1	79.1	110	71.2
MAX	677	114	322	151	213	257	570	286	551	956	992	312
(WY)	1986	1975	1985	1968	1992	1992	1977	1994	1987	1987	1978	1980
MIN	33.4	34.0	35.3	31.1	30.4	28.8	28.6	21.1	17.0	14.9	14.6	17.1
(WY)	1966	1966	1966	1966	1966	1966	1984	1984	1984	1984	1984	1984

08165500 GUADALUPE RIVER AT HUNT, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1965 - 1999	
ANNUAL TOTAL	28842		20794			
ANNUAL MEAN	79.0		57.0		78.2	
HIGHEST ANNUAL MEAN					223	1987
LOWEST ANNUAL MEAN					27.6	1984
HIGHEST DAILY MEAN	6070	Aug 23	657	Jun 20	22200	Jul 17 1987
LOWEST DAILY MEAN	26	Jul 23	33	Sep 21	8.2	Jul 17 1984
ANNUAL SEVEN-DAY MINIMUM	26	Jul 23	34	Sep 19	9.4	Jul 12 1984
INSTANTANEOUS PEAK FLOW			2980	Jun 20	108000	Jul 17 1987
INSTANTANEOUS PEAK STAGE			11.08	Jun 20	28.38	Jul 17 1987
ANNUAL RUNOFF (AC-FT)	57210		41240		56660	
ANNUAL RUNOFF (CFSM)	.27		.20		.27	
ANNUAL RUNOFF (INCHES)	3.73		2.69		3.69	
10 PERCENT EXCEEDS	82		76		97	
50 PERCENT EXCEEDS	63		51		49	
90 PERCENT EXCEEDS	30		37		29	

e Estimated



08165500 GUADALUPE RIVER AT HUNT, TX--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--Mar 1994 to current year. Unpublished records Mar 1994 to Sep 1998.

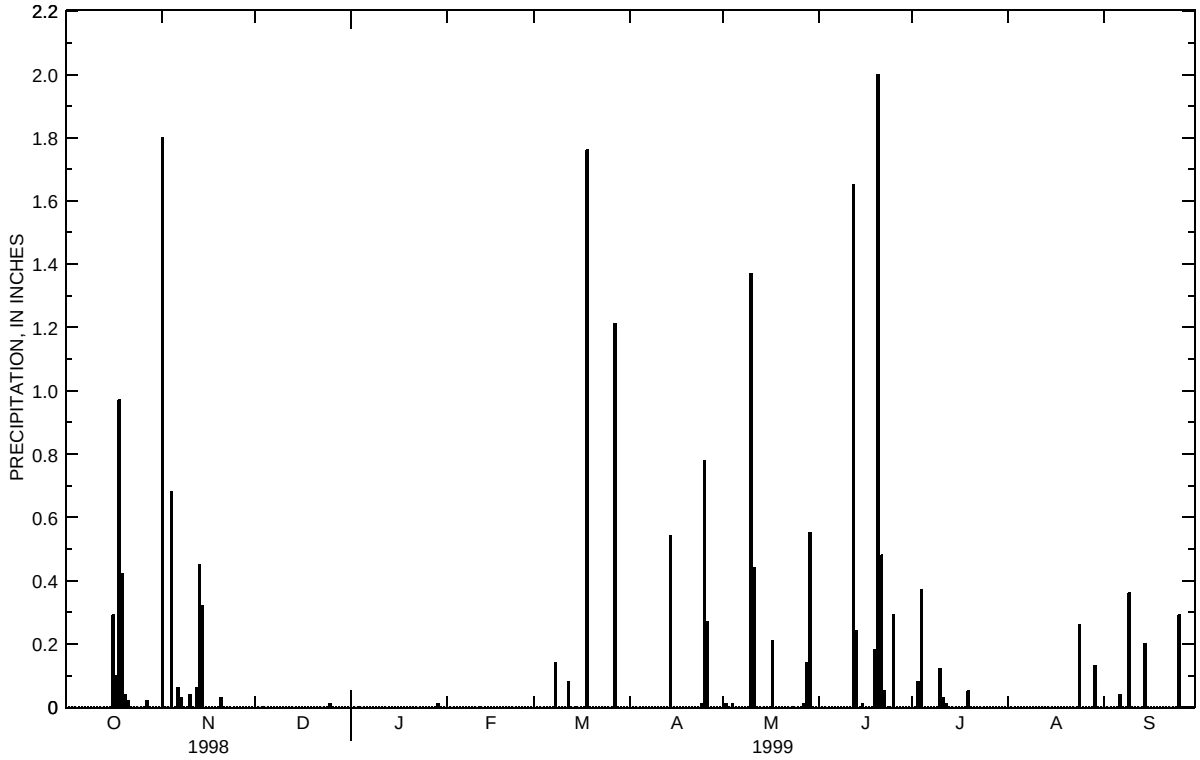
INSTRUMENTATION.--Recording tipping bucket rain gage at site.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 2.00 in., Jun 20.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1.80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	---	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
3	---	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00
4	---	.68	.00	.00	.00	.00	.00	.01	.00	.37	.00	.00
5	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	---	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04
7	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	---	.00	.00	.14	.00	.00	.00	.00	.00	.00
9	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.36
10	.00	.04	---	.00	.00	.00	.00	1.37	.00	.12	.00	.00
11	.00	.00	---	.00	.00	.00	.00	.44	.00	.03	.00	.00
12	.00	.06	---	.00	.00	.08	.00	.00	1.65	.01	.00	.00
13	.00	.45	---	.00	.00	.00	.00	.00	.24	.00	.00	.00
14	.00	.32	---	.00	.00	.00	.54	.00	.00	.00	.00	.20
15	.00	.00	---	.00	.00	.00	.00	.00	.01	.00	.00	.00
16	.29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.10	.00	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00
18	.97	.00	.00	.00	.00	1.76	.00	.00	.00	.00	.00	.00
19	.42	.00	.00	.00	.00	.00	.00	.00	.18	.05	.00	.00
20	.04	.03	.00	.00	.00	.00	.00	.00	2.00	.00	.00	.00
21	.02	.00	.00	.00	.00	.00	.00	.00	.48	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.26	.00
25	.00	.00	.01	.00	.00	.00	.78	.00	.29	.00	.00	.29
26	.00	.00	.00	.00	.00	.00	.27	.00	.00	.00	.00	.00
27	.02	.00	.00	.00	.00	1.21	.00	.01	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00
29	.00	.00	.00	.01	---	.00	.00	.55	.00	.00	.13	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	---	3.47	---	0.01	0.00	3.19	1.60	2.74	4.90	0.66	0.39	0.89
MAX	---	1.80	---	.01	.00	1.76	.78	1.37	2.00	.37	.26	.36
MIN	---	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.00


PRECIPITATION, IN INCHES
2.2
2.0
1.8
1.6
1.4
1.2
1.0
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1998
1999

08166200 GUADALUPE RIVER AT KERRVILLE, TX

LOCATION.--Lat 30°03'11", long 99°09'47", Kerr County, Hydrologic Unit 12100201, on left bank 300 ft below left end of Kerrville Dam, 1.0 mi upstream from mouth of Town Creek, and 1.4 mi upstream from State Highway 16 on Guadalupe Street at Guadalupe Park in Kerrville, Texas.

DRAINAGE AREA.--510 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 1,601.00 ft above sea level. Prior to Apr 4, 1989, at site 300 ft upstream, and on opposite bank at datum 1.0 ft lower. 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 by Kerrville Dam (capacity, 2,499 acre-ft). Numerous diversions for irrigation above station, amounts unknown.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum estimated discharge, 196,000 ft^3/s Jul 2, 1932 (estimated gage height, 39 ft).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	262	124	126	115	94	129	107	93	137	74	53
2	284	248	124	124	113	89	124	104	86	127	76	51
3	146	188	127	122	115	88	121	119	78	127	72	52
4	111	167	125	119	115	91	114	131	71	127	72	53
5	99	185	126	120	118	94	111	104	69	130	76	52
6	242	170	128	120	129	96	104	97	68	125	74	53
7	168	162	125	120	122	102	101	92	68	117	71	54
8	126	160	120	124	116	106	102	88	68	120	68	57
9	111	152	129	118	115	100	101	83	62	112	69	60
10	103	144	195	118	113	101	93	153	62	112	65	68
11	93	138	185	121	112	95	90	152	62	133	62	65
12	95	136	161	123	107	98	96	443	61	117	61	56
13	97	146	149	124	103	93	94	196	151	113	59	57
14	95	167	142	124	103	90	122	157	123	103	58	61
15	91	165	138	123	105	88	99	139	96	95	57	68
16	91	155	142	120	106	85	99	123	91	91	56	66
17	115	148	134	119	107	90	92	127	89	87	55	63
18	162	143	134	125	106	240	87	122	79	90	55	58
19	138	140	134	127	103	241	91	119	81	88	56	56
20	132	139	132	129	103	142	90	109	607	88	55	56
21	125	140	134	127	102	121	90	98	972	87	54	54
22	116	135	130	124	100	117	89	97	349	88	54	53
23	109	136	128	115	100	116	88	95	258	85	55	53
24	105	131	128	114	102	111	88	93	204	81	65	54
25	103	127	128	115	99	103	111	97	198	78	68	55
26	102	128	128	118	98	100	144	79	207	76	67	61
27	105	129	128	116	99	115	132	87	175	76	61	67
28	105	127	127	118	97	184	114	88	159	76	59	66
29	108	128	126	120	---	171	107	103	149	74	58	55
30	106	124	124	120	---	145	112	116	142	75	57	53
31	101	---	124	116	---	133	---	103	---	73	57	---
TOTAL	3766	4620	4179	3749	3023	3639	3135	3821	4978	3108	1946	1730
MEAN	121	154	135	121	108	117	105	123	166	100	62.8	57.7
MAX	284	262	195	129	129	241	144	443	972	137	76	68
MIN	82	124	120	114	97	85	87	79	61	73	54	51
AC-FT	7470	9160	8290	7440	6000	7220	6220	7580	9870	6160	3860	3430
CFSM	.24	.30	.26	.24	.21	.23	.20	.24	.33	.20	.12	.11
IN.	.27	.34	.30	.27	.22	.27	.23	.28	.36	.23	.14	.13

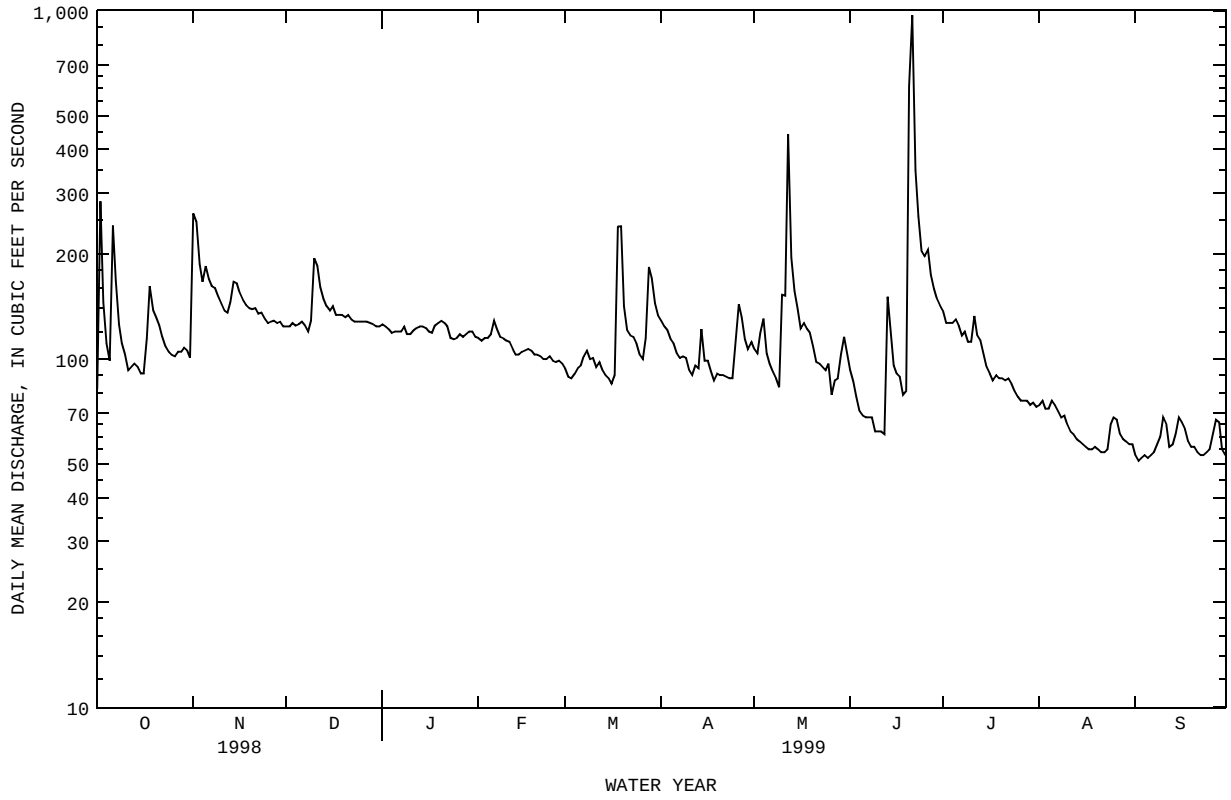
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

MEAN	136	113	149	126	158	166	130	177	234	227	114	118
MAX	442	180	572	282	555	547	329	313	1089	1572	281	256
(WY)	1997	1987	1992	1992	1992	1992	1992	1994	1987	1987	1987	1986
MIN	64.8	74.1	64.1	56.6	59.4	68.6	66.6	55.6	40.1	27.3	34.1	38.5
(WY)	1990	1994	1990	1996	1996	1996	1991	1996	1996	1996	1996	1989

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1986 - 1999	
ANNUAL TOTAL	50214		41694			
ANNUAL MEAN	138		114		155	
HIGHEST ANNUAL MEAN					399	1987
LOWEST ANNUAL MEAN					63.6	1996
HIGHEST DAILY MEAN	3960	Aug 23	972	Jun 21	36100	Jul 17 1987
LOWEST DAILY MEAN	39	Jul 27	51	Sep 2	17	Aug 7 1996
ANNUAL SEVEN-DAY MINIMUM	41	Jul 26	53	Sep 1	19	Aug 4 1996
INSTANTANEOUS PEAK FLOW			3320	Jun 20	i141000	Jul 17 1987
INSTANTANEOUS PEAK STAGE			4.87	Jun 20	37.72	Jul 17 1987
ANNUAL RUNOFF (AC-FT)	99600		82700		112100	
ANNUAL RUNOFF (CFSM)	.27		.22		.30	
ANNUAL RUNOFF (INCHES)	3.66		3.04		4.12	
10 PERCENT EXCEEDS	171		152		230	
50 PERCENT EXCEEDS	124		107		96	
90 PERCENT EXCEEDS	56		61		50	

i From indirect measurement of peak flow.

08166200 GUADALUPE RIVER AT KERRVILLE, TX--Continued



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 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1632: 1958. WSP 1732: 1939(M). WSP 2123: Drainage area, 1944(M), 1952(M), 1957(M), 1960(M).

GAGE.--Water-stage recorder. Datum of gage is 1,369.83 ft above sea level. Prior to Nov 27, 1939, nonrecording gage. Nov 27, 1939 to Jun 2, 1980, water-stage recorder at site 0.4 mi upstream at datum 2.22 ft higher. Jun 2, 1980 to Sep 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 by Kerrville Dam (capacity 2,499 acre-ft). There are many small diversions above station for irrigation.

AVERAGE DISCHARGE PRIOR TO REGULATION.--17 years (water years 1939-55) prior to regulation by Kerrville Dam, 127 ft^3/s (92,340 acre-ft/yr).

EXYREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1939-1955).--Maximum discharge 74,200 ft^3/s May 26, 1944 (gage height 29.40 ft); no flow at times 1952-55.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jul 1869 reached a stage of 42.3 ft, present datum, from report by U.S. Army Corps of Engineers. Flood of Jul 1, 1932, reached a stage of 38.4 ft, from floodmark, and from information by Texas Department of Transportation. Flood of Jul 16, 1900, reached about the same stage as that of Jul 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, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	577	232	216	169	149	219	153	129	173	88	64
2	805	605	232	218	168	144	215	148	120	162	86	61
3	410	424	233	203	166	140	210	151	114	152	85	59
4	239	349	237	201	167	137	199	172	111	159	81	59
5	185	387	231	204	167	143	190	159	106	158	81	58
6	374	361	229	205	174	146	179	138	102	155	82	60
7	376	339	226	207	182	145	170	131	99	148	79	58
8	265	319	217	207	171	157	169	127	99	140	76	59
9	215	310	211	204	168	154	171	123	97	142	73	62
10	192	292	422	193	166	151	164	198	91	129	71	65
11	174	264	425	195	167	152	154	215	90	536	69	72
12	162	257	345	197	159	150	149	489	86	269	66	68
13	162	277	300	199	153	171	153	411	91	204	64	60
14	162	373	275	194	152	154	169	259	170	172	66	57
15	155	409	263	192	153	145	176	220	131	148	62	61
16	150	370	257	191	154	141	151	191	118	135	61	74
17	182	338	254	190	154	139	147	175	112	129	57	73
18	346	320	244	187	154	207	140	177	108	126	58	70
19	339	307	245	191	152	471	138	165	103	125	61	64
20	272	279	240	194	151	279	140	158	228	121	57	61
21	251	288	241	193	151	213	136	154	1440	120	56	58
22	227	280	235	189	150	190	136	147	651	121	58	54
23	205	274	226	182	148	185	134	140	431	113	61	51
24	192	268	225	174	147	182	132	140	320	110	77	51
25	185	262	224	174	151	180	141	132	267	106	87	52
26	181	253	223	174	154	170	189	132	282	102	84	57
27	180	254	223	177	156	170	201	145	249	99	80	62
28	183	251	220	177	152	309	170	132	218	97	75	68
29	182	249	219	180	---	299	154	127	203	94	70	70
30	180	244	216	180	---	255	149	141	185	92	66	59
31	175	---	216	177	---	230	---	144	---	92	65	---
TOTAL	7411	9780	7786	5965	4456	5858	4945	5494	6551	4629	2202	1847
MEAN	239	326	251	192	159	189	165	177	218	149	71.0	61.6
MAX	805	605	425	218	182	471	219	489	1440	536	88	74
MIN	105	244	211	174	147	137	132	123	86	92	56	51
AC-FT	14700	19400	15440	11830	8840	11620	9810	10900	12990	9180	4370	3660

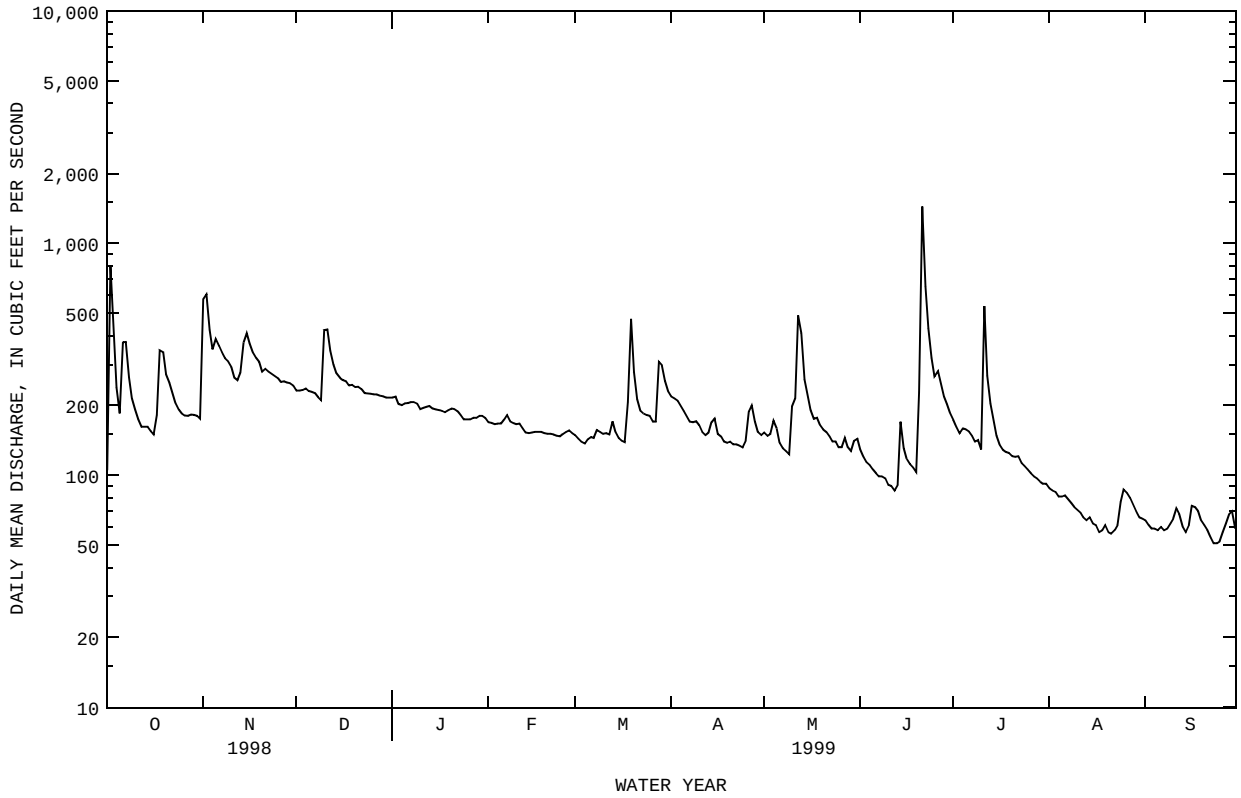
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1999z, BY WATER YEAR (WY)

MEAN	328	178	236	200	246	242	254	303	346	200	289	175
MAX	2417	518	2700	987	1728	1559	1598	1122	2820	1974	4782	575
(WY)	1986	1975	1992	1992	1992	1992	1977	1975	1987	1987	1978	1978
MIN	.000	3.63	10.5	16.8	24.4	16.6	15.5	14.9	.097	.000	2.66	5.90
(WY)	1957	1957	1957	1957	1957	1956	1956	1956	1956	1956	1963	1956

08167000 GUADALUPE RIVER AT COMFORT, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1956 - 1999z	
ANNUAL TOTAL	86185		66924			
ANNUAL MEAN	236		183		250	
HIGHEST ANNUAL MEAN					894	1992
LOWEST ANNUAL MEAN					14.5	1956
HIGHEST DAILY MEAN	3920	Mar 16	1440	Jun 21	74200	Aug 2 1978
LOWEST DAILY MEAN	45	Aug 1	51	Sep 23	.00	Jun 5 1956
ANNUAL SEVEN-DAY MINIMUM	47	Jul 29	55	Sep 20	.00	Jun 5 1956
INSTANTANEOUS PEAK FLOW			2580	Jun 21	c240000	Aug 2 1978
INSTANTANEOUS PEAK STAGE			7.35	Jun 21	a40.90	Aug 2 1978
ANNUAL RUNOFF (AC-FT)	170900		132700		181000	
10 PERCENT EXCEEDS	361		290		404	
50 PERCENT EXCEEDS	196		166		131	
90 PERCENT EXCEEDS	68		66		35	

z Period of regulated streamflow.
c From rating curve extended above 92,000 ft^3/s.
a From floodmark.



08167000 GUADALUPE RIVER AT COMFORT, TX--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--Jul 1995 to current year. Unpublished records July 1995 to Sep 1998.

INSTRUMENTATION.--Recording tipping bucket rain gage at site.

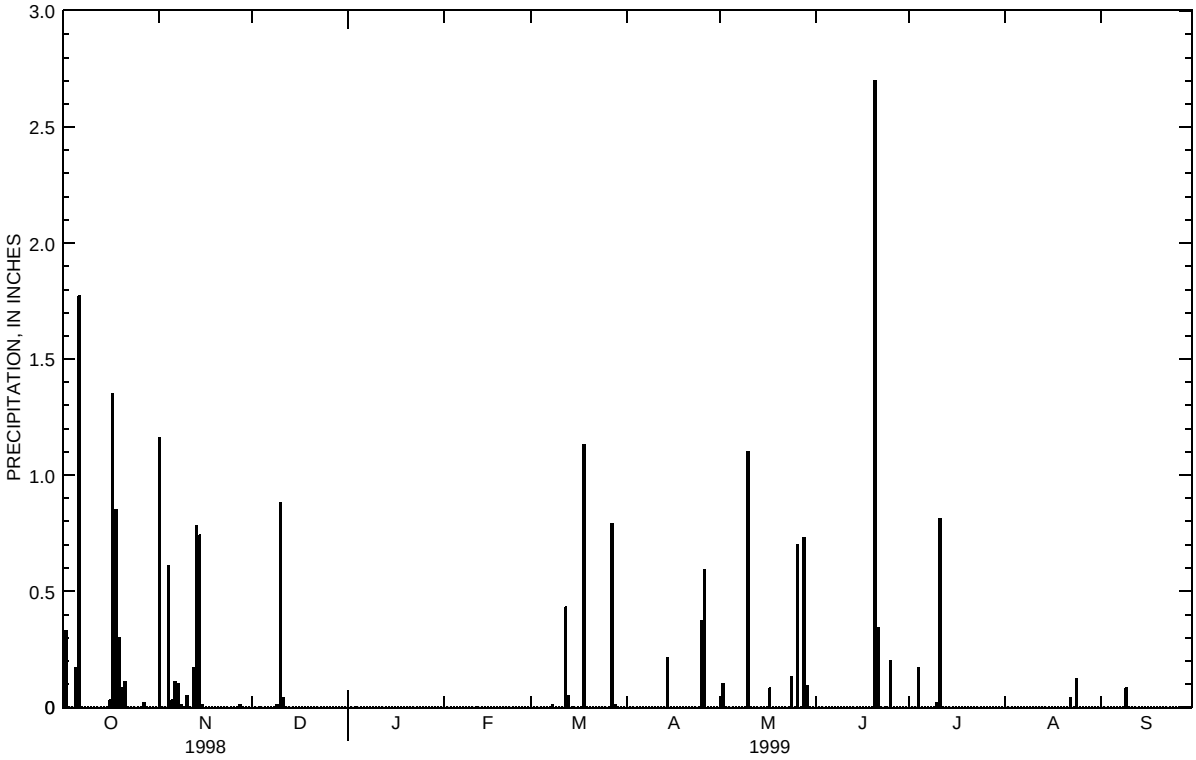
REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 2.70 in., Jun 20.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.33	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.61	.00	.00	.00	.00	.00	.00	.00	.17	.00	.00
5	.17	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	1.77	.11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.01	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
9	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.08
10	.00	.05	.88	.00	.00	.00	.00	1.10	.00	.02	.00	.00
11	.00	.00	.04	.00	.00	.00	.00	.00	.00	.81	.00	.00
12	.00	.17	.00	.00	.00	.43	.00	.00	.00	.00	.00	.00
13	.00	.78	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00
14	.00	.74	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00
15	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	1.35	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00
18	.85	.00	.00	.00	.00	1.13	.00	.00	.00	.00	.00	.00
19	.30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.08	.00	.00	.00	.00	.00	.00	.00	2.70	.00	.00	.00
21	.11	.00	.00	.00	.00	.00	.00	.00	.34	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.12	.00
25	.00	.00	.00	.00	.00	.00	.37	.00	.20	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.59	.70	.00	.00	.00	.00
27	.02	.01	.00	.00	.00	.79	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.01	.00	.73	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.09	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	---	3.78	0.93	0.00	0.00	2.42	1.17	2.93	3.24	1.00	0.16	0.08
MAX	---	1.16	.88	.00	.00	1.13	.59	1.10	2.70	.81	.12	.08
MIN	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

08167000 GUADALUPE RIVER AT COMFORT, TX--Continued



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 mi^2.

PERIOD OF RECORD.--Jun 1922 to current year.
Water-quality records.--Chemical data: Water years 1942 to 1945, Oct 1980 to Sep 1982, Oct 1989 to Aug 1995, Apr 1996 to Apr 1998. Biochemical data: Oct 1980 to Sep 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 sea level. 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 by Kerrville Dam (capacity 2,499 acre-ft). Several small diversions above station for irrigation.

AVERAGE DISCHARGE PRIOR TO REGULATION.--34 years (water years 1922-55) prior to regulation by Kerrville Dam, 249 ft^3/s (180,400 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1922-55).--Maximum discharge 121,000 ft^3/s Jul 3, 1932 (gage height 42.10 ft); no flow at times 1951-52, 1954-55.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1859, about 53 ft in 1869; flood in Jul 1900 reached a stage of about 49 ft, from information by local resident.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	129	880	491	332	242	196	280	165	174	260	125	78
2	127	1200	475	327	235	191	266	166	159	242	125	78
3	637	867	467	320	233	185	252	171	147	238	118	79
4	420	690	462	307	231	179	250	170	137	229	113	77
5	284	688	453	305	230	177	241	174	130	247	117	70
6	306	721	440	308	231	176	223	176	124	238	110	72
7	437	705	430	309	233	178	213	151	120	231	109	84
8	408	698	417	311	239	180	203	140	116	223	106	71
9	313	668	401	303	234	185	201	136	115	196	102	70
10	261	641	412	296	224	192	202	168	117	193	93	70
11	236	586	608	285	223	186	194	205	117	e350	86	74
12	219	554	596	287	221	189	181	243	118	e500	84	73
13	202	552	525	288	218	187	176	427	116	e400	78	77
14	196	787	479	283	208	195	182	440	e140	e325	78	74
15	198	1210	450	275	207	188	183	316	e200	264	78	67
16	188	1070	430	277	209	174	203	265	e190	239	73	65
17	e15600	960	420	277	209	169	176	235	e185	222	69	64
18	e5520	879	416	272	207	177	170	216	e180	205	68	74
19	e1590	826	409	266	204	254	165	213	e170	197	66	79
20	e920	773	400	269	200	449	159	202	e160	185	67	74
21	e720	716	394	276	198	314	158	189	e1000	185	71	69
22	e595	697	379	275	196	250	158	183	e1500	178	69	64
23	e515	671	368	262	196	224	156	175	e800	171	71	62
24	e470	643	359	256	196	214	152	169	e600	166	77	61
25	e440	615	356	248	197	207	155	167	e500	160	77	57
26	e410	589	354	245	203	198	171	162	e400	153	97	50
27	e400	563	353	244	204	192	200	160	e420	147	98	53
28	e390	549	350	248	199	220	224	176	e340	146	95	58
29	e385	535	343	249	---	328	197	195	e300	136	91	63
30	e370	518	338	247	---	335	176	170	e280	127	87	64
31	367	---	335	245	---	304	---	165	---	125	82	---
TOTAL	33253	22051	13110	8692	6027	6793	5867	6290	9055	6878	2780	2071
MEAN	1073	735	423	280	215	219	196	203	302	222	89.7	69.0
MAX	15600	1210	608	332	242	449	280	440	1500	500	125	84
MIN	127	518	335	244	196	169	152	136	115	125	66	50
AC-FT	65960	43740	26000	17240	11950	13470	11640	12480	17960	13640	5510	4110

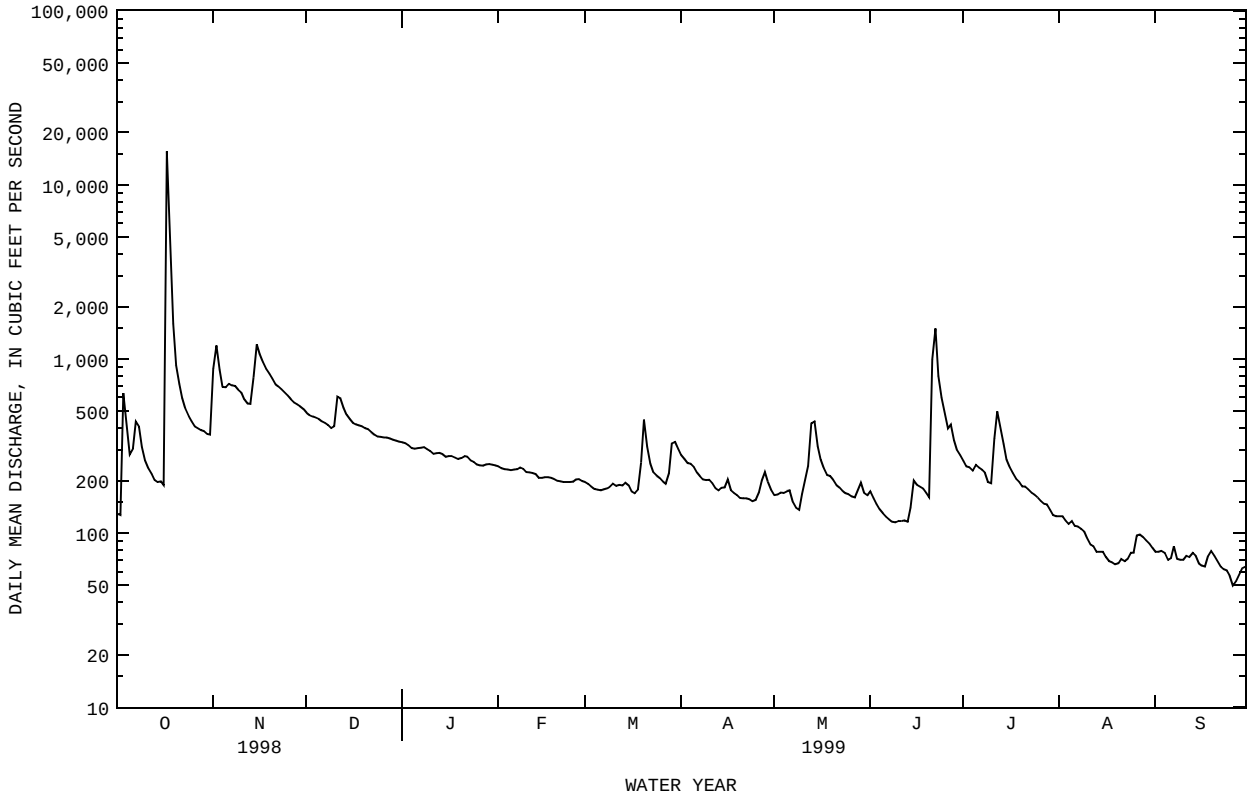
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1999z, BY WATER YEAR (WY)

MEAN	468	294	399	360	459	447	458	578	741	354	362	261
MAX	1584	939	4927	1903	4164	3306	2417	2216	6329	2626	4980	941
(WY)	1982	1975	1992	1992	1992	1992	1977	1992	1987	1987	1978	1978
MIN	6.77	11.1	6.48	10.9	29.3	16.8	6.11	19.3	.000	.000	3.24	6.85
(WY)	1957	1957	1957	1957	1956	1956	1956	1956	1956	1956	1963	1956

08167500 GUADALUPE RIVER NEAR SPRING BRANCH, TX--Continued
(Hydrologic index station)

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1956 - 1999z	
ANNUAL TOTAL	181726		122867			
ANNUAL MEAN	498		337		431	
HIGHEST ANNUAL MEAN					1819	1992
LOWEST ANNUAL MEAN					13.3	1956
HIGHEST DAILY MEAN	15600	Oct 17	15600	Oct 17	76500	Aug 3 1978
LOWEST DAILY MEAN	45	Aug 3	50	Sep 26	.00	May 29 1956
ANNUAL SEVEN-DAY MINIMUM	47	Jul 30	58	Sep 23	.00	May 29 1956
INSTANTANEOUS PEAK FLOW			51400	Oct 17	i160000	Aug 3 1978
INSTANTANEOUS PEAK STAGE			a32.68	Oct 17	a45.25	Aug 3 1978
ANNUAL RUNOFF (AC-FT)	360500		243700		312600	
10 PERCENT EXCEEDS	803		587		760	
50 PERCENT EXCEEDS	335		209		199	
90 PERCENT EXCEEDS	82		78		49	

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



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 mi^2.

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Jul 1962 to current year. Prior to Oct 1970, published as "Canyon Reservoir".
Water-quality records.--Chemical data: Oct 1980 to Sep 1982, Oct 1989 to Aug 1995. Biochemical data: Oct 1980 to Sep 1982, Oct 1989 to Aug 1995.

REVISED RECORDS.--WSP 2123: Drainage area.

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

REMARKS.--The lake is formed by a rolled earthfill dam 6,830 ft long, consisting of the main dam 4,410 ft long, an earthen dike 210 ft long, a 1,260-foot-long uncontrolled broad-crested-type spillway, and a 950-foot concrete and earthen nonoverflow section. Deliberate impoundment began Jun 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 lake was built for water conservation and flood control. Capacity table beginning Oct 1, 1974, is based on a sedimentation survey of Aug 1972. Small diversions above the lake for irrigation. Figures given herein represent total contents. 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	909.0
Lowest gated outlet (invert)	775.0

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 732,600 acre-ft, Jun 19, 1987 (elevation, 942.68 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, 515,600 acre-ft, Nov 3-4 (elevation, 923.70 ft); minimum contents, 369,000 acre-ft, Sep 30 (elevation, 907.40 ft).

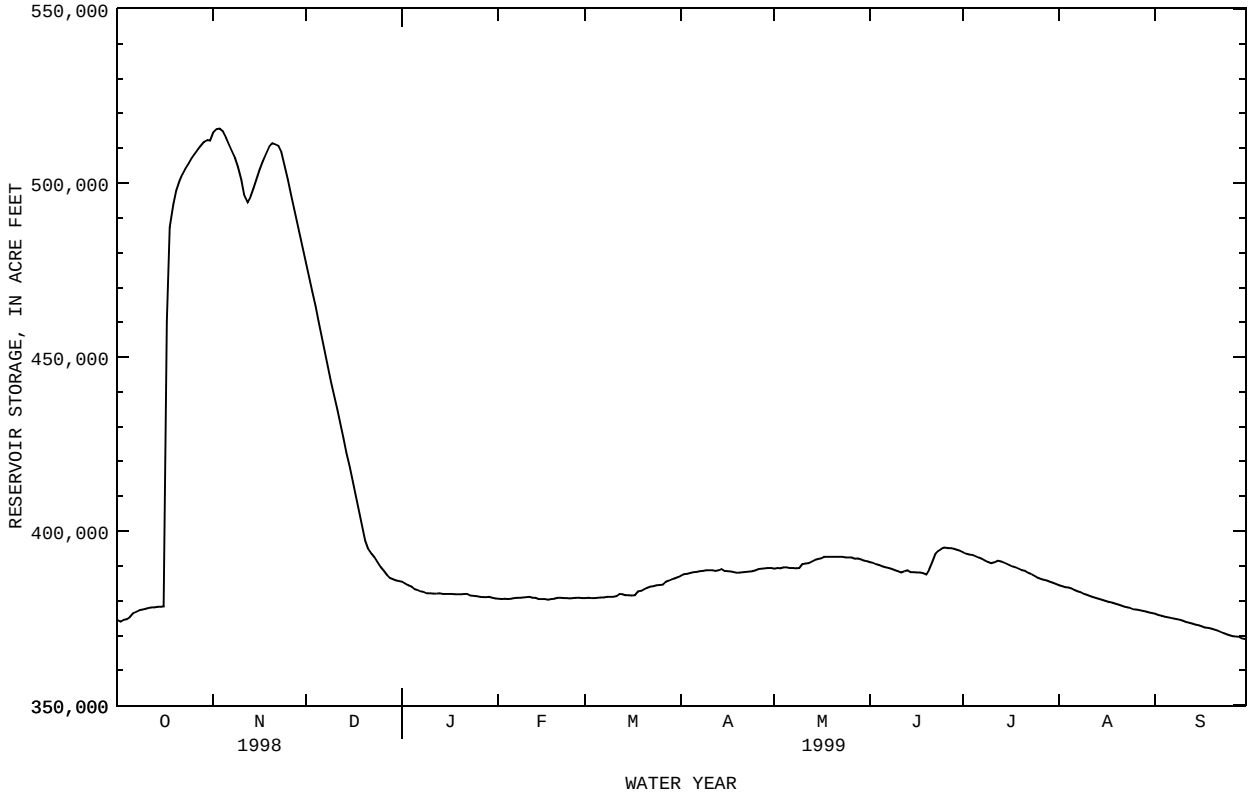
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	374500	514500	477100	385500	380600	380800	387300	389200	391100	393900	384500	376300
2	374100	515500	472700	384900	380500	380800	387600	389400	390900	393500	384100	375900
3	374500	515600	468700	384500	380600	380800	387800	389300	390600	393300	383900	375700
4	374600	515000	464700	384100	380500	380800	388100	389600	390200	393200	383800	375500
5	375400	513100	460400	383400	380600	380800	388200	389600	389900	392800	383500	375300
6	376500	511000	456200	383100	380800	380900	388300	389500	389600	392500	383100	375100
7	376800	509200	451900	382700	380800	380900	388500	389500	389500	392100	382700	374900
8	377200	507200	447300	382600	380800	381100	388600	389300	389100	391700	382400	374700
9	377500	504700	442900	382200	380900	381100	388800	389500	388800	391100	382000	374500
10	377700	500900	438900	382200	381000	381200	388800	390500	388500	390800	381700	374200
11	377900	496500	434900	382100	381200	381300	388700	390600	388100	391100	381300	373900
12	378100	494600	430900	382100	380800	382000	388600	390800	388500	391500	381000	373700
13	378100	496000	426800	382200	380800	381800	388800	391200	388700	391400	380800	373400
14	378200	498500	422600	382000	380500	381600	389100	391700	388200	391100	380500	373200
15	378300	501400	418400	382000	380400	381600	388600	392000	388200	390600	380200	372900
16	378400	503900	414200	382000	380400	381500	388500	392200	388100	390200	379900	372700
17	460200	506300	409900	382000	380400	381600	388400	392700	388100	389900	379700	372400
18	487300	508500	405700	381800	380500	382700	388200	392600	387900	389600	379500	372200
19	493800	510600	401500	381800	380600	382900	388100	392600	387600	389200	379200	372000
20	497800	511500	397200	381800	380800	383400	388100	392600	389000	388800	379000	371800
21	500500	511200	394900	381900	380800	383700	388200	392600	391100	388600	378600	371500
22	502600	510800	393600	381900	380800	384100	388300	392600	393500	388100	378300	371200
23	504200	508900	392400	381500	380800	384200	388400	392600	394400	387600	378100	370700
24	505700	505000	391000	381400	380700	384500	388500	392500	395000	387200	377900	370400
25	507200	501200	389700	381300	380800	384600	388800	392400	395300	386600	377600	370100
26	508500	497200	388600	381200	380800	384600	389100	392400	395100	386300	377500	369900
27	509800	493300	387500	381000	380800	385500	389200	392100	395100	386100	377200	369700
28	510900	489200	386600	381000	380800	385900	389300	392200	394900	385800	377100	369600
29	512000	485300	386200	381100	---	386200	389400	391900	394700	385500	376900	369200
30	512400	481200	385900	380800	---	386500	389400	391600	394300	385100	376700	369000
31	512200	---	385600	380700	---	386900	---	391300	---	384800	376400	---
MAX	512400	515600	477100	385500	381200	386900	389400	392700	395300	393900	384500	376300
MIN	374100	481200	385600	380700	380400	380800	387300	389200	387600	384800	376400	369000
(+)	923.35	920.17	909.44	908.84	908.85	909.59	909.89	910.12	910.48	909.34	908.32	907.41
(@)	+137200	-31000	-95600	-4900	+100	+6100	+2500	+1900	+3000	-9500	-8400	-7400

CAL YR 1998 MAX 515600 MIN 365000 (@) +2100
WTR YR 1999 MAX 515600 MIN 369000 (@) -6000

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

08167700 CANYON LAKE NEAR NEW BRAUNFELS, TX--Continued



08167700 CANYON LAKE NEAR NEW BRAUNFELS, TX--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--Sep 1998 to current year. Unpublished records Sep 1998.

INSTRUMENTATION.--Recording tipping bucket rain gage at site.

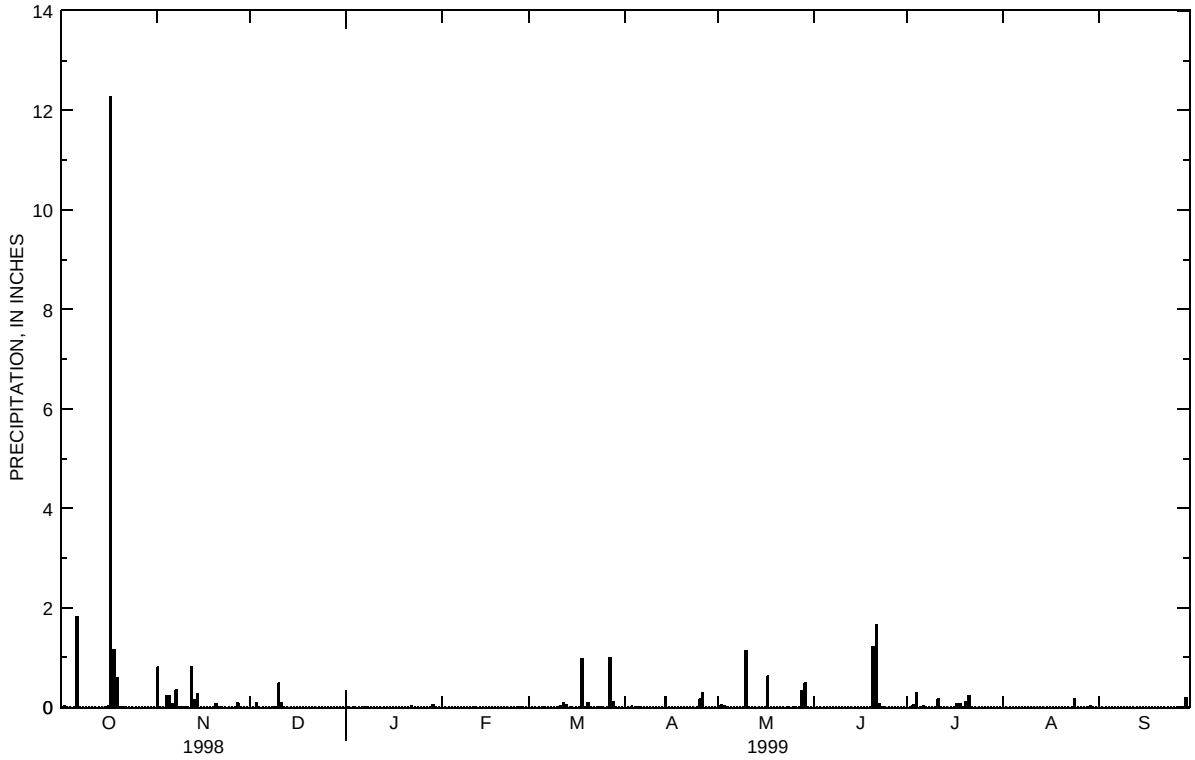
REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 12.28 in., Oct 17.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.80	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
2	.02	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00
3	.00	.00	.09	.00	.00	.00	.02	.02	.00	.04	.00	.00
4	.00	.22	.00	.00	.00	.00	.00	.01	.00	.29	.00	.00
5	.00	.22	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
6	1.81	.06	.00	.00	.00	.01	.00	.00	.00	.02	.00	.00
7	.00	.34	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.01	.48	.00	.00	.00	.00	1.13	.00	.00	.00	.00
11	.00	.00	.09	.00	.01	.02	.00	.00	---	.16	.00	.00
12	.00	.80	.00	.00	.00	.08	.00	.00	---	.00	.00	.00
13	.00	.15	.00	.00	.00	.04	.00	.00	---	.00	.00	.00
14	.00	.27	.00	.00	.00	.00	.20	.00	---	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	---	.00	.00	.00
16	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	12.28	.00	.00	.00	.00	.00	.00	.62	.00	.07	.00	.00
18	1.15	.00	.00	.00	.00	.97	.00	.00	.00	.07	.00	.00
19	.59	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.06	.00	.00	.00	.09	.00	.00	1.21	.11	.00	.00
21	.01	.01	.00	.00	.00	.00	.00	.00	1.65	.23	.00	.00
22	.00	.00	.00	.02	.00	.00	.00	.00	.07	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
24	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.17	.00
25	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.01	.00	.29	.01	.00	.00	.00	.00
27	.00	.08	.00	.00	.00	.99	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.11	.00	.33	.00	.00	.00	.00
29	.00	.00	.00	.05	---	.00	.00	.48	.00	.00	.02	.19
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	15.88	3.03	0.67	0.09	0.02	2.32	0.68	2.64	---	0.99	0.19	0.19
MAX	12.28	.80	.48	.05	.01	.99	.29	1.13	---	.29	.17	.19
MIN	.00	.00	.00	.00	.00	.00	.00	.00	---	.00	.00	.00

08167700 CANYON LAKE NEAR NEW BRAUNFELS, TX--Continued



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 mi^2, of which 1,432 mi^2 is above Canyon Dam.

PERIOD OF RECORD.--Mar 1960 to current year.
Water-quality records.--Chemical data: Oct 1980 to Sep 1982, Oct 1989 to Aug 1995. Biochemical data: Oct 1980 to Sep 1982, Oct 1989 to Aug 1995. Water temperature: Jun 1984 to Sep 1987.

REVISED RECORDS.--WSP 2123: Drainage area.

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

REMARKS.--No estimated daily discharges. Records good. Since 1960, at least 10% of contributing drainage area has been regulated by Kerrville Dam (capacity 2,499 acre-ft). Since Jul 21, 1962, flow completely regulated by Canyon Lake (station 08167700, normal storage 386,200 acre-ft) 1.8 mi upstream. Small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jul 1869 (stage unknown) has not been exceeded since that date; flood in Jul 1900 (stage unknown) exceeded 39 ft; maximum stage since at least 1904, 39 ft in Jul 1932 and Jun 1935, from information by local residents.

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

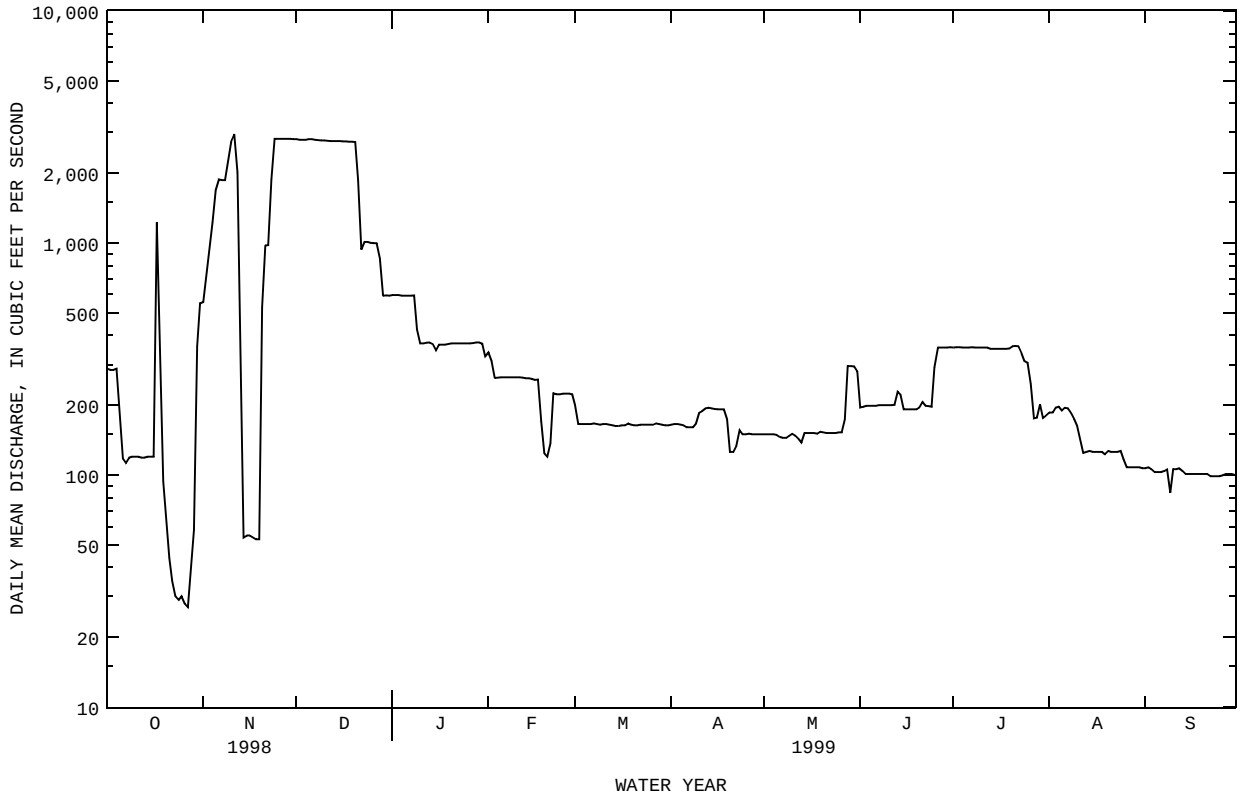
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	288	557	2800	597	338	200	165	150	196	355	186	107
2	284	736	2790	597	310	166	166	150	197	356	186	108
3	284	967	2790	597	262	166	166	150	199	356	195	106
4	287	1230	2790	594	263	166	165	150	199	355	197	103
5	187	1690	2800	594	264	166	164	149	199	355	190	103
6	118	1880	2800	594	264	166	161	146	199	355	195	103
7	113	1870	2790	594	264	167	161	145	200	356	194	104
8	119	1870	2780	595	264	166	161	145	200	355	185	106
9	120	2210	2770	425	264	165	167	148	200	355	174	84
10	120	2770	2770	370	264	166	186	151	200	355	163	106
11	120	2950	2760	370	264	166	189	148	200	355	141	106
12	119	2020	2750	372	263	165	194	144	201	355	125	107
13	119	267	2750	373	261	164	195	138	229	350	126	104
14	120	54	2750	367	261	163	194	152	222	350	127	101
15	120	55	2750	346	260	163	193	152	192	350	126	101
16	120	55	2740	365	257	164	192	152	192	350	126	101
17	1230	54	2740	365	258	164	192	152	192	350	126	101
18	319	53	2730	365	172	167	192	151	192	350	126	101
19	94	53	2730	367	124	165	174	154	192	351	123	101
20	64	528	2720	370	120	164	126	153	196	359	127	101
21	44	976	1860	370	137	164	126	152	207	360	126	101
22	35	980	936	370	225	165	134	152	199	359	126	99
23	30	1880	1010	370	223	165	156	152	198	335	126	99
24	29	2810	1010	370	223	165	150	152	197	310	127	99
25	30	2810	1000	370	224	165	150	153	292	306	117	99
26	28	2810	998	370	224	165	151	153	355	248	108	100
27	27	2810	998	371	224	167	150	174	355	176	108	101
28	39	2810	859	373	223	166	150	295	355	177	108	101
29	58	2810	594	373	---	165	150	295	355	202	108	101
30	359	2800	595	369	---	164	150	294	356	177	108	100
31	549	---	594	326	---	164	---	279	---	181	107	---
TOTAL	5573	45365	65754	13249	6700	5154	4970	5231	6866	9904	4407	3054
MEAN	180	1512	2121	427	239	166	166	169	229	319	142	102
MAX	1230	2950	2800	597	338	200	195	295	356	360	197	108
MIN	27	53	594	326	120	163	126	138	192	176	107	84
AC-FT	11050	89980	130400	26280	13290	10220	9860	10380	13620	19640	8740	6060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

MEAN	333	363	346	444	435	498	506	485	629	612	467	289
MAX	1463	1512	2121	4437	2089	3949	3705	2318	2783	5309	3854	1306
(WY)	1961	1999	1999	1992	1992	1992	1992	1992	1992	1997	1978	1987
MIN	43.1	66.2	41.4	60.4	13.4	71.7	45.6	47.1	36.1	22.1	7.32	10.5
(WY)	1964	1976	1966	1964	1965	1988	1971	1971	1963	1963	1962	1963

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999	
ANNUAL TOTAL	244389		176227			
ANNUAL MEAN	670		483		453	
HIGHEST ANNUAL MEAN					1900	1992
LOWEST ANNUAL MEAN					69.4	1963
HIGHEST DAILY MEAN	2950	Nov 11	2950	Nov 11	10000	Oct 29 1960
LOWEST DAILY MEAN	27	Oct 27	27	Oct 27	.00	Jul 31 1962
ANNUAL SEVEN-DAY MINIMUM	31	Oct 22	31	Oct 22	.00	Jul 31 1962
INSTANTANEOUS PEAK FLOW			10300	Oct 17	20800	Oct 29 1960
INSTANTANEOUS PEAK STAGE			9.29	Oct 17	12.20	Oct 29 1960
ANNUAL RUNOFF (AC-FT)	484700		349500		328400	
10 PERCENT EXCEEDS	2330		1760		800	
50 PERCENT EXCEEDS	314		193		215	
90 PERCENT EXCEEDS	120		103		71	

08167800 GUADALUPE RIVER AT SATTLER, TX--Continued



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 mi^2, of which 1,432 mi^2 is above Canyon Dam.

PERIOD OF RECORD.--Jan 1928 to current year.

REVISED RECORDS.--WSP 898: 1935. WSP 1562: 1932. WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 586.65 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since 1956, at least 10% of contributing drainage area has been regulated by Kerrville Dam (capacity 2,499 acre-ft). Since Jul 21, 1962, flow completely regulated by Canyon Lake (station 08167700, normal storage 386,200 acre-ft) 21.9 mi upstream. Small diversions for irrigation below above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--28 years (water years 1928-55) prior to regulation by Kerrville Dam, 344 ft^3/s (249,300 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1928-55).--Maximum discharge, 101,000 ft^3/s Jun 15, 1935 (gage height, 32.95 ft); minimum, 2.2 ft^3/s Sep 27-29, 1954.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	333	1030	2810	734	410	307	246	212	256	402	206	117
2	328	1050	2810	732	451	270	252	210	226	393	205	117
3	327	1450	2810	741	380	247	246	210	224	389	202	117
4	324	1600	2820	740	374	242	244	210	225	394	217	117
5	299	1910	2840	740	371	241	241	210	225	394	206	114
6	239	2010	2840	742	371	241	235	207	225	387	205	114
7	224	2020	2830	743	371	241	228	202	225	389	205	112
8	220	2010	2850	742	363	241	235	201	225	387	204	113
9	215	2180	2870	645	363	241	235	201	225	387	200	116
10	205	2710	2870	511	363	241	242	211	225	398	184	95
11	199	3030	2860	511	363	241	252	211	225	388	181	106
12	193	2550	2840	511	363	241	252	204	229	387	150	106
13	186	808	2830	511	363	240	258	192	235	387	148	106
14	182	353	2820	511	363	235	276	186	285	387	145	104
15	178	359	2820	494	363	235	277	209	226	387	145	103
16	174	360	2820	499	363	235	271	205	232	387	142	101
17	37400	352	2810	496	358	235	270	201	226	387	142	101
18	13500	342	2810	500	334	235	270	211	220	379	142	102
19	1470	339	2810	503	294	255	270	185	220	379	142	101
20	1020	487	2810	503	251	247	240	190	232	379	140	100
21	795	1190	2660	503	230	241	206	187	393	379	142	100
22	628	1180	1080	499	249	236	205	187	347	379	142	100
23	532	1600	1120	495	299	235	213	187	307	377	142	100
24	469	2740	1120	493	307	240	225	184	289	345	142	101
25	432	2740	1120	488	307	241	227	183	299	335	144	103
26	405	2740	1120	488	307	241	226	187	420	325	126	103
27	378	2740	1120	488	307	244	227	187	415	233	121	103
28	362	2800	1090	488	307	278	225	276	403	205	121	103
29	360	2820	746	486	---	254	222	327	403	213	121	106
30	493	2810	740	481	---	248	218	327	403	218	121	106
31	946	---	735	472	---	246	---	321	---	198	120	---
TOTAL	63016	50310	69231	17490	9545	7615	7234	6621	8290	10974	4953	3187
MEAN	2033	1677	2233	564	341	246	241	214	276	354	160	106
MAX	37400	3030	2870	743	451	307	277	327	420	402	217	117
MIN	174	339	735	472	230	235	205	183	220	198	120	95
AC-FT	125000	99790	137300	34690	18930	15100	14350	13130	16440	21770	9820	6320

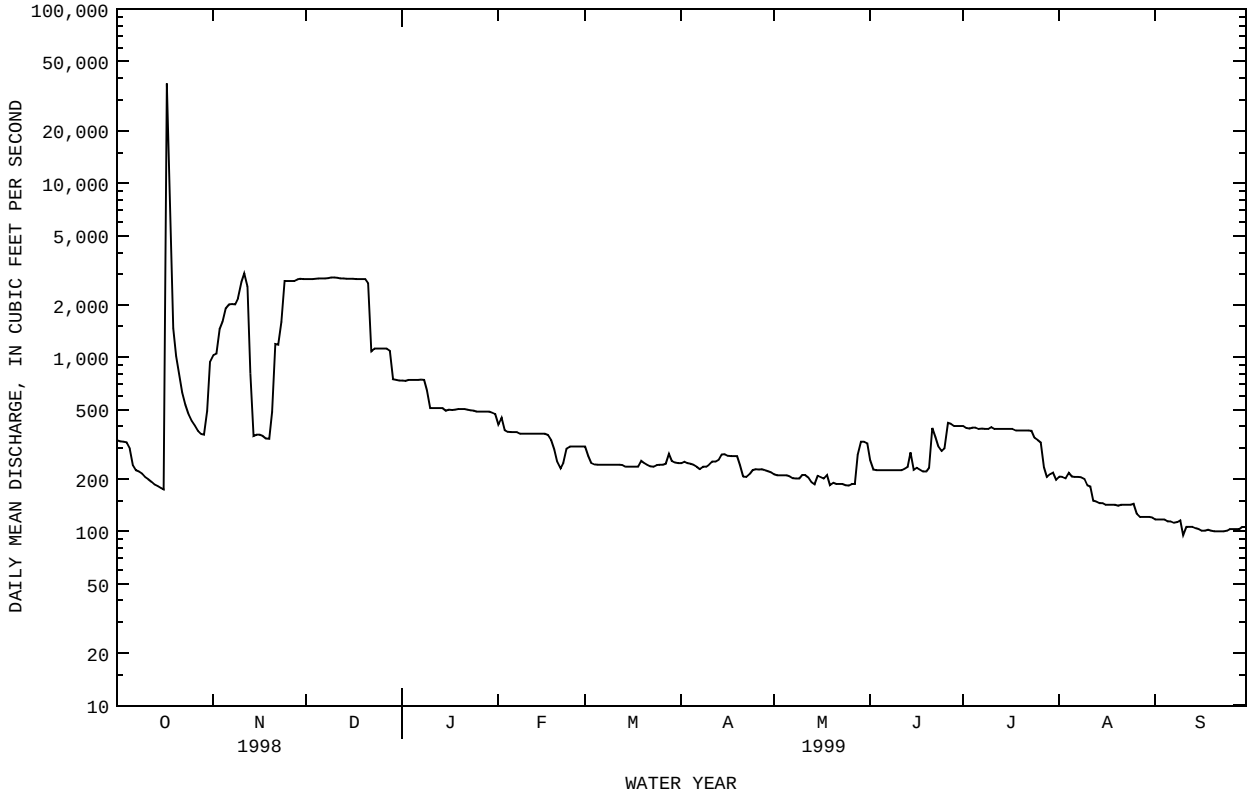
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1999z, BY WATER YEAR (WY)

MEAN	488	434	412	511	524	579	603	625	733	639	491	348
MAX	2033	1677	2233	4704	2379	4254	3826	2450	2948	5236	3866	1484
(WY)	1999	1999	1999	1992	1992	1992	1992	1992	1992	1997	1978	1987
MIN	9.99	11.8	21.8	12.3	31.2	19.6	9.35	13.7	.67	.055	6.64	4.87
(WY)	1957	1956	1957	1957	1956	1956	1956	1956	1956	1956	1956	1956

08168500 GUADALUPE RIVER ABOVE COMAL RIVER AT NEW BRAUNFELS, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1956 - 1999z	
ANNUAL TOTAL	331531		258466			
ANNUAL MEAN	908		708		533	
HIGHEST ANNUAL MEAN					2057	1992
LOWEST ANNUAL MEAN					13.8	1956
HIGHEST DAILY MEAN	37400	Oct 17	37400	Oct 17	37400	Oct 17 1998
LOWEST DAILY MEAN	132	Aug 12	95	Sep 10	.00	Jul 8 1956
ANNUAL SEVEN-DAY MINIMUM	134	Jul 28	101	Sep 17	.00	Jul 17 1956
INSTANTANEOUS PEAK FLOW			i142000	Oct 17	i142000	Oct 17 1998
INSTANTANEOUS PEAK STAGE			a35.57	Oct 17	a35.57	Oct 17 1998
ANNUAL RUNOFF (AC-FT)	657600		512700		385800	
10 PERCENT EXCEEDS	2370		2010		981	
50 PERCENT EXCEEDS	377		271		287	
90 PERCENT EXCEEDS	144		134		76	

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



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.--Oct 1929 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 582.80 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges Oct 17-27, which are poor. Springflow is equal to flow at Comal River (station 08169000) except during periods of local runoff. During periods of 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 was 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.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	260	e432	429	421	411	389	384	365	346	344	339	311
2	259	e433	429	420	407	389	383	368	342	343	336	308
3	259	e433	429	415	409	389	379	369	338	348	331	304
4	259	e430	429	417	407	389	380	367	337	347	330	308
5	257	e429	429	416	407	389	382	363	337	351	331	312
6	e263	e429	429	417	406	387	380	361	333	345	330	308
7	e264	e429	428	419	406	388	383	360	329	346	333	303
8	268	e429	425	415	405	389	380	357	324	350	329	303
9	269	e429	425	414	404	387	380	359	324	343	326	303
10	270	430	428	417	404	386	377	e361	318	e347	323	303
11	270	430	433	418	401	385	375	364	317	e352	323	302
12	270	e434	428	416	399	388	372	362	e323	356	319	303
13	269	438	425	415	399	391	375	361	329	352	319	301
14	271	e436	424	413	400	383	378	361	324	353	319	298
15	274	e433	424	414	399	384	371	360	322	349	317	297
16	273	431	427	416	399	384	372	362	320	351	314	295
17	e284	424	425	417	398	382	371	363	322	356	308	296
18	e296	424	426	415	396	384	370	e362	322	355	310	292
19	e308	426	426	415	395	386	367	361	326	351	309	294
20	e321	426	428	415	394	383	368	361	e330	349	307	293
21	e334	426	425	415	391	383	368	359	e334	350	303	291
22	e347	424	418	415	395	386	368	357	e338	350	305	290
23	e362	424	419	414	390	383	367	358	342	348	306	291
24	e376	427	419	413	390	385	365	357	342	352	307	289
25	e392	429	420	413	390	384	370	355	342	351	309	289
26	e408	429	420	413	391	380	e367	358	346	345	310	288
27	e425	429	420	413	390	e383	364	353	346	344	310	287
28	e442	429	419	411	389	e385	367	350	345	344	307	286
29	e438	429	418	412	---	388	367	356	345	342	312	286
30	e438	429	419	411	---	385	365	353	344	340	313	286
31	e433	---	419	410	---	385	---	350	---	342	308	---
TOTAL	9859	12880	13162	12865	11172	11959	11195	11153	9987	10796	9843	8917
MEAN	318	429	425	415	399	386	373	360	333	348	318	297
MAX	442	438	433	421	411	391	384	369	346	356	339	312
MIN	257	424	418	410	389	380	364	350	317	340	303	286
AC-FT	19560	25550	26110	25520	22160	23720	22210	22120	19810	21410	19520	17690

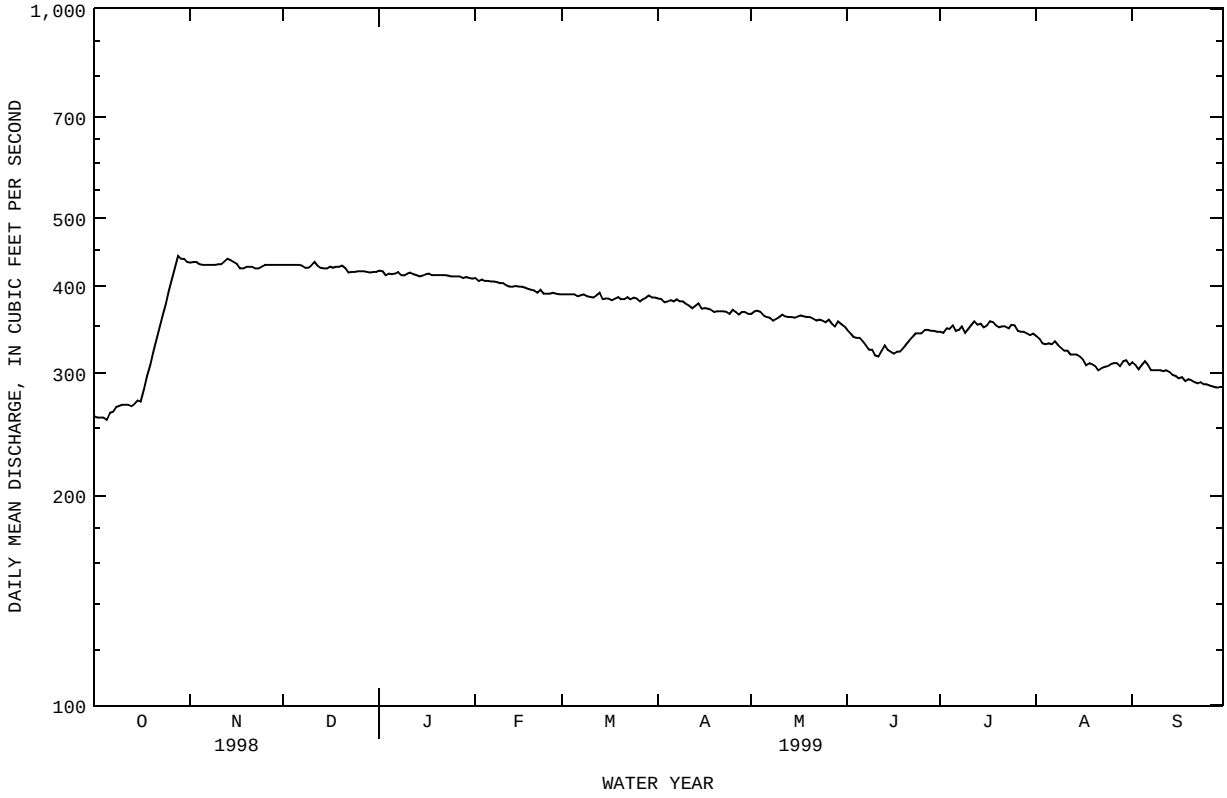
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1999, BY WATER YEAR (WY)

MEAN	274	285	294	300	301	300	295	293	286	269	256	261
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
MIN	.000	21.5	35.6	51.1	49.5	65.4	41.5	27.8	3.67	.000	.000	.000
(WY)	1957	1957	1957	1957	1957	1957	1956	1956	1956	1956	1956	1956

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1930 - 1999	
ANNUAL TOTAL	109513		133788			
ANNUAL MEAN	300		367		284	
HIGHEST ANNUAL MEAN					402	1993
LOWEST ANNUAL MEAN					45.5	1956
HIGHEST DAILY MEAN	442	Oct 28	442	Oct 28	534	Oct 14 1973
LOWEST DAILY MEAN	168	Aug 4	257	Oct 5	.00	Jun 13 1956
ANNUAL SEVEN-DAY MINIMUM	175	Jul 30	260	Oct 1	.00	Jun 13 1956
ANNUAL RUNOFF (AC-FT)	217200		265400		205700	
10 PERCENT EXCEEDS	428		428		380	
50 PERCENT EXCEEDS	308		368		304	
90 PERCENT EXCEEDS	199		302		170	

e Estimated

08168710 COMAL SPRINGS AT NEW BRAUNFELS, TX--Continued



08169000 COMAL RIVER AT NEW BRAUNFELS, TX

LOCATION.--Lat 29°42'21", long 98°07'20", Comal County, Hydrologic Unit 12100202, on right bank 200 ft upstream from San Antonio Street viaduct in New Braunfels and 1.1 mi upstream from mouth.

DRAINAGE AREA.--130 mi^2 of contributing surface drainage, however, most of the time flow is solely from Comal Springs.

PERIOD OF RECORD.--1882 to Sep 1932 (discharge measurements and fragmentary daily discharge record), Oct 1932 to current year. Water-quality records.--Chemical data: Apr 1996 to Apr 1998. Biochemical data: Apr 1996 to Apr 1998. Sediment data: Apr 1996 to Apr 1998.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control since Oct 1, 1955. Datum of gage is 582.80 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges Oct 17-19, which are poor. Since water year 1974 at least 10% of contributing drainage area has been regulated by Landa Park Lake. Entire flow of river is from Comal Springs (station 08168710) except during periods of local runoff. Comal Springs emerge from the Edwards and associated limestones in the Balcones Fault Zone about 1.0 mi upstream. No flow from Comal Springs from Jun 13 to Nov 3, 1956. Flow is affected at times by cleanup operations by the city of New Braunfels at Landa Park Lake and at times by discharge from the flood-detention pools of five floodwater-retarding structures with a combined detention capacity of 17,580 acre-ft. These structures control runoff from 74.6 mi^2 above station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--41 years (water years 1933-73), 286 ft^3/s (207,200 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION.--Maximum discharge, 60,800 ft^3/s May 11, 1972 (gage height, 36.55 ft, from floodmark), from rating curve extended above 13,000 ft^3/s on basis of contracted-opening measurements on Blieders and Dry Comal Creeks and unit rainfall-runoff studies; no flow from Comal Springs from Jun 13 to Nov 3, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood information begins with flood of Jul 8, 1869, which reached a stage of 36.91 ft, from painted and dated marks in old Remmert Brewery 0.5 mi downstream; the flood of Oct 17, 1870, reached a stage of 37.65 ft at same site (probably some backwater from Guadalupe River).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	260	e432	429	421	411	389	384	365	346	344	339	311
2	259	e433	429	420	407	389	383	368	342	343	336	308
3	259	e433	429	415	409	389	379	369	338	348	331	304
4	259	e430	429	417	407	389	380	367	337	347	330	308
5	257	e429	429	416	407	389	382	363	337	351	331	312
6	e280	e429	429	417	406	387	380	361	333	345	330	308
7	e270	e429	428	419	406	388	383	360	329	346	333	303
8	268	e429	425	415	405	389	380	357	324	350	329	303
9	269	e429	425	414	404	387	380	359	324	343	326	303
10	270	430	428	417	404	386	377	377	318	407	323	303
11	270	430	433	418	401	385	375	364	317	446	323	302
12	270	441	428	416	399	388	372	362	338	356	319	303
13	269	438	425	415	399	391	375	361	329	352	319	301
14	271	541	424	413	400	383	378	361	324	353	319	298
15	274	459	424	414	399	384	371	360	322	349	317	297
16	273	431	427	416	399	384	372	362	320	351	314	295
17	e22000	424	425	417	398	382	371	363	322	356	308	296
18	e13000	424	426	415	396	384	370	382	322	355	310	292
19	e4200	426	426	415	395	386	367	361	326	351	309	294
20	1400	426	428	415	394	383	368	361	366	349	307	293
21	888	426	425	415	391	383	368	359	540	350	303	291
22	847	424	418	415	395	386	368	357	362	350	305	290
23	783	424	419	414	390	383	367	358	342	348	306	291
24	725	427	419	413	390	385	365	357	342	352	307	289
25	609	429	420	413	390	384	370	355	342	351	309	289
26	554	429	420	413	391	380	372	358	346	345	310	288
27	487	429	420	413	390	395	364	353	346	344	310	287
28	e442	429	419	411	389	406	367	350	345	344	307	286
29	e438	429	418	412	---	388	367	356	345	342	312	286
30	e438	429	419	411	---	385	365	353	344	340	313	286
31	e433	---	419	410	---	385	---	350	---	342	308	---
TOTAL	51522	13018	13162	12865	11172	11992	11200	11189	10268	10950	9843	8917
MEAN	1662	434	425	415	399	387	373	361	342	353	318	297
MAX	22000	541	433	421	411	406	384	382	540	446	339	312
MIN	257	424	418	410	389	380	364	350	317	340	303	286
AC-FT	102200	25820	26110	25520	22160	23790	22220	22190	20370	21720	19520	17690

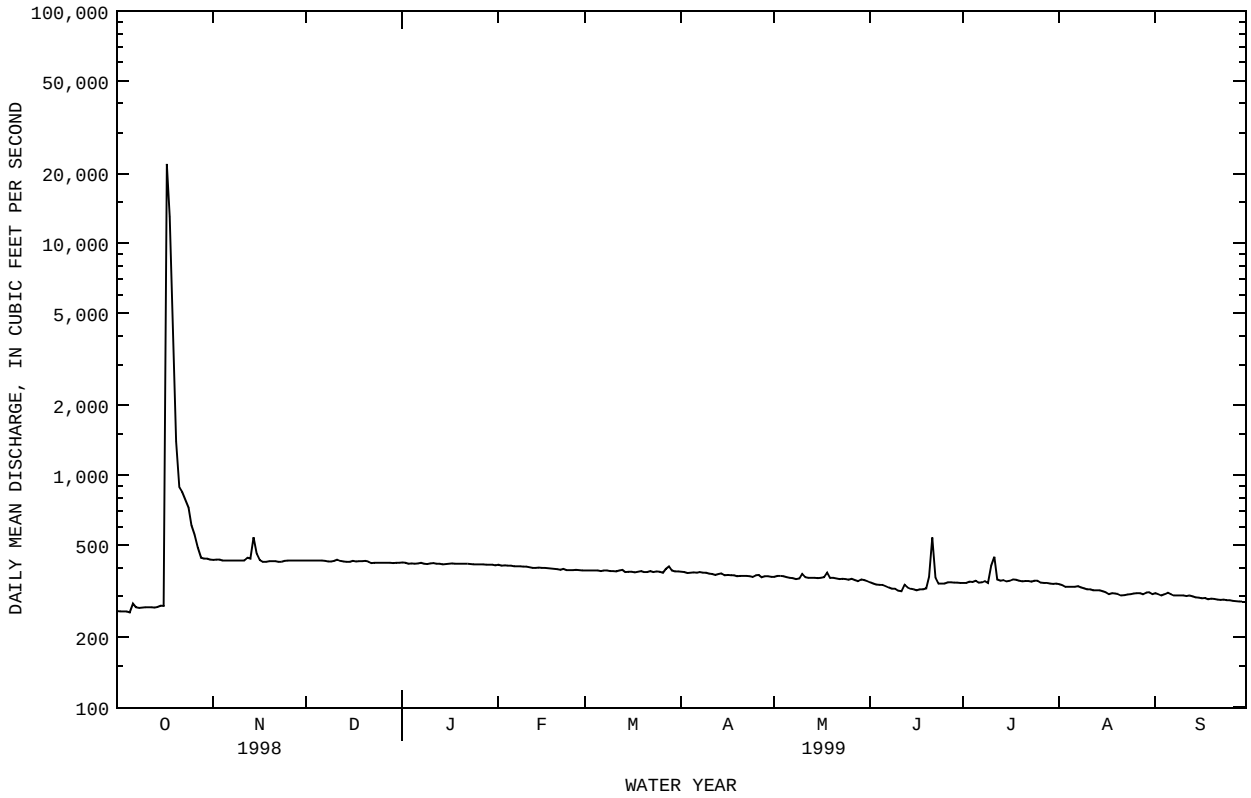
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1999z, BY WATER YEAR (WY)

MEAN	342	312	326	327	331	322	320	330	313	282	264	268
MAX	1662	486	437	443	527	536	531	547	520	466	466	428
(WY)	1999	1975	1992	1977	1992	1992	1977	1975	1987	1992	1992	1992
MIN	100	144	166	174	175	199	146	101	78.5	35.4	36.4	43.7
(WY)	1990	1990	1990	1990	1990	1990	1984	1984	1984	1984	1984	1984

08169000 COMAL RIVER AT NEW BRAUNFELS, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1974 - 1999z	
ANNUAL TOTAL	152247		176098			
ANNUAL MEAN	417		482		311	
HIGHEST ANNUAL MEAN					482	1999
LOWEST ANNUAL MEAN					145	1984
HIGHEST DAILY MEAN	e22000	Oct 17	e22000	Oct 17	e22000	Oct 17 1998
LOWEST DAILY MEAN	168	Aug 4	257	Oct 5	26	Jul 18 1984
ANNUAL SEVEN-DAY MINIMUM	175	Jul 30	263	Oct 1	28	Jul 18 1984
INSTANTANEOUS PEAK FLOW			c73500	Oct 17	c73500	Oct 17 1998
INSTANTANEOUS PEAK STAGE			a39.28	Oct 17	a39.28	Oct 17 1998
ANNUAL RUNOFF (AC-FT)	302000		349300		225600	
10 PERCENT EXCEEDS	429		429		420	
50 PERCENT EXCEEDS	310		375		308	
90 PERCENT EXCEEDS	199		303		186	

e Estimated
z Period of regulated streamflow.
c From rating curve extended above indirect measurements of 60,800 ft^3/s and 55,800 ft^3/s.
a From floodmark.



08170000 SAN MARCOS SPRINGS AT SAN MARCOS, TX

LOCATION.--Lat 29°53'20", long 97°56'02", Hays County, Hydrologic Unit 12100203, on left bank at downstream side of bridge on Aquarena Springs Drive (Loop 82), 500 ft downstream from Spring Lake, and 4.2 mi upstream from Blanco River.

DRAINAGE AREA.--Not applicable. This is a springflow station.

PERIOD OF RECORD.--May 1956 to current year. May 1956 to Sep 1988, at site 0.7 mi downstream from bridge on Interstate Highway 35 and 2.1 mi upstream from Blanco River. Oct 1988 to Sep 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.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 557.67 ft above sea level. May 1956 to Sep 1988, water-stage recorder 0.7 mi downstream from Interstate Highway 35 and 2.1 mi upstream from Blanco River, datum 536.82 ft above sea level. Oct 1988 to Sep 1994, water-stage recorder at ground-water well No. LR-67-09-110, 0.2 mi southwest of intersection of FM 2439 and McCarty Lane and 3.7 mi south of San Marcos, datum 678.50 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, Oct 17-25, which are fair. Springflow is equal to river flow (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. The springflow for all days with springflow separations and all days in which the river flow was estimated, are flagged 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily spring discharge, 451 ft^3/s Mar 12, 1992; minimum daily, 46 ft^3/s Aug 15, 16, 1956.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	208	e382	366	335	294	254	211	182	177	188	163	133
2	209	381	368	329	292	250	210	181	178	187	161	133
3	209	378	369	326	292	249	210	182	178	e184	158	134
4	210	375	369	325	293	247	208	184	178	182	158	134
5	210	376	369	325	288	246	207	183	179	183	158	132
6	e211	371	369	324	288	242	205	181	178	185	156	131
7	213	374	366	323	288	239	204	179	177	183	156	129
8	213	371	367	322	286	239	204	178	176	182	153	131
9	213	372	364	320	285	239	202	176	176	182	152	133
10	213	369	367	e319	285	236	200	e176	178	e182	152	133
11	213	367	371	e317	281	234	198	175	177	182	151	132
12	213	369	365	e315	278	233	195	177	177	182	150	132
13	215	368	364	314	277	231	194	178	174	182	148	130
14	215	e372	361	312	276	230	195	177	174	181	148	130
15	215	376	360	313	275	229	193	179	176	181	147	e128
16	216	375	359	312	272	228	190	178	176	179	146	126
17	e241	373	356	311	271	226	188	180	175	179	147	126
18	e255	371	357	308	270	227	189	180	176	178	146	127
19	e270	372	353	307	269	224	188	179	175	176	144	127
20	e286	373	351	307	267	222	188	181	e179	175	142	125
21	e303	374	351	306	262	220	186	181	e182	177	143	125
22	e321	372	345	305	262	218	186	182	186	176	143	125
23	e334	368	345	301	262	216	186	182	188	176	141	127
24	e356	370	342	299	260	213	186	180	190	174	139	126
25	e379	369	342	297	259	212	190	180	e192	173	139	126
26	403	368	340	296	258	212	e185	180	194	170	138	126
27	401	369	339	301	258	e212	185	181	191	168	137	125
28	e397	370	337	301	256	e211	185	e180	190	167	138	127
29	e396	370	334	300	---	211	183	180	190	169	e136	127
30	388	366	334	299	---	210	183	180	189	168	134	125
31	384	---	331	296	---	211	---	179	---	e165	133	---
TOTAL	8510	11161	11011	9665	7704	7071	5834	5571	5426	5516	4557	3865
MEAN	275	372	355	312	275	228	194	180	181	178	147	129
MAX	403	382	371	335	294	254	211	184	194	188	163	134
MIN	208	366	331	296	256	210	183	175	174	165	133	125
AC-FT	16880	22140	21840	19170	15280	14030	11570	11050	10760	10940	9040	7670

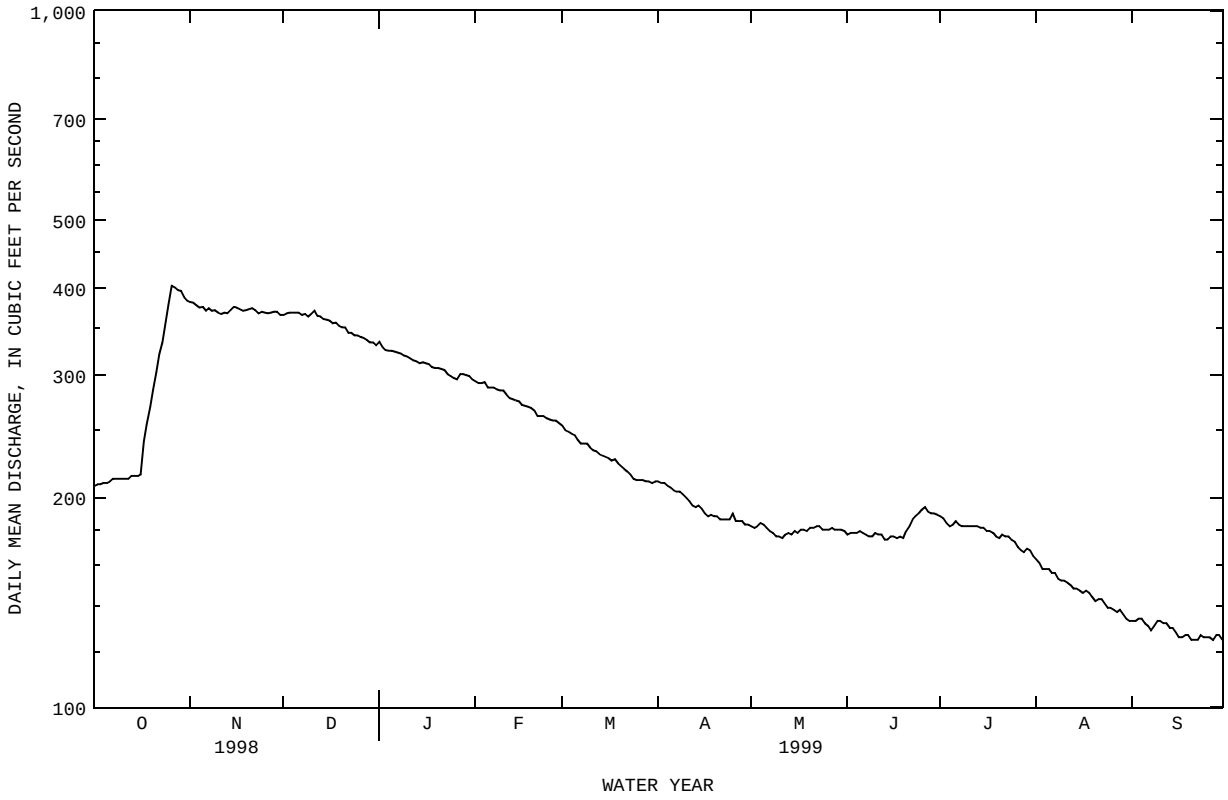
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1999, BY WATER YEAR (WY)

MEAN	156	160	164	166	169	171	170	181	189	179	163	155
MAX	275	372	355	382	418	445	427	407	415	381	315	269
(WY)	1999	1999	1999	1992	1992	1992	1992	1992	1992	1992	1992	1987
MIN	64.6	70.3	72.0	74.3	72.4	89.3	98.1	99.3	63.6	54.5	53.5	59.1
(WY)	1957	1957	1957	1957	1957	1964	1964	1984	1956	1956	1956	1956

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1956 - 1999	
ANNUAL TOTAL	79482		85891			
ANNUAL MEAN	218		235		170	
HIGHEST ANNUAL MEAN					331	1992
LOWEST ANNUAL MEAN					92.0	1964
HIGHEST DAILY MEAN	403	Oct 26	403	Oct 26	451	Mar 12 1992
LOWEST DAILY MEAN	143	Aug 17	125	Sep 20	46	Aug 15 1956
ANNUAL SEVEN-DAY MINIMUM	145	Aug 12	126	Sep 20	50	Aug 10 1956
ANNUAL RUNOFF (AC-FT)	157700		170400		122900	
10 PERCENT EXCEEDS	369		369		244	
50 PERCENT EXCEEDS	187		209		158	
90 PERCENT EXCEEDS	155		139		101	

e Estimated

08170000 SAN MARCOS SPRINGS AT SAN MARCOS, TX--Continued



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 mi^2 of contributing surface drainage, however, most of the time flow is solely from San Marcos Springs.

PERIOD OF RECORD.--Jul 1915 to Sep 1921 (partial-record site), May to Sep 1956, Oct 1994 to current year. Periodic measurements were made outside period of record since Nov 14, 1894, and are 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 sea level. Jul 1915 to Jan 1916, nonrecording gage at site 0.5 mi upstream from Interstate Highway 35, and Mar 1916 to Sep 1921, water-stage recorder about 0.7 mi downstream from Interstate Highway 35; datum relations unknown. May to Sep 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 sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges Oct 17-21, which are poor. No known regulation. Entire flow of river is from San Marcos Springs (station 08170000) 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,630 ft^3/s, Oct 17 (gage height, 9.34 ft); minimum discharge, 118 ft^3/s, Sep 16 (gage height, 4.72 ft).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	208	396	366	335	294	254	211	182	177	188	163	133
2	209	381	368	329	292	250	210	181	178	187	161	133
3	209	378	369	326	292	249	210	182	178	186	158	134
4	210	375	369	325	293	247	208	184	178	182	158	134
5	210	376	369	325	288	246	207	183	179	183	158	132
6	236	371	369	324	288	242	205	181	178	185	156	131
7	213	374	366	323	288	239	204	179	177	183	156	129
8	213	371	367	322	286	239	204	178	176	182	153	131
9	213	372	364	320	285	239	202	176	176	182	152	133
10	213	369	367	e319	285	236	200	180	178	191	152	133
11	213	367	371	e317	281	234	198	175	177	182	151	132
12	213	369	365	e315	278	233	195	177	177	182	150	132
13	215	368	364	314	277	231	194	178	174	182	148	130
14	215	385	361	312	276	230	195	177	174	181	148	130
15	215	376	360	313	275	229	193	179	176	181	147	130
16	216	375	359	312	272	228	190	178	176	179	146	126
17	e6200	373	356	311	271	226	188	180	175	179	147	126
18	e4700	371	357	308	270	227	189	180	176	178	146	127
19	e1650	372	353	307	269	224	188	179	175	176	144	127
20	e1040	373	351	307	267	222	188	181	186	175	142	125
21	e820	374	351	306	262	220	186	181	211	177	143	125
22	713	372	345	305	262	218	186	182	186	176	143	125
23	659	368	345	301	262	216	186	182	188	176	141	127
24	595	370	342	299	260	213	186	180	190	174	139	126
25	424	369	342	297	259	212	190	180	206	173	139	126
26	403	368	340	296	258	212	191	180	194	170	138	126
27	401	369	339	301	258	217	185	181	191	168	137	125
28	405	370	337	301	256	216	185	188	190	167	138	127
29	397	370	334	300	---	211	183	180	190	169	137	127
30	388	366	334	299	---	210	183	180	189	168	134	125
31	384	---	331	296	---	211	---	179	---	167	133	---
TOTAL	22600	11188	11011	9665	7704	7081	5840	5583	5476	5529	4558	3867
MEAN	729	373	355	312	275	228	195	180	183	178	147	129
MAX	6200	396	371	335	294	254	211	188	211	191	163	134
MIN	208	366	331	296	256	210	183	175	174	167	133	125
AC-FT	44830	22190	21840	19170	15280	14050	11580	11070	10860	10970	9040	7670

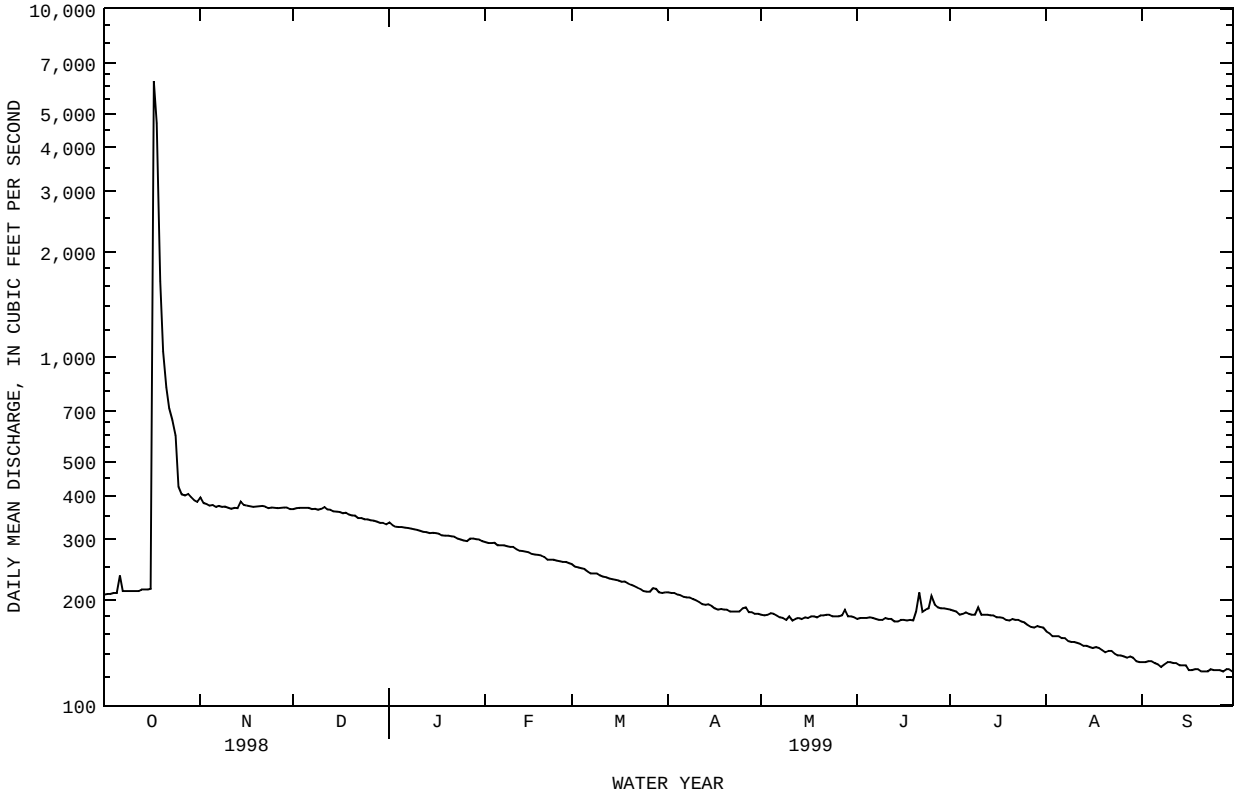
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

MEAN	262	187	179	171	162	163	162	159	192	183	165	163
MAX	729	373	355	312	275	228	206	183	308	307	267	227
(WY)	1999	1999	1999	1999	1999	1999	1998	1997	1997	1997	1997	1997
MIN	107	93.1	91.5	99.0	98.2	108	101	99.6	94.4	84.4	84.2	109
(WY)	1997	1997	1997	1997	1997	1996	1996	1996	1996	1996	1996	1996

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1995 - 1999	
ANNUAL TOTAL	93945		100102			
ANNUAL MEAN	257		274		179	
HIGHEST ANNUAL MEAN					274	1999
LOWEST ANNUAL MEAN					110	1996
HIGHEST DAILY MEAN	e6200	Oct 17	e6200	Oct 17	e6200	Oct 17 1998
LOWEST DAILY MEAN	143	Aug 17	125	Sep 20	76	Aug 15 1996
ANNUAL SEVEN-DAY MINIMUM	146	Aug 12	126	Sep 20	77	Aug 15 1996
INSTANTANEOUS PEAK FLOW			i21500	Oct 17	i21500	Oct 17 1998
INSTANTANEOUS PEAK STAGE			a21.29	Oct 17	a21.29	Oct 17 1998
INSTANTANEOUS LOW FLOW			118	Sep 16	71	Nov 18 1996
ANNUAL RUNOFF (AC-FT)	186300		198600		129700	
10 PERCENT EXCEEDS	370		370		276	
50 PERCENT EXCEEDS	189		210		162	
90 PERCENT EXCEEDS	155		139		98	

e Estimated
a From floodmark.
i From indirect measurement of peak flow.

08170500 SAN MARCOS RIVER AT SAN MARCOS, TX--Continued



08171000 BLANCO RIVER AT WIMBERLEY, TX

LOCATION.--Lat 29°59'39", long 98°05'19", Hays County, Hydrologic Unit 12100203, on left bank at downstream side of highway, near left end of bridge on Ranch Road 12, 0.3 mi southeast of Wimberley, 2,200 ft downstream from Cypress Creek, and at mile 29.0.

DRAINAGE AREA.--355 mi^2.

PERIOD OF RECORD.--Aug 1924 to Sep 1926, Jun 1928 to current year.
Water-quality records.--Chemical data: Apr 1962 to Sep 1979, Feb 1988 to Sep 1993, Apr 1996 to Apr 1998. Biochemical data: Jan 1974 to Sep 1979, Feb 1988 to Sep 1993, Apr 1996 to Apr 1998. Pesticide data: Jan 1974 to Sep 1979, Feb 1988 to Sep 1993, Apr 1996 to Apr 1998. Sediment data: Nov 1965 to Apr 1966, Apr 1996 to Apr 1998. Water temperature: Dec 1976 to Sep 1978.

REVISED RECORDS.--WSP 1562: 1929, 1930-31(M), 1935-36(M), 1938(M), 1941-42(M), 1947(M), 1949(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 797.23 ft above sea level. Aug 6, 1924 to Sep 30, 1926, nonrecording gage at site 1,030 ft upstream at datum 5.00 ft higher. Recording gage from Jun 6, 1928 to Jun 12, 1975, at site 1,000 ft upstream at datum 5.00 ft higher. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are many small diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jul 1869 reached a stage of 25 ft, from information by local residents. Maximum stage since at least 1869, that of May 28, 1929.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 17	1415	88,500	28.05	Nov 15	0115	2,190	6.88
Nov 1	1430	4,450	8.74				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	1830	557	191	99	73	80	63	59	56	33	20
2	67	928	536	185	97	76	80	63	58	54	32	21
3	66	640	520	173	95	79	79	65	56	53	31	21
4	64	554	505	165	90	80	78	64	54	55	31	22
5	63	e590	479	161	86	79	77	62	54	51	31	21
6	115	e580	460	158	91	78	77	61	53	48	29	21
7	96	e580	440	156	90	76	77	60	52	48	28	22
8	98	e580	412	155	91	75	72	59	51	47	27	21
9	90	e560	396	149	92	75	72	60	51	46	26	21
10	85	537	410	144	91	75	72	79	50	46	26	21
11	82	484	457	140	91	75	69	64	50	48	25	21
12	79	488	434	141	88	77	68	63	48	49	25	21
13	77	621	392	140	86	78	68	62	50	48	24	20
14	75	1030	366	133	84	75	69	61	52	47	25	21
15	74	1470	348	128	84	75	66	61	50	46	25	20
16	73	1120	335	127	85	75	66	59	49	45	24	20
17	20800	1160	323	126	84	74	66	59	48	46	23	20
18	6770	1200	313	124	83	80	65	69	46	45	24	19
19	2680	1130	307	120	82	88	65	62	45	46	24	19
20	1990	1080	294	118	82	79	64	62	67	45	23	19
21	1450	990	281	118	79	81	65	62	127	45	23	18
22	1100	930	266	118	78	79	65	61	107	47	22	18
23	884	873	254	113	79	78	64	60	76	43	24	17
24	737	816	249	109	77	76	63	58	67	42	24	18
25	636	773	242	105	75	75	67	58	65	41	23	20
26	559	727	238	104	75	73	69	57	62	39	22	21
27	500	689	232	104	74	77	66	58	61	38	21	20
28	458	658	223	104	73	86	64	60	60	37	21	19
29	419	627	212	104	---	79	64	62	59	35	21	20
30	376	599	204	101	---	80	63	59	57	35	21	18
31	344	---	196	101	---	81	---	61	---	34	20	---
TOTAL	40975	24844	10881	4115	2381	2407	2080	1914	1784	1405	778	600
MEAN	1322	828	351	133	85.0	77.6	69.3	61.7	59.5	45.3	25.1	20.0
MAX	20800	1830	557	191	99	88	80	79	127	56	33	22
MIN	63	484	196	101	73	73	63	57	45	34	20	17
AC-FT	81270	49280	21580	8160	4720	4770	4130	3800	3540	2790	1540	1190

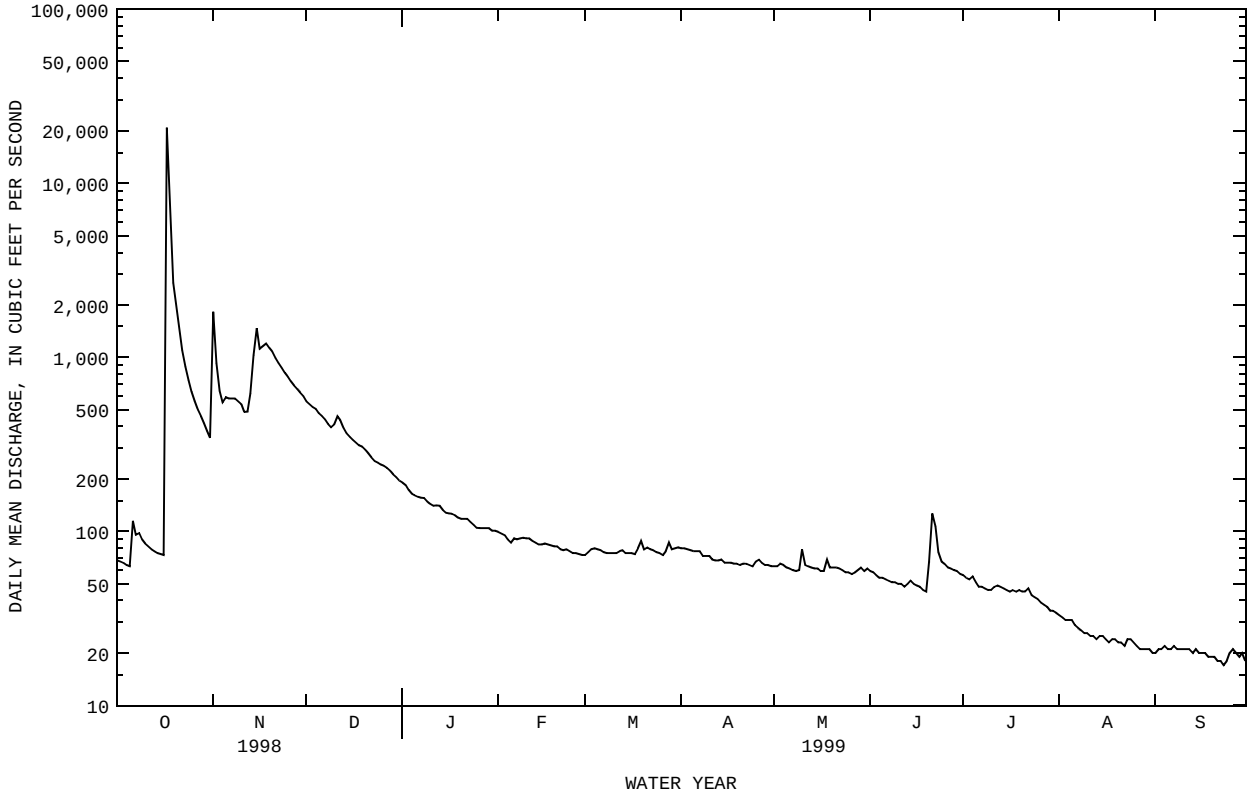
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1999h, BY WATER YEAR (WY)

MEAN	117	91.9	119	123	163	154	180	219	233	103	49.8	87.9
MAX	1322	828	1364	1134	1401	977	953	1470	2308	935	201	1413
(WY)	1999	1999	1992	1968	1992	1992	1957	1929	1997	1973	1973	1952
MIN	6.24	7.41	7.87	6.66	8.13	5.93	5.19	12.5	3.44	1.70	2.89	6.93
(WY)	1941	1956	1956	1956	1956	1956	1956	1956	1956	1956	1956	1928

08171000 BLANCO RIVER AT WIMBERLEY, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1924 - 1999h	
ANNUAL TOTAL	130259		94164			
ANNUAL MEAN	357		258		136	
HIGHEST ANNUAL MEAN					566	1992
LOWEST ANNUAL MEAN					6.45	1956
HIGHEST DAILY MEAN	20800	Oct 17	20800	Oct 17	36900	Sep 11 1952
LOWEST DAILY MEAN	41	Aug 12	17	Sep 23	.70	Jul 17 1956
ANNUAL SEVEN-DAY MINIMUM	42	Aug 10	18	Sep 18	.79	Aug 12 1956
INSTANTANEOUS PEAK FLOW			i88500	Oct 17	i113000	May 28 1929
INSTANTANEOUS PEAK STAGE			a28.05	Oct 17	a33.30	May 28 1929
ANNUAL RUNOFF (AC-FT)	258400		186800		98540	
10 PERCENT EXCEEDS	642		558		278	
50 PERCENT EXCEEDS	125		74		53	
90 PERCENT EXCEEDS	56		22		12	

e Estimated
h See PERIOD OF RECORD paragraph.
i From indirect measurement of peak flow.
a From floodmark.



08171300 BLANCO RIVER NEAR KYLE, TX

LOCATION.--Lat 29°58'45", long 97°54'35", Hays County, Hydrologic Unit 12100203, on left bank 800 ft downstream from Tarbutton Ranch House (Hatchett Ranch), 2.2 mi southwest of Kyle, 4.2 mi downstream from Halifax Creek, and 6.3 mi upstream from bridge on U.S. Highway 81.

DRAINAGE AREA.--412 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1956 to current year.

REVISED RECORDS.--WSP 1923: 1957-58, 1960(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 620.12 ft above sea level (levels by U.S. Army Corps of Engineers).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. 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 the station at Wimberley.

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 ft^3/s). Flood of Sep 11, 1952, reached a stage of 38.0 ft (discharge, 115,000 ft^3/s).

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 17	1330	105,000	a35.82	Nov 1	unknown	unknown	unknown

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	e2190	e630	e190	e88	e60	67	40	31	30	8.5	.27
2	40	e1120	e600	e180	e86	e64	67	41	29	28	7.7	.28
3	39	e760	e580	e170	e84	e67	65	44	28	27	7.5	.42
4	39	e660	e560	e160	e78	e68	62	44	26	26	7.2	.94
5	37	e700	e530	e160	e74	e67	62	40	25	34	6.4	.62
6	127	e690	e510	e150	e79	e66	58	37	24	27	5.9	.32
7	98	e680	e490	e150	e78	e64	59	37	24	25	5.1	.13
8	80	e680	e450	e150	e79	e63	60	37	23	24	4.5	.06
9	76	e660	e430	e140	e81	e63	56	37	22	22	4.4	.03
10	67	e630	e450	e140	e80	e63	54	61	22	25	3.7	.01
11	62	e560	e500	e130	e80	e63	52	54	21	27	2.7	.00
12	59	e570	e470	e130	e76	63	49	44	22	32	2.3	.00
13	56	e720	e420	e130	e74	69	50	42	24	25	2.1	.00
14	53	e1200	e400	e120	e72	59	52	40	23	22	2.1	.00
15	51	e1690	e370	e120	e72	59	47	39	24	21	1.9	.00
16	50	e1300	e360	e120	e73	61	46	38	37	20	1.9	.00
17	e26000	e1340	e340	e120	e72	60	47	37	21	20	1.9	.00
18	e8500	e1380	e330	e120	e71	63	47	45	19	23	2.0	.00
19	e3110	e1300	e320	e110	e70	120	47	41	18	20	2.0	.00
20	e2680	e1240	e310	e110	e70	71	46	37	27	22	1.7	.00
21	e1960	e1140	e300	e110	e67	69	45	36	93	23	1.2	.00
22	e1480	e1070	e280	e110	e65	68	46	36	152	23	.88	.00
23	e1180	e1000	e260	e100	e67	66	46	35	76	23	1.1	.00
24	e980	e930	e260	e98	e64	65	45	35	57	19	2.0	.00
25	e830	e880	e250	e94	e62	63	47	36	50	17	3.5	.00
26	e720	e830	e240	e93	e62	61	52	32	46	16	3.5	.00
27	e640	e780	e240	e93	e61	60	48	30	40	14	2.7	.00
28	e580	e750	e230	e93	e60	83	43	31	37	13	1.6	.00
29	e520	e710	e210	e93	---	67	42	35	34	11	.88	.00
30	e460	e680	e200	e90	---	64	41	33	32	10	.77	.00
31	e420	---	e200	e90	---	66	---	31	---	9.4	.44	---
TOTAL	51039	28840	11720	3864	2045	2065	1548	1205	1107	678.4	100.07	3.08
MEAN	1646	961	378	125	73.0	66.6	51.6	38.9	36.9	21.9	3.23	.10
MAX	26000	2190	630	190	88	120	67	61	152	34	8.5	.94
MIN	37	560	200	90	60	59	41	30	18	9.4	.44	.00
AC-FT	101200	57200	23250	7660	4060	4100	3070	2390	2200	1350	198	6.1
CFSM	4.00	2.33	.92	.30	.18	.16	.13	.09	.09	.05	.01	.00
IN.	4.61	2.60	1.06	.35	.18	.19	.14	.11	.10	.06	.01	.00

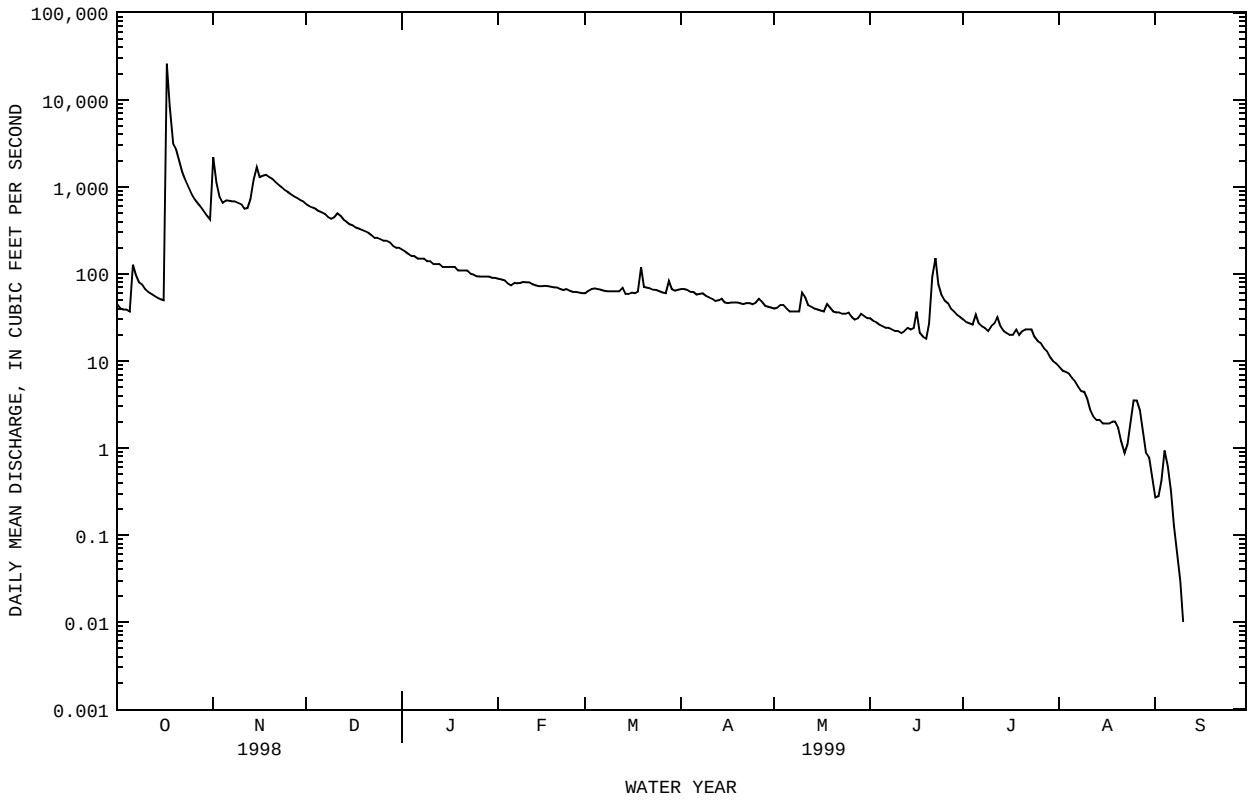
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1999, BY WATER YEAR (WY)

MEAN	158	119	157	153	202	177	190	244	320	108	43.8	53.9
MAX	1646	961	1775	1319	1511	1078	906	1148	2459	828	196	348
(WY)	1999	1999	1992	1968	1992	1992	1977	1958	1997	1973	1973	1986
MIN	.000	.000	.000	.000	.000	10.0	9.04	1.96	.000	.000	.000	.000
(WY)	1964	1964	1964	1957	1990	1967	1996	1964	1956	1956	1956	1956

08171300 BLANCO RIVER NEAR KYLE, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1956 - 1999	
ANNUAL TOTAL	144059		104214.55			
ANNUAL MEAN	395		286		161	
HIGHEST ANNUAL MEAN					625	1992
LOWEST ANNUAL MEAN					4.65	1964
HIGHEST DAILY MEAN	26000	Oct 17	26000	Oct 17	26000	Oct 17 1998
LOWEST DAILY MEAN	12	Aug 16	.00	Sep 11	.00	Jun 1 1956
ANNUAL SEVEN-DAY MINIMUM	15	Aug 11	.00	Sep 11	.00	Jun 1 1956
INSTANTANEOUS PEAK FLOW			i105000	Oct 17	i105000	Oct 17 1998
INSTANTANEOUS PEAK STAGE			a35.82	Oct 17	a36.30	May 2 1958
ANNUAL RUNOFF (AC-FT)	285700		206700		116700	
ANNUAL RUNOFF (CFSM)	.96		.69		.39	
ANNUAL RUNOFF (INCHES)	13.01		9.41		5.31	
10 PERCENT EXCEEDS	721		660		332	
50 PERCENT EXCEEDS	127		59		52	
90 PERCENT EXCEEDS	29		1.4		3.2	

e Estimated
i From indirect measurement of peak flow.
a From floodmark.



08171300 BLANCO RIVER NEAR KYLE, TX--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--Mar 1987 to current year. Unpublished records Mar 1987 to Sep 1998.

INSTRUMENTATION.--Recording tipping bucket rain gage at site.

REMARKS.--Records good.

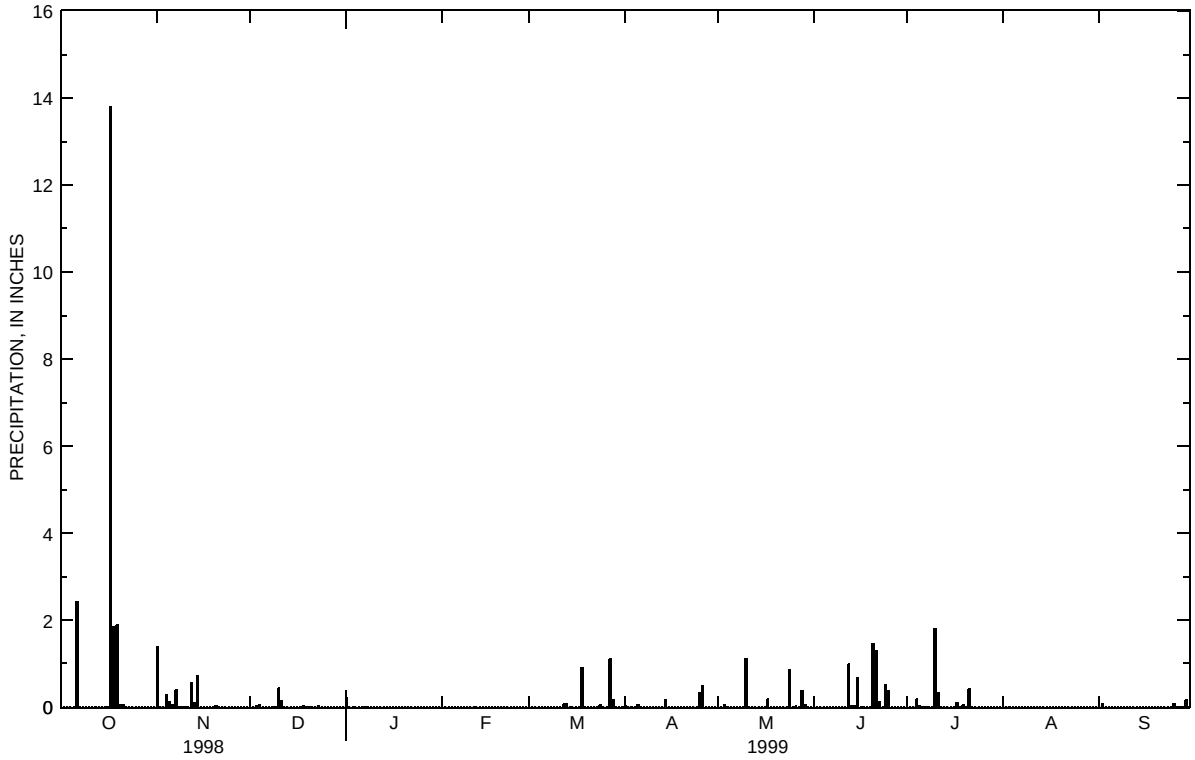
EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 13.80 in., Oct 17.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	e1.39	.00	.21	---	---	.02	.00	.00	.00	.00	.00
2	.00	e.00	.00	.00	---	---	.00	.00	.00	.00	.00	.06
3	.00	e.00	.02	.00	---	---	.01	.05	.00	.00	.01	.00
4	.00	.29	.05	.00	---	---	.00	.01	.00	.18	.00	.00
5	.00	.13	.00	.00	---	---	.05	.00	.00	.02	.00	.00
6	2.42	.05	.00	.00	---	---	.00	.00	.00	.01	.00	.00
7	.00	.39	.00	e.01	---	---	.00	.00	.00	.01	.00	.00
8	.00	.00	.00	---	---	---	.00	.00	.00	.00	.00	.00
9	.00	.01	.01	---	---	---	.00	.00	.00	.00	.00	.00
10	.00	.01	.43	---	---	---	.00	1.11	.00	1.79	.00	.00
11	.00	.00	.15	---	---	---	.00	.00	.00	.33	.00	.00
12	.01	.56	.00	---	---	e.06	.00	.00	.98	.00	.00	.00
13	.00	.11	.00	---	---	.09	.00	.00	.03	.00	.00	.00
14	.00	.72	.00	---	---	.00	.17	.00	.02	.00	.00	.00
15	.00	.00	.00	---	---	.00	.00	.00	.68	.00	.00	.00
16	.01	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
17	e13.80	.00	.00	---	---	.00	.00	.18	.01	.11	.00	.00
18	1.85	.00	.02	---	---	.91	.00	.00	.00	.01	.00	.00
19	1.88	.00	.00	---	---	.00	.00	.00	.00	.04	.00	.00
20	.04	.03	.01	---	---	.00	.00	.00	1.46	.01	.00	.00
21	.04	.00	.00	---	---	.00	.00	.00	1.29	.41	.00	.00
22	.00	.00	.00	---	---	.00	.00	.00	.13	.00	.00	.00
23	.00	.00	.03	---	---	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	---	---	.04	.00	.86	.52	.00	.00	.00
25	.00	.00	.00	---	---	.00	.32	.00	.37	.00	.00	.09
26	.00	.00	.00	---	---	.00	.48	.02	.00	.00	.00	.00
27	.00	.00	.00	---	---	1.10	.00	.00	.00	.00	.00	.00
28	e.00	.00	.00	---	---	.16	.00	.37	.00	.00	.00	.00
29	e.00	.00	.00	---	---	.00	.00	.05	.00	.00	.00	.16
30	e.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
31	e.00	---	.00	---	---	.00	---	.00	---	.00	.00	---
TOTAL	20.05	3.69	0.72	---	---	---	1.05	2.65	5.49	2.92	0.01	0.31
MAX	13.80	1.39	.43	---	---	---	.48	1.11	1.46	1.79	.01	.16
MIN	.00	.00	.00	---	---	---	.00	.00	.00	.00	.00	.00

e Estimated

08171300 BLANCO RIVER NEAR KYLE, TX--Continued



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 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 958: 1940. WSP 1312: 1940(M), 1945(M), 1947(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 322.05 ft above sea level. Prior to Oct 21, 1988, at site 390 ft downstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1984, at least 10% of contributing drainage area has been regulated by upstream reservoirs. Flow is affected at times by discharge from the flood-detention pools of 18 floodwater-retarding structures with a combined detention capacity of 57,375 acre-ft. These structures control runoff from 105 mi^2 in the Town, Sink and York Creeks drainage basins.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--44 years (water years 1940-83), 370 ft^3/s (268,100 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1940-83).--Maximum discharge, 57,000 ft^3/s Sep 12, 1952 (gage height, 34.95 ft); minimum daily, 43 ft^3/s Aug 12, 1951.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	283	1590	1020	592	405	336	307	254	261	255	172	131
2	274	3030	981	671	401	334	306	255	239	241	170	130
3	270	2210	957	607	398	331	305	257	224	233	171	132
4	264	1710	940	574	395	329	302	258	214	228	169	131
5	257	1590	927	558	392	329	298	257	208	251	166	132
6	1460	1630	905	549	386	329	295	251	206	242	164	131
7	1020	1550	879	547	383	325	293	245	204	238	161	131
8	499	1530	849	543	381	323	293	242	201	232	161	129
9	388	1490	826	532	385	319	292	243	200	223	160	128
10	350	1420	803	524	384	319	287	270	197	215	158	127
11	326	1340	873	516	381	318	283	288	196	350	155	129
12	310	1250	927	511	376	321	280	266	193	269	154	127
13	299	1780	845	507	370	334	278	255	199	236	154	127
14	291	3190	798	497	367	321	279	248	200	222	150	126
15	284	3410	771	489	365	318	278	244	197	211	147	125
16	278	2640	753	485	363	312	273	242	196	203	144	123
17	5080	2020	744	481	364	313	271	243	197	199	143	123
18	90500	1770	736	474	360	312	269	278	196	200	145	122
19	19900	1630	725	470	356	326	269	257	192	196	145	122
20	14800	1520	714	467	352	347	270	244	199	194	143	122
21	6260	1460	701	462	350	329	267	239	365	196	140	119
22	4400	1370	686	457	349	315	266	236	1610	200	141	118
23	3680	1310	672	449	347	314	266	236	922	195	145	119
24	3270	1270	661	444	343	312	265	234	475	190	146	120
25	2900	1220	650	437	343	306	267	231	902	187	144	122
26	2580	1170	642	432	344	302	285	237	1140	185	140	124
27	2340	1130	633	428	343	305	296	244	388	182	137	122
28	2130	1100	625	424	339	366	271	376	325	179	137	121
29	1940	1070	616	422	---	345	263	439	299	176	136	123
30	1790	1050	606	419	---	321	257	363	275	174	136	126
31	1620	---	597	411	---	310	---	299	---	172	133	---
TOTAL	170043	50450	24062	15379	10322	10021	8431	8231	10820	6674	4667	3762
MEAN	5485	1682	776	496	369	323	281	266	361	215	151	125
MAX	90500	3410	1020	671	405	366	307	439	1610	350	172	132
MIN	257	1050	597	411	339	302	257	231	192	172	133	118
AC-FT	337300	100100	47730	30500	20470	19880	16720	16330	21460	13240	9260	7460

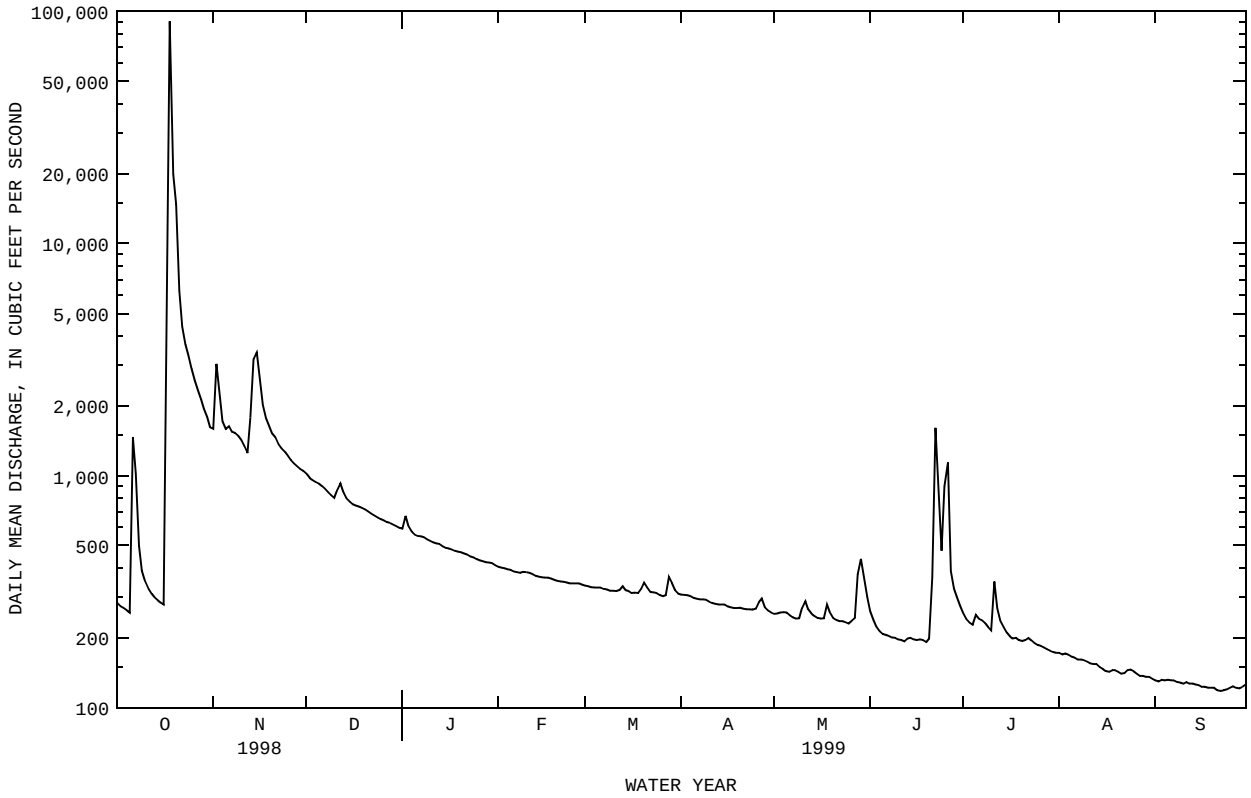
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1999, BY WATER YEAR (WY)

MEAN	562	354	569	449	555	490	414	497	952	345	217	234
MAX	5485	1682	3520	1948	3358	2438	1170	1519	4850	884	515	471
(WY)	1999	1999	1992	1992	1992	1992	1992	1992	1987	1997	1992	1986
MIN	80.7	90.4	87.1	91.3	95.8	114	103	84.5	83.7	68.4	63.7	64.4
(WY)	1990	1990	1990	1990	1990	1996	1996	1996	1984	1984	1984	1984

08172000 SAN MARCOS RIVER AT LULING, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1984 - 1999z	
ANNUAL TOTAL	366243		322862			
ANNUAL MEAN	1003		885		469	
HIGHEST ANNUAL MEAN					1482	1992
LOWEST ANNUAL MEAN					119	1984
HIGHEST DAILY MEAN	90500	Oct 18	90500	Oct 18	90500	Oct 18 1998
LOWEST DAILY MEAN	124	Aug 13	118	Sep 22	56	Sep 1 1984
ANNUAL SEVEN-DAY MINIMUM	132	Aug 10	120	Sep 18	59	Aug 26 1984
INSTANTANEOUS PEAK FLOW			i206000	Oct 18	i206000	Oct 18 1998
INSTANTANEOUS PEAK STAGE			a41.85	Oct 18	a41.85	Oct 18 1998
ANNUAL RUNOFF (AC-FT)	726400		640400		339800	
10 PERCENT EXCEEDS	1470		1390		786	
50 PERCENT EXCEEDS	411		307		234	
90 PERCENT EXCEEDS	165		140		98	

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



08172000 SAN MARCOS RIVER AT LULING, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Feb 1944 to Feb 1959, Sep 1961 to Apr 1966, Nov 1968 to Aug 24, 1999 (discontinued).
PESTICIDE DATA: Jun 1986 to May 25, 1999 (discontinued).
SEDIMENT DATA: Oct 1960 to Apr 1966.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
JAN											
26...	0950	433	575	7.7	17.5	9.5	98	260	35	76	18
MAR											
02...	0920	335	577	8.2	20.0	8.7	97	270	47	75	19
APR											
16...	0900	272	542	8.0	22.0	8.1	92	260	42	71	19
MAY											
25...	1445	231	520	7.7	27.0	5.7	72	220	25	58	17
JUL											
01...	1500	253	516	7.5	--	7.4	--	240	13	68	16
AUG											
24...	1600	147	500	7.4	--	7.2	--	230	23	61	18

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)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	2,4,5-T TOTAL (UG/L) (39740)
JAN											
26...	16	.4	11	1.4	230	31	26	.21	9.0	314	--
MAR											
02...	17	.5	12	1.7	220	29	26	.24	8.7	308	--
APR											
16...	18	.5	13	1.8	210	29	27	.22	9.3	303	--
MAY											
25...	16	.5	14	1.6	190	29	27	.22	7.8	271	<.010
JUL											
01...	17	.5	14	2.3	220	30	26	.24	12	306	--
AUG											
24...	17	.5	14	1.8	200	28	26	.21	12	286	--

DATE	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	2,4-DP TOTAL (UG/L) (82183)	ALDRIN, TOTAL (UG/L) (39330)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)
JAN											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
02...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
25...	<.010	<.010	<.010	<.010	<.010	<.100	<.010	<.010	<.010	<.010	<.010
JUL											
01...	--	--	--	--	--	--	--	--	--	--	--
AUG											
24...	--	--	--	--	--	--	--	--	--	--	--

08172000 SAN MARCOS RIVER AT LULING, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	TOX-APHENE, TOTAL (UG/L) (39400)
JAN											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
02...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
25...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<1.00
JUL											
01...	--	--	--	--	--	--	--	--	--	--	--
AUG											
24...	--	--	--	--	--	--	--	--	--	--	--

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 mi^2.

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 sea level. Apr 30, 1959 to Jul 25, 1968, at site 548 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Since water year 1963, at least 10% of contributing drainage area has been regulated by upstream reservoirs. No known diversions above station. Flow is affected at times by discharge from the flood-detention pools of 17 floodwater-retarding structures with a combined capacity of 24,850 acre-ft. These structures control runoff from 67.8 mi^2 above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--3 years (water years 1960-62), 60.2 ft^3/s (43,610 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1960-62).--Maximum discharge, 26,600 ft^3/s Oct 29, 1960 (gage height, 20.62 ft); no flow for several days in each year.

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 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.76	1090	27	13	6.0	2.7	10	1.7	6.0	.96	.00	.00
2	.20	714	26	20	5.8	2.8	9.3	1.1	4.2	.40	.00	.00
3	.00	537	25	16	5.7	2.5	8.8	.85	2.7	.03	.00	.00
4	.00	464	25	13	5.4	2.6	8.1	.58	1.6	.10	.00	.00
5	.00	435	24	16	5.2	1.6	7.3	.50	.79	.02	.00	.00
6	258	404	23	18	5.3	1.7	6.5	.05	.25	1.3	.00	.00
7	120	369	20	18	5.6	1.8	5.8	.00	.00	1.8	.00	.00
8	59	331	16	18	5.5	1.9	5.1	.00	.00	1.6	.00	.00
9	34	282	14	17	5.4	2.2	4.5	.00	.00	1.1	.00	.00
10	20	235	19	17	5.4	2.1	4.1	.08	.00	.41	.00	.00
11	13	196	94	16	5.1	2.1	3.4	.35	.00	.09	.00	.00
12	9.3	181	77	16	4.1	2.0	2.7	1.9	.00	.00	.00	.00
13	7.1	532	47	16	3.8	3.5	2.1	3.0	.00	.00	.00	.00
14	5.7	611	38	15	3.7	3.5	1.9	2.4	.00	.00	.00	.00
15	4.2	665	32	14	3.6	3.0	1.8	1.8	.00	.00	.00	.00
16	3.0	346	28	12	3.6	2.7	2.4	1.2	.37	.00	.00	.00
17	8840	247	25	9.7	3.6	2.3	2.5	.78	1.0	.00	.00	.00
18	19400	194	23	9.0	3.6	2.0	2.4	2.1	.29	.00	.00	.00
19	5050	160	22	8.4	3.5	22	2.6	1.8	.00	.00	.00	.00
20	3900	132	20	8.4	3.2	19	2.5	1.0	.00	.00	.00	.00
21	1470	105	19	8.5	2.9	15	2.1	.41	39	.00	.00	.00
22	1110	73	17	8.5	3.0	11	1.9	.04	30	.00	.00	.00
23	1020	53	16	7.6	2.8	8.9	1.7	.00	28	.00	.00	.00
24	953	42	15	7.0	2.7	7.5	1.3	.00	12	.00	.00	.00
25	860	36	14	6.5	2.8	6.6	.96	100	9.4	.00	.00	.00
26	809	32	14	6.5	3.0	6.0	1.4	27	16	.00	.00	.00
27	787	28	14	6.5	3.2	5.7	2.9	14	7.7	.00	.00	.00
28	749	26	14	6.6	3.1	22	5.0	10	5.0	.00	.00	.00
29	660	24	17	6.8	---	17	3.6	8.5	2.9	.00	.00	.00
30	596	26	18	7.0	---	13	2.5	9.9	1.7	.00	.00	.00
31	557	---	15	6.4	---	11	---	8.3	---	.00	.00	---
TOTAL	47295.26	8570	798	368.4	116.6	207.7	117.16	199.34	168.90	7.81	0.00	0.00
MEAN	1526	286	25.7	11.9	4.16	6.70	3.91	6.43	5.63	.25	.000	.000
MAX	19400	1090	94	20	6.0	22	10	100	39	1.8	.00	.00
MIN	.00	24	14	6.4	2.7	1.6	.96	.00	.00	.00	.00	.00
AC-FT	93810	17000	1580	731	231	412	232	395	335	15	.00	.00

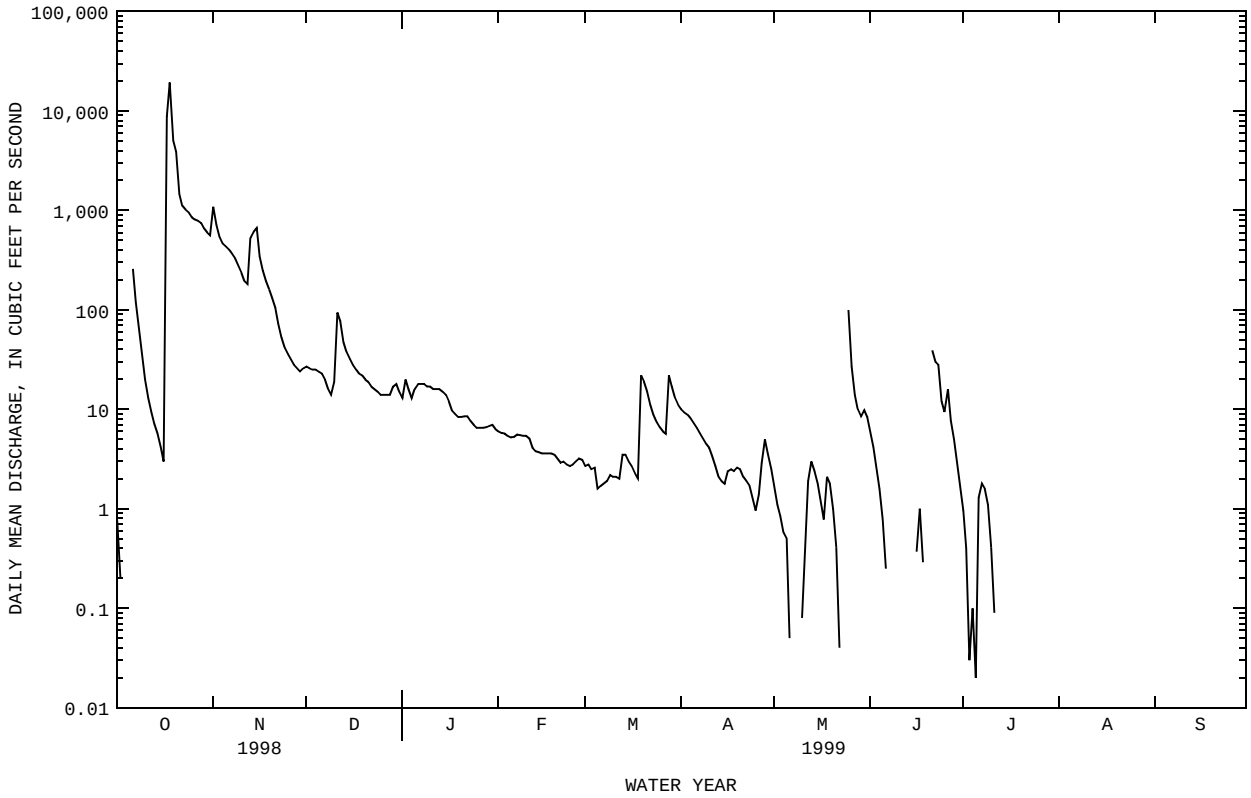
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999z, BY WATER YEAR (WY)

MEAN	65.5	48.0	55.3	44.2	67.1	38.5	42.0	110	105	11.5	3.51	8.47
MAX	1526	590	605	416	815	332	343	595	905	151	118	142
(WY)	1999	1986	1992	1968	1992	1992	1976	1975	1981	1985	1974	1974
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1964	1964	1964	1964	1989	1964	1967	1971	1963	1963	1963	1963

08172400 PLUM CREEK AT LOCKHART, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1963 - 1999z	
ANNUAL TOTAL	62621.81		57849.17			
ANNUAL MEAN	172		158		49.8	
HIGHEST ANNUAL MEAN					238	1992
LOWEST ANNUAL MEAN					.10	1978
HIGHEST DAILY MEAN	19400	Oct 18	19400	Oct 18	19400	Oct 18 1998
LOWEST DAILY MEAN	.00	May 7	.00	Oct 3	.00	Oct 11 1962
ANNUAL SEVEN-DAY MINIMUM	.00	May 7	.00	Jun 7	.00	Nov 9 1962
INSTANTANEOUS PEAK FLOW			c47200	Oct 18	c47200	Oct 18 1998
INSTANTANEOUS PEAK STAGE			a23.09	Oct 18	a23.09	Oct 18 1998
ANNUAL RUNOFF (AC-FT)	124200		114700		36080	
10 PERCENT EXCEEDS	221		125		63	
50 PERCENT EXCEEDS	3.8		3.2		.35	
90 PERCENT EXCEEDS	.00		.00		.00	

z Period of regulated streamflow.
c From rating curve extended above current meter discharge measurements of 12,900 ft^3/s and 21,300 ft^3/s.
a From floodmark.



08173900 GUADALUPE RIVER AT GONZALES, TX

LOCATION.--Lat 29°29'03", long 97°27'00", Gonzales County, Hydrologic Unit 12100202, in City Park on left bank 0.2 mi upstream from U.S. Highway 183 bridge, and 4.4 mi downstream from San Marcos River.

DRAINAGE AREA.--3,490 mi^2.

PERIOD OF RECORD.--Jul 1915 to Sep 1922, Records published in WSP's 408, 438, 458, 478, 528, and 548 later discredited and not to be used. Oct 1951 to Sep 1952, Discharge measurements only at site 0.2 mi downstream published in WSP 1312. Mar 1977 to Sep 1996, Peak stage only at site 1.2 mi upstream (Gonzales Hydro Station). Oct 1996 to to current year.
Water-quality data.--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 sea level. Jul 1915 to Sep 1922, 0.2 mi downstream, datum not known. Mar 1977 to Sep 1996, 1.2 mi upstream at Gonzales hydroelectric plant at National Weather Service datum. Gage moved to present site in City Park in 1996. Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1964, at least 10% of contributing drainage area has been regulated by Canyon Lake (station 08167700, normal storage 386,200 acre-ft) and a series of small power dams. 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, to National Weather Service datum.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	974	3180	4870	2450	1530	1240	1120	924	1030	1190	727	547
2	1060	3940	4820	2780	1490	1090	1140	862	965	1010	722	382
3	814	6040	4750	2640	1480	1120	1080	875	916	1130	758	476
4	894	4970	4760	2410	1510	1240	1080	915	836	1250	666	429
5	951	3870	4720	2170	1440	1130	1070	845	757	1180	738	481
6	1800	4740	4710	e2050	1450	1130	1070	653	987	1140	750	444
7	5730	5020	4670	e2030	1430	1130	1060	822	1050	1160	759	460
8	2490	5010	4610	e2050	1430	1130	1020	806	621	1060	709	428
9	1360	4970	4560	e2080	1410	1120	1010	886	593	1060	684	499
10	1190	4950	4600	e2100	1370	1110	1060	1040	757	1060	641	436
11	1060	5230	4820	e2020	1370	1110	1050	961	752	1060	644	457
12	966	5950	5250	e2000	1380	946	926	1250	823	1060	630	430
13	1080	7520	5090	1990	1400	1200	1130	805	1040	1060	639	430
14	1190	8400	4750	1940	1350	1150	1130	861	893	1110	610	415
15	981	9640	4620	1970	1360	1130	959	883	1070	1040	532	353
16	837	8030	4580	1910	1360	1060	1000	847	632	991	645	438
17	3020	5020	4530	1880	1330	1120	954	822	679	925	494	425
18	e170000	4160	4540	1820	1320	1100	1140	1160	769	1020	607	417
19	e188000	3700	4510	1920	1440	1130	977	1570	689	1030	524	341
20	e72400	3240	4490	1750	1400	1220	1010	1140	805	989	588	389
21	e53100	3020	4470	1860	1030	1210	933	1090	989	952	492	441
22	e22100	3190	4360	1980	1040	1110	876	963	2200	1050	560	388
23	11600	3290	3110	3160	1140	1090	904	851	2910	829	524	396
24	7290	3550	2830	2350	1180	1140	913	677	1890	932	751	418
25	6390	4800	2860	992	1180	1220	967	700	1870	865	497	375
26	5860	4990	2850	1090	1270	1060	1150	831	3790	827	523	442
27	5490	4970	2840	1130	1220	1050	1040	1960	2160	843	532	470
28	5430	4980	2830	1520	1190	1290	1020	1170	1410	776	514	401
29	4880	4930	2820	1440	---	1390	875	2590	1220	772	478	427
30	4700	4870	2780	1500	---	1330	936	1450	1260	675	490	382
31	3670	---	2580	1530	---	1130	---	889	---	751	538	---
TOTAL	587307	150170	128580	60512	37500	35626	30600	32098	36363	30797	18966	12817
MEAN	18950	5006	4148	1952	1339	1149	1020	1035	1212	993	612	427
MAX	188000	9640	5250	3160	1530	1390	1150	2590	3790	1250	759	547
MIN	814	3020	2580	992	1030	946	875	653	593	675	478	341
AC-FT	1165000	297900	255000	120000	74380	70660	60700	63670	72130	61090	37620	25420

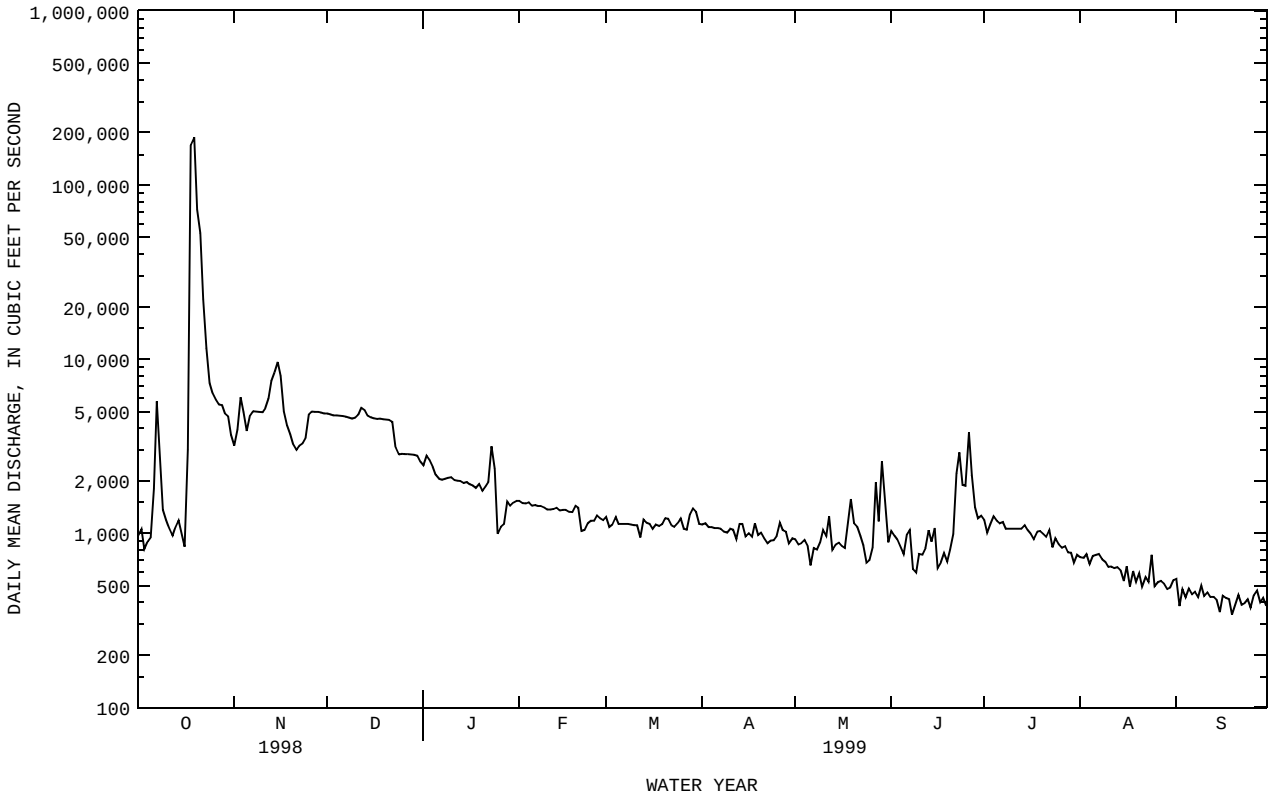
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1999z, BY WATER YEAR (WY)

MEAN	6755	2088	1889	1212	1455	1920	2035	1391	2501	2561	1225	940
MAX	18950	5006	4148	1952	2276	3098	3269	2206	5623	6153	2331	1314
(WY)	1999	1999	1999	1999	1998	1998	1997	1997	1997	1997	1997	1998
MIN	352	430	508	520	750	1149	1020	932	667	538	612	427
(WY)	1997	1997	1997	1997	1997	1999	1999	1998	1998	1998	1999	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1997 - 1999z	
ANNUAL TOTAL	1243993		1161336			
ANNUAL MEAN	3408		3182		2173	
HIGHEST ANNUAL MEAN					3182	1999
LOWEST ANNUAL MEAN					1272	1998
HIGHEST DAILY MEAN	188000	Oct 19	188000	Oct 19	188000	Oct 19 1998
LOWEST DAILY MEAN	298	Jul 24	341	Sep 19	205	Oct 20 1996
ANNUAL SEVEN-DAY MINIMUM	370	Jul 31	393	Sep 19	264	Oct 15 1996
INSTANTANEOUS PEAK FLOW			i340000	Oct 19	i340000	Oct 19 1998
INSTANTANEOUS PEAK STAGE			a50.44	Oct 19	a50.44	Oct 19 1998
ANNUAL RUNOFF (AC-FT)	2467000		2304000		1574000	
10 PERCENT EXCEEDS	4870		4810		4690	
50 PERCENT EXCEEDS	1290		1130		1070	
90 PERCENT EXCEEDS	514		524		460	

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

08173900 GUADALUPE RIVER AT GONZALES, TX--Continued



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 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 178.27 ft above sea level. Prior to Nov 9, 1934, water-stage recorder at site 150 ft upstream at datum 0.86 ft higher. Aug 10, 1959 to Feb 2, 1960, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1864, 92,700 ft^3/s Jul 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.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 19	2000	36,200	a28.80	Jun 27	1745	2,970	20.62
Nov 15	1315	5,250	22.65				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	216	36	22	18	14	178	10	39	74	4.3	6.5
2	8.1	760	32	23	17	14	79	11	24	42	4.0	5.7
3	7.7	666	30	237	17	13	50	10	18	28	3.7	4.5
4	7.0	220	29	340	16	13	37	12	15	22	3.5	4.2
5	6.9	123	28	136	17	12	29	13	13	20	3.6	3.9
6	487	113	27	54	17	13	24	12	11	23	3.4	3.4
7	1240	100	26	36	17	13	22	11	9.4	19	3.1	3.2
8	1280	164	24	30	16	13	20	10	8.5	17	3.0	3.0
9	582	134	23	27	16	13	18	9.4	7.6	15	3.0	3.2
10	171	100	24	25	16	13	17	13	7.1	13	3.5	3.7
11	78	76	31	23	16	13	15	19	7.0	12	3.8	3.3
12	46	246	117	23	15	13	15	40	6.5	19	3.8	3.0
13	32	1990	256	21	15	17	15	31	6.8	30	3.5	2.7
14	24	4020	169	20	15	20	14	21	6.7	19	3.5	2.7
15	19	4870	86	20	14	20	14	16	7.1	14	3.5	2.7
16	17	4290	54	19	17	18	13	14	10	12	3.2	2.8
17	118	2250	40	20	26	16	12	13	122	10	3.3	2.9
18	7150	690	32	19	24	15	12	159	61	8.8	3.5	2.7
19	29900	211	28	19	18	33	12	316	27	8.3	3.5	2.6
20	26600	141	26	19	16	175	12	206	21	8.3	3.4	2.5
21	9300	106	25	19	16	147	12	87	35	8.5	3.8	2.5
22	3670	84	23	19	15	79	13	37	25	11	3.7	2.3
23	1480	70	22	18	15	42	12	22	31	12	4.7	2.5
24	629	61	21	18	14	26	11	16	38	9.2	6.0	2.5
25	272	54	21	18	14	19	11	13	46	8.9	5.9	2.1
26	141	49	22	18	14	16	12	11	1080	8.3	6.9	2.0
27	104	45	21	17	14	15	12	15	2600	7.4	6.8	2.0
28	85	42	22	17	14	495	11	269	2070	6.2	6.1	2.1
29	71	40	22	18	---	905	11	500	979	5.5	5.8	2.4
30	62	38	22	18	---	719	11	381	238	4.9	5.5	2.9
31	54	---	21	18	---	482	---	112	---	4.6	5.9	---
TOTAL	83650.3	21969	1360	1331	459	3416	724	2409.4	7569.7	500.9	131.2	92.5
MEAN	2698	732	43.9	42.9	16.4	110	24.1	77.7	252	16.2	4.23	3.08
MAX	29900	4870	256	340	26	905	178	500	2600	74	6.9	6.5
MIN	6.9	38	21	17	14	12	11	9.4	6.5	4.6	3.0	2.0
AC-FT	165900	43580	2700	2640	910	6780	1440	4780	15010	994	260	183
CFSM	4.92	1.33	.08	.08	.03	.20	.04	.14	.46	.03	.01	.01
IN.	5.67	1.49	.09	.09	.03	.23	.05	.16	.51	.03	.01	.01

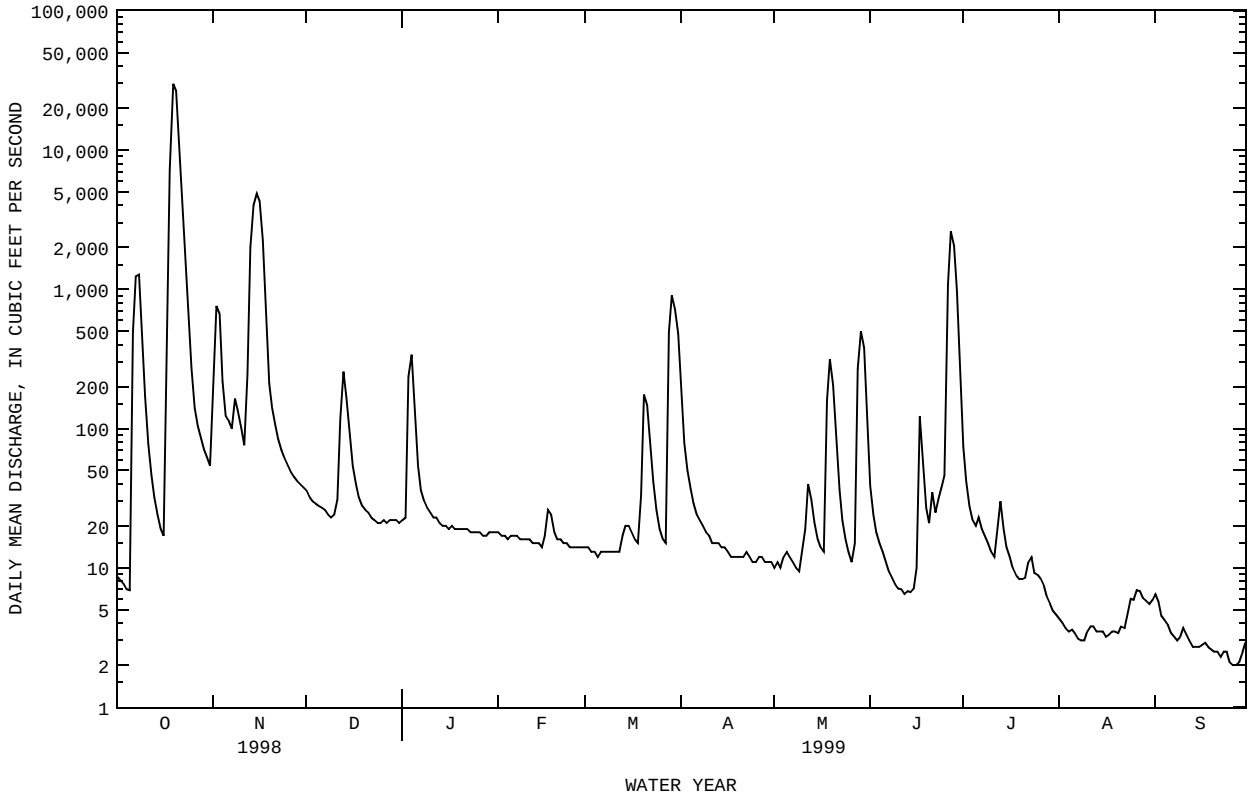
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1999h, BY WATER YEAR (WY)

MEAN	163	79.5	61.7	118	146	70.5	161	252	287	29.2	27.1	202
MAX	2698	732	969	778	1485	418	1361	2062	2820	139	261	4060
(WY)	1999	1999	1977	1974	1992	1969	1977	1972	1987	1961	1998	1967
MIN	.26	1.19	1.85	4.08	4.05	2.66	3.26	.88	.32	.23	.071	.26
(WY)	1964	1932	1989	1967	1967	1967	1963	1963	1934	1964	1962	1959

08175000 SANDIES CREEK NEAR WESTHOFF, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1930 - 1999h	
ANNUAL TOTAL	138316.1		123613.0			
ANNUAL MEAN	379		339		135	
HIGHEST ANNUAL MEAN					532	1992
LOWEST ANNUAL MEAN					8.71	1988
HIGHEST DAILY MEAN	29900	Oct 19	29900	Oct 19	67900	Sep 22 1967
LOWEST DAILY MEAN	1.2	Aug 3	2.0	Sep 26	.00	Aug 11 1932
ANNUAL SEVEN-DAY MINIMUM	1.3	Jul 30	2.2	Sep 22	.00	Aug 18 1959
INSTANTANEOUS PEAK FLOW			36200	Oct 19	c79700	Sep 22 1967
INSTANTANEOUS PEAK STAGE			a28.80	Oct 19	32.34	Sep 22 1967
ANNUAL RUNOFF (AC-FT)	274300		245200		97760	
ANNUAL RUNOFF (CFSM)	.69		.62		.25	
ANNUAL RUNOFF (INCHES)	9.37		8.38		3.34	
10 PERCENT EXCEEDS	559		237		125	
50 PERCENT EXCEEDS	14		18		9.1	
90 PERCENT EXCEEDS	2.0		3.5		1.4	

a From floodmark.
c From rating curve extended above 21,000 ft^3/s on basis of slope-area measurement of 92,700 ft^3/s.
h See PERIOD OF RECORD paragraph.



08175000 SANDIES CREEK NEAR WESTHOFF, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Apr 1962 to Sep 22 1999 (discontinued).
SEDIMENT DATA: Nov 1965 to May 1966.
PESTICIDE DATA: Oct 1992 to Jul 1, 1999 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
JAN											
26...	1145	18	1730	7.8	17.5	--	--	280	30	82	19
MAR											
02...	1050	14	1730	8.2	20.0	7.6	84	280	--	81	19
APR											
16...	1100	13	1390	7.6	19.0	5.9	63	250	50	73	16
JUL											
01...	1340	68	288	6.8	--	4.9	--	57	--	17	3.4
AUG											
24...	1430	5.9	1440	7.6	28.0	3.8	49	160	--	47	9.6
SEP											
22...	0915	2.3	2090	8.0	22.5	3.3	38	130	--	48	3.2

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)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	2,4,5-T TOTAL (UG/L) (39740)
JAN											
26...	231	6	63	7.6	250	160	280	.42	18	955	--
MAR											
02...	276	7	67	10	280	160	340	.55	12	1060	--
APR											
16...	179	5	60	11	200	120	240	.37	23	783	--
JUL											
01...	31	2	49	9.1	65	19	29	.17	20	167	<.010
AUG											
24...	252	9	76	12	360	49	210	.62	19	817	--
SEP											
22...	379	14	85	12	430	42	380	.95	17	1140	--

DATE	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	2,4-DP TOTAL (UG/L) (82183)	ALDRIN, TOTAL (UG/L) (39330)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)
JAN											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
02...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	--	--	--	--	--	--	--	--	--	--	--
JUL											
01...	.078	<.010	<.010	<.010	<.010	<.100	<.010	<.010	<.010	<.010	<.010
AUG											
24...	--	--	--	--	--	--	--	--	--	--	--
SEP											
22...	--	--	--	--	--	--	--	--	--	--	--

08175000 SANDIES CREEK NEAR WESTHOFF, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	TOX-APHENE, TOTAL (UG/L) (39400)
JAN											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
02...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	--	--	--	--	--	--	--	--	--	--	--
JUL											
01...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<1.00
AUG											
24...	--	--	--	--	--	--	--	--	--	--	--
SEP											
22...	--	--	--	--	--	--	--	--	--	--	--

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 mi^2 of which 1,432 mi^2 is above Canyon Dam.

PERIOD OF RECORD.--Jan 1903 to Dec 1906, Sep 1916 to Apr 1919, Sep 1920 to Nov 1935, and Jan 1964 to current year. Published in WSP 1312 as "near Cuero" Jan 1903 to Dec 1906, and as "below Cuero" Sep 1920 to Apr 1935. Records from 1903 to 1935 not used in statistical computation. Gage-height records collected 7.1 mi upstream from 1941 to 1966 and published in National Weather Service reports.
Water-quality records.--Chemical data: Mar 1968 to Sep 1985.

REVISED RECORDS.--WRD TX-68-1, TX-69-1: Drainage areas at all sites.

GAGE.--Water-stage recorder. Datum of gage is 128.64 ft above sea level. From Dec 26, 1902 to Jun 1903, nonrecording gage at site 7.1 mi upstream at different datum (gage heights adjusted to site 3.3 mi upstream from present site before computation); from Jul 1903 to Dec 1906, nonrecording gage 3.3 mi upstream at different datum; and Aug 19, 1916 to Dec 16, 1935, water-stage recorder at site 5.0 mi downstream at datum 3.19 ft lower. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1928, at least 10% of contributing drainage area has been regulated by Lake Dunlap and Lake McQueeny (combined capacity of 10,950 acre-ft). Additional regulation since Jul 21, 1962, by Canyon Lake (station 08167700, normal storage 386,200 acre-ft) 202.4 mi upstream. Flow below New Braunfels is partly regulated by a series of small power dams, combined capacity of six largest dams 33,550 acre-ft. Flow is affected at times by discharge from the flood-detention pools of 53 floodwater-retarding structures with a combined detention capacity of 87,200 acre-ft. These structures control runoff from 302 mi^2 in the Comal, San Marcos, and Plum Creek drainage basins. Many small diversions above station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--10 years (water years 1904-06, 1917-18, 1921-27) 1,220 ft^3/s (839,900 acre-ft/ yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1904-06, 1917-18, 1921-27).--Maximum stage since at least 1900 probably occurred on Mar 1, 1903, at 43.0 ft (at different site and datum), but discharge was not determined.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 probably occurred Jul 2, 1936, 44.33 ft, present site and datum, from information by Texas Department of Transportation. Other floods at this station occurred Oct 4, 1913, 37.57 ft, at different site and datum; Dec 6, 1913, 34.57 ft (at different site and datum); Oct 20, 1919, 32.2 ft (site and datum then in use), and Jun 21, 1961, 37.0 ft at present site and datum

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1060	6430	5290	2660	1740	1400	1860	1130	1250	1390	821	549
2	1190	9500	5250	2990	1740	1440	1520	1100	1240	1320	629	672
3	997	7820	5200	3680	1700	1370	1460	1070	1160	1040	738	655
4	1040	8110	5130	3140	1690	1210	1420	1040	1100	957	831	505
5	781	6260	5110	2810	1700	1460	1340	1060	1030	1170	790	488
6	2610	4720	5090	2480	1660	1350	1340	1070	947	1170	672	497
7	5580	5190	5130	2350	1650	1340	1330	976	1050	1130	788	535
8	7560	5540	5140	2330	1650	1330	1310	902	1250	1130	793	629
9	4640	5570	4950	2340	1630	1340	1290	939	1050	1140	779	533
10	2060	5430	4930	2340	1640	1320	1230	1040	812	1060	702	519
11	1470	5330	5090	2260	1600	1320	1270	1150	741	e1000	736	641
12	1130	5780	6040	2120	1570	1320	1270	1210	836	e1100	679	535
13	1100	11800	6810	1970	1560	1220	1180	1260	942	e1100	689	533
14	1120	18500	6860	1980	1590	1310	1230	1100	1140	e1200	643	500
15	1130	22200	5830	2030	1550	1390	1330	997	1130	1090	695	499
16	1110	25200	5120	1980	1560	1360	1180	1060	1320	1070	584	534
17	917	26300	4910	1980	1630	1290	1190	999	1000	1030	617	482
18	13400	21400	4810	1940	1570	1350	1160	1430	945	931	688	487
19	209000	9040	4770	1880	1530	1310	1260	2300	e1100	1140	575	525
20	338000	5050	4730	1970	1590	1500	1200	2240	e1100	1150	579	523
21	140000	4250	4700	1840	1720	1630	1200	1600	e1050	1080	577	504
22	83500	3800	4640	1890	1190	1620	1160	1380	e1150	1050	700	457
23	47400	3830	4500	2010	1190	1460	1070	1160	2030	1060	582	498
24	31500	3860	3500	2910	1360	1370	1050	1020	3000	985	594	500
25	20800	4100	2980	2670	1390	1340	1060	926	2200	999	725	410
26	10300	5080	2970	1360	1390	1420	1120	783	5710	966	709	479
27	7370	5440	2950	1230	1460	1330	1420	1660	8370	947	573	555
28	6630	5440	2930	1310	1450	2080	1210	3310	6050	942	640	541
29	6350	5430	2900	1720	---	3110	1230	2940	4310	907	589	538
30	5680	5360	2870	1660	---	2800	949	3490	2220	836	560	514
31	5280	---	2820	1690	---	2420	---	2410	---	806	555	---
TOTAL	960705	261760	143950	67520	43700	47510	37839	44752	57233	32896	20832	15837
MEAN	30990	8725	4644	2178	1561	1533	1261	1444	1908	1061	672	528
MAX	338000	26300	6860	3680	1740	3110	1860	3490	8370	1390	831	672
MIN	781	3800	2820	1230	1190	1210	949	783	741	806	555	410
AC-FT	1906000	519200	285500	133900	86680	94240	75050	88770	113500	65250	41320	31410

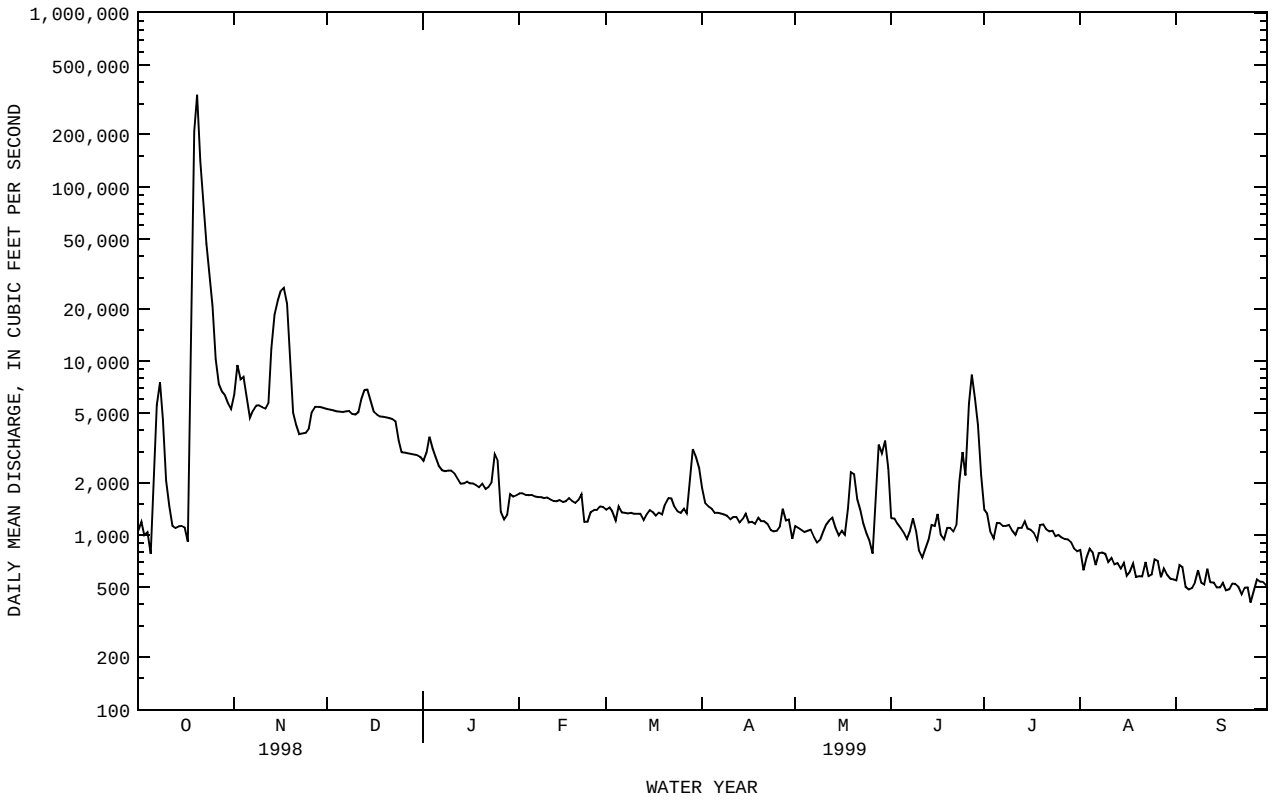
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999hz, BY WATER YEAR (WY)

MEAN	2295	1721	1803	1891	2186	1863	2279	3064	3352	1527	1167	1713
MAX	30990	8725	10500	10830	16740	10370	11100	12270	21470	6559	4149	11210
(WY)	1999	1999	1992	1992	1992	1992	1977	1972	1987	1997	1987	1981
MIN	242	411	432	397	403	504	381	309	242	95.7	112	124
(WY)	1990	1990	1990	1990	1990	1967	1971	1984	1984	1984	1984	1984

08175800 GUADALUPE RIVER AT CUERO, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1964 - 1999hz	
ANNUAL TOTAL	1845602		1734534			
ANNUAL MEAN	5056		4752		2101	
HIGHEST ANNUAL MEAN					6885	1992
LOWEST ANNUAL MEAN					435	1984
HIGHEST DAILY MEAN	338000	Oct 20	338000	Oct 20	338000	Oct 20 1998
LOWEST DAILY MEAN	331	Aug 6	410	Sep 25	28	Jul 22 1984
ANNUAL SEVEN-DAY MINIMUM	386	Jul 28	482	Sep 20	45	Jul 18 1984
INSTANTANEOUS PEAK FLOW			i473000	Oct 20	i473000	Oct 20 1998
INSTANTANEOUS PEAK STAGE			a50.35	Oct 20	a50.35	Oct 20 1998
ANNUAL RUNOFF (AC-FT)	3661000		3440000		1522000	
10 PERCENT EXCEEDS	6080		5550		3770	
50 PERCENT EXCEEDS	1570		1340		1060	
90 PERCENT EXCEEDS	532		608		463	

e Estimated
h See PERIOD OF RECORD paragraph.
z Period of regulated streamflow.
i From indirect measurement of peak flow.
a From floodmark.



08176500 GUADALUPE RIVER AT VICTORIA, TX

LOCATION.--Lat 28°47'34", long 97°00'46", Victoria County, Hydrologic Unit 12100204, on left bank near left downstream corner of downstream bridge of two bridges on U.S. Highway 59 in Victoria, 1,200 ft upstream from Southern Pacific Railroad Co. bridge, 15 mi upstream from Coleto Creek, and at mile 50.7.

DRAINAGE AREA.--5,198 mi^2, of which 1,432 mi^2 is above Canyon Dam.

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 Sep 1981. Water temperature: Nov 1950 to Sep 1981.

REVISED RECORDS.--WSP 2123: Drainage area.

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in Nov 1934, at least 10% of contributing drainage area has been regulated by Lake Dunlap and Lake McQueeny (combined capacity of 10,950 acre-ft). Flow is also regulated by Canyon Lake (station 08167700, normal storage 386,200 acre-ft) 252.3 mi upstream. There are many diversions above station. Records provided by the city of Victoria show that during the current year about 8,120 acre-ft of wastewater effluent was released into the river below this station.

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

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	869	e5540	5320	2810	1720	1440	2030	1100	1850	1790	859	568
2	1130	e8370	5270	2660	1730	1440	1620	1170	1300	1400	849	566
3	1050	e8750	5230	3310	1720	1460	1460	1170	1300	1270	718	718
4	1030	e7930	5170	3260	1700	1340	1420	1140	1230	1110	783	634
5	945	e7820	5100	2940	1690	1360	1370	1130	1180	1080	865	525
6	e1500	e7200	5100	2640	1700	1440	1340	1150	1120	1210	797	500
7	e3000	e6000	5120	2460	1660	1370	1330	1140	1070	1210	738	509
8	6110	e6000	5430	2370	1660	1370	1320	1070	1210	1150	816	556
9	6660	e6000	5140	2340	1640	1360	1310	1040	1280	1140	819	599
10	3670	e5600	5000	2330	1650	1360	1280	1110	1120	1170	812	528
11	1940	5450	5120	2290	1660	1350	1260	1140	924	1090	713	533
12	1520	5720	5660	2250	1650	1350	1290	1350	914	1170	781	611
13	1170	13600	6160	2120	1600	1360	1280	1270	994	1150	698	537
14	1180	21200	6570	2040	1600	1260	1200	1340	1180	1320	727	544
15	1180	21700	6320	2080	1600	1380	1300	1150	1260	1140	698	509
16	1240	20500	5500	2000	1570	1380	1310	1130	1460	1090	697	493
17	1110	22900	5040	2030	1600	1350	1210	1140	1370	1080	625	520
18	6450	25200	4880	1980	1620	1340	1230	1850	1060	1050	678	477
19	22900	20300	4790	1960	1580	1370	1200	1810	1240	1020	690	473
20	e307000	8970	4750	1930	1560	1360	1300	2120	1200	1120	614	516
21	e235000	5460	4710	1970	1690	1480	1230	1930	1090	1130	614	511
22	e115000	4550	e4600	1880	1500	1540	1240	1500	1200	1090	613	491
23	e75400	4230	4550	1930	1310	1500	1190	1360	1470	1060	725	451
24	e52900	4140	4240	2110	1340	1390	1150	1230	2450	1070	689	492
25	e34200	4160	3380	2820	1410	1330	1150	1130	2570	1000	636	498
26	e20800	4510	3090	2120	1420	1340	1180	1040	2670	1020	762	441
27	e10700	5240	3050	1460	1440	1380	1260	947	6950	984	681	463
28	e7780	5400	3000	1450	1480	1610	1330	2440	6990	973	595	553
29	e6980	5390	2960	1550	---	2360	1260	2710	5230	964	657	581
30	e6640	5370	2910	1730	---	2600	1170	2850	3380	927	598	544
31	e5830	---	2880	1680	---	2340	---	3060	---	878	574	---
TOTAL	942884	283200	146040	68500	44500	46310	39220	45717	58262	34856	22121	15941
MEAN	30420	9440	4711	2210	1589	1494	1307	1475	1942	1124	714	531
MAX	307000	25200	6570	3310	1730	2600	2030	3060	6990	1790	865	718
MIN	869	4140	2880	1450	1310	1260	1150	947	914	878	574	441
AC-FT	1870000	561700	289700	135900	88270	91860	77790	90680	115600	69140	43880	31620

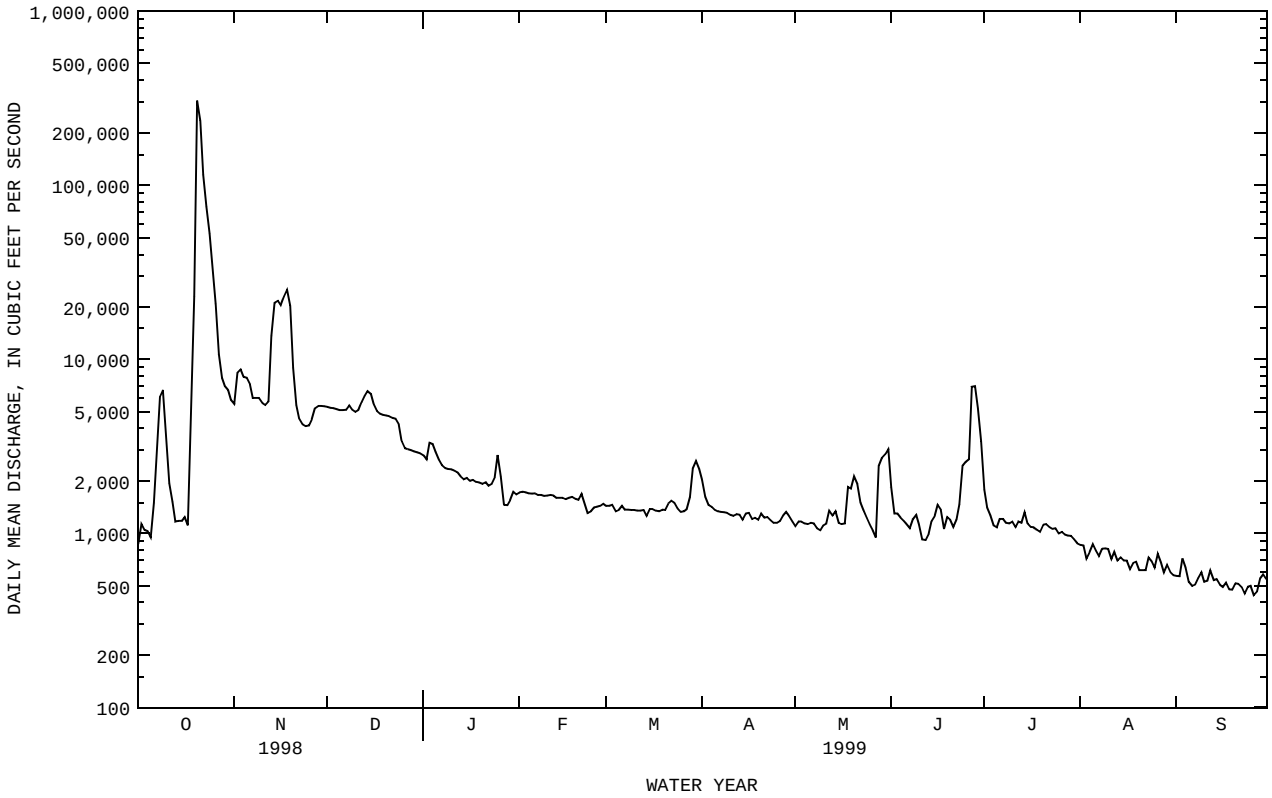
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 1999, BY WATER YEAR (WY)

MEAN	2115	1671	1597	1700	1978	1737	2132	2898	2899	1778	979	1671
MAX	30420	9440	9753	10650	17250	10600	10320	12990	23750	18430	4473	11340
(WY)	1999	1999	1992	1992	1992	1992	1977	1941	1987	1936	1987	1981
MIN	100	59.6	183	118	255	158	157	224	59.7	53.9	37.6	51.6
(WY)	1956	1957	1956	1957	1956	1956	1956	1956	1956	1956	1956	1956

08176500 GUADALUPE RIVER AT VICTORIA, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1935 - 1999	
ANNUAL TOTAL	1885294		1747551			
ANNUAL MEAN	5165		4788		1912	
HIGHEST ANNUAL MEAN					6993	1992
LOWEST ANNUAL MEAN					132	1956
HIGHEST DAILY MEAN	307000	Oct 20	307000	Oct 20	307000	Oct 20 1998
LOWEST DAILY MEAN	386	Aug 8	441	Sep 26	14	Aug 20 1956
ANNUAL SEVEN-DAY MINIMUM	427	Jul 29	478	Sep 21	22	Sep 29 1956
INSTANTANEOUS PEAK FLOW			i466000	Oct 20	i466000	Oct 20 1998
INSTANTANEOUS PEAK STAGE			a34.04	Oct 20	a34.04	Oct 20 1998
INSTANTANEOUS LOW FLOW					36	Aug 21 1996
ANNUAL RUNOFF (AC-FT)	3739000		3466000		1386000	
10 PERCENT EXCEEDS	6600		5900		3560	
50 PERCENT EXCEEDS	1580		1370		990	
90 PERCENT EXCEEDS	569		635		366	

e Estimated
i From indirect measurement of peak flow.
a From floodmark.



08176550 FIFTEENMILE CREEK NEAR WESER, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 28°53'51", long 97°21'17", De Witt County, Hydrologic Unit 12100204, at DeWitt-Goliad County line, on right downstream end of bridge on U.S. Highway 183, and 2.4 mi northeast of Weser.

DRAINAGE AREA.--167 mi^2.

PERIOD OF RECORD.--Oct 1984 to Sep 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 sea level. Satellite telemeter at station.

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

AVERAGE DISCHARGE.--5 years (water years 1985-89), 18.7 ft^3/s (13,550 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,400 ft^3/s Jun 22, 1997 (gage height, 26.68 ft), from rating curve extended above 2,840 ft^3/s; minimum daily, no flow for several days in 1989.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 6	1515	1,150	12.05	Nov 14	0815	4,790	a17.92
Oct 19	1645	9,630	22.06				

a From floodmark.

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08176900 COLETO CREEK AT ARNOLD ROAD CROSSING NEAR SCHROEDER, TX

LOCATION.--Lat 28°51'41", long 97°13'34", Goliad County, Hydrologic Unit 12100204, on right bank at downstream side of Arnold Road Crossing, 0.7 mi downstream from confluence of Twelvemile and Fifteenmile Creeks, 3.2 mi north of Schroeder, 12.8 mi upstream from Coleto Creek Reservoir, and 26.0 mi upstream from mouth.

DRAINAGE AREA.--357 mi^2.

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

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

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharges since at least 1872 at site 3.5 mi downstream, 122,000 ft^3/s Sep 21, 1967 (slope-area measurement of peak flow), 63,700 ft^3/s Oct 16, 1946, and 46,700 ft^3/s in Oct 1925, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 18	2045	14,400	20.92	Nov 14	1345	14,900	21.15

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	121	79	41	25	20	51	12	20	46	5.6	1.9
2	34	488	76	40	24	20	42	12	17	36	5.4	1.8
3	36	246	73	37	24	19	36	12	15	30	5.1	1.8
4	31	118	70	36	24	19	33	12	14	28	5.0	2.6
5	28	94	68	35	24	19	29	12	14	26	4.9	2.7
6	1510	84	66	35	24	19	27	11	14	25	4.6	2.5
7	1530	75	67	35	24	19	25	10	14	39	4.3	2.7
8	361	77	81	35	24	19	23	10	15	29	4.2	2.5
9	151	76	74	34	24	19	22	9.9	15	22	3.9	2.7
10	88	66	71	32	24	19	21	11	15	20	3.8	3.4
11	65	57	72	31	28	19	20	11	15	18	3.6	3.5
12	54	85	131	31	30	19	19	14	15	16	3.4	2.7
13	46	2220	107	31	27	19	18	14	16	18	3.3	2.2
14	41	9660	78	31	26	18	18	17	19	22	3.2	1.9
15	37	3160	66	30	24	18	17	14	22	15	2.9	1.7
16	34	694	60	30	24	17	16	12	28	12	2.8	1.6
17	34	389	57	30	24	17	15	10	29	10	2.7	1.4
18	6340	275	55	30	23	18	14	34	25	9.6	2.7	1.3
19	9500	219	53	29	23	19	14	45	24	10	2.6	1.3
20	5320	187	50	29	23	21	13	31	31	9.6	2.5	1.2
21	777	162	49	29	22	21	13	22	29	9.2	2.3	1.2
22	433	145	48	29	21	20	13	18	28	10	2.4	1.3
23	275	133	47	27	21	20	13	15	30	10	2.7	1.3
24	198	122	46	26	21	20	13	13	31	9.6	3.1	1.3
25	157	112	44	26	21	19	13	13	37	8.7	3.3	1.2
26	130	103	43	26	21	18	15	12	360	8.3	3.4	1.1
27	120	97	43	26	21	18	17	12	310	8.0	3.0	1.1
28	127	92	43	26	21	57	17	16	195	7.0	2.8	1.1
29	98	87	42	27	---	264	15	17	98	6.5	2.6	1.4
30	84	83	41	26	---	148	13	24	64	6.2	2.3	1.5
31	76	---	41	26	---	72	---	27	---	5.8	2.1	---
TOTAL	27747	19527	1941	956	662	1054	615	502.9	1559	530.5	106.5	55.9
MEAN	895	651	62.6	30.8	23.6	34.0	20.5	16.2	52.0	17.1	3.44	1.86
MAX	9500	9660	131	41	30	264	51	45	360	46	5.6	3.5
MIN	28	57	41	26	21	17	13	9.9	14	5.8	2.1	1.1
AC-FT	55040	38730	3850	1900	1310	2090	1220	998	3090	1050	211	111

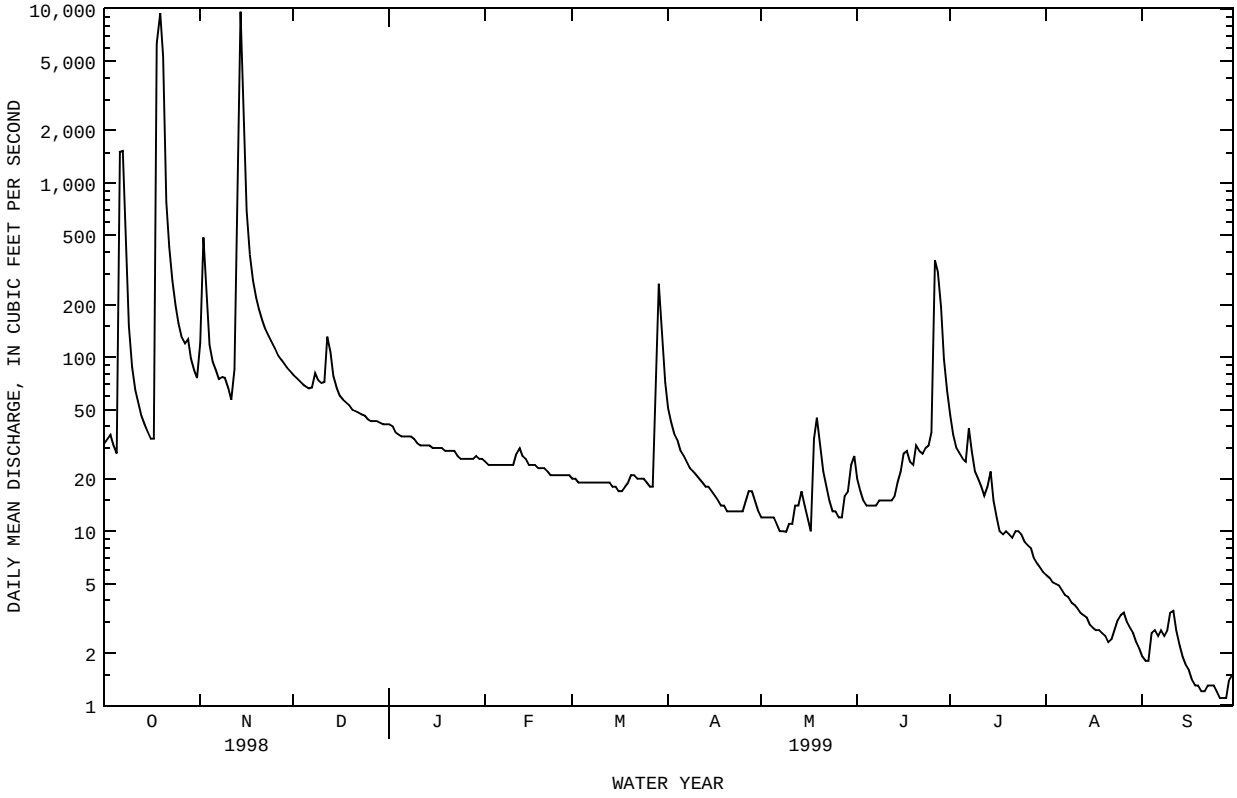
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1999, BY WATER YEAR (WY)

MEAN	122	69.2	41.6	55.0	72.7	59.8	138	121	182	27.2	24.1	67.6
MAX	895	651	301	400	486	265	1021	608	1191	114	309	920
(WY)	1999	1999	1987	1979	1992	1997	1997	1979	1997	1990	1981	1998
MIN	.046	.049	.94	2.62	2.71	2.78	1.56	.29	.73	.14	.000	.000
(WY)	1989	1990	1990	1990	1996	1996	1996	1996	1990	1989	1996	1989

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1979 - 1999	
ANNUAL TOTAL	87105.39		55256.8			
ANNUAL MEAN	239		151		81.4	
HIGHEST ANNUAL MEAN					222	1997
LOWEST ANNUAL MEAN					2.47	1989
HIGHEST DAILY MEAN	12600	Sep 11	9660	Nov 14	24600	Jun 22 1997
LOWEST DAILY MEAN	.00	Jul 25	1.1	Sep 26	.00	Aug 20 1989
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 25	1.2	Sep 22	.00	Aug 20 1989
INSTANTANEOUS PEAK FLOW			14900	Nov 14	c44500	Jun 22 1997
INSTANTANEOUS PEAK STAGE			21.15	Nov 14	31.17	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	172800		109600		58950	
10 PERCENT EXCEEDS	226		119		65	
50 PERCENT EXCEEDS	25		23		12	
90 PERCENT EXCEEDS	.91		2.7		.94	

c From rating curve extended above current meter measurement of 26,600 ft^3/s.

08176900 COLETO CREEK AT ARNOLD ROAD CROSSING NEAR SCHROEDER, TX--Continued



08177300 PERDIDO CREEK AT FARM ROAD 622 NEAR FANNIN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 28°45'05", long 97°19'01", Goliad County, Hydrologic Unit 12100204, at right downstream end of bridge on Farm Road 622, 1.2 mi downstream from Farmer Creek, 3.1 mi upstream from Kilgore Creek, and 6.1 mi northwest of Fannin.

DRAINAGE AREA.--28.0 mi^2.

PERIOD OF RECORD.--Jun 1978 to Sep 1991 (daily mean discharge), Oct 1991 to current year (peak discharges greater than base discharge).

GAGE.--Water-stage recorder. Datum of gage is 134.66 ft above sea level. Radio telemeter at station.

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

AVERAGE DISCHARGE.--13 years (water years 1979-91), 5.05 ft^3/s (2.45 in/yr), 3,660 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,500 ft^3/s Apr 4, 1997 (gage height, 17.89 ft), from rating curve extended above 22,700 ft^3/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr 20, 1976, reached a stage of 26.28 ft, and flood of Sep 15, 16, 1967, reached a stage of 26.08 ft, from information by the Texas Department of Transportation.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 6	1230	846	7.53	Nov 14	0615	3,580	9.97
Oct 18	1145	1,710	8.71				

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08177400 COLETO CREEK RESERVOIR NEAR VICTORIA, TX

LOCATION.--Lat 28°43'51", long 97°09'53", Victoria County, Hydrologic Unit 12100204, on right bank 175 ft upstream from right end of spillway of dam on Coleto Creek, 1.6 mi upstream from U.S. Highway 59, 11.6 mi west of Victoria, and 12.8 mi upstream from mouth.

DRAINAGE AREA.--494 mi^2.

PERIOD OF RECORD.--Feb 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 80.00 ft above sea level. Satellite telemeter at station.
Supplementary gage.--Water-stage recorder 2.7 mi upstream at Turkey Creek Arm near Schroeder, locally known as Dike No. 2, at datum 90.00 ft above sea level.
Supplementary gage.--Water-stage recorder 2.8 mi upstream at Sulphur Creek Arm near Fannin, locally known as Dike No. 1, at datum 90.00 ft above sea level.
Operation of supplementary gages was taken over by Guadalupe-Blanco River Authority on July 1.

REMARKS.--The reservoir system consists of the main reservoir, Turkey Creek Arm, and Sulphur Creek Arm. Figures shown below are the combined contents of the three reservoirs. 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.

The main reservoir is formed by a compacted earthfill dam 20,800 ft long, including a 2,000-foot uncontrolled spillway and a 403-foot wide concrete outlet structure with seven 40- x 28-foot spillway gates. Low-flow releases are made through the dam by a controlled 8-inch pipe. Turkey Creek Arm is formed by a compacted earthfill dam 2,250 ft long, including a 186-foot wide concrete outlet structure with two 40- x 11-foot spillway gates. Sulphur Creek Arm is formed by a compacted earthfill dam 1,030 ft long, including a 186-foot wide concrete outlet structure with two 40- by 11-foot spillway gates. Data regarding the dams are given in the following table:

	Coleto Creek Reservoir Gage height (feet)	Turkey Creek Arm Gage height (feet)	Sulphur Creek Arm Gage height (feet)
Top of dam	39.0	17.0	17.0
Spillway	27.3	--	--
Top of spillway gates	19.0	12.9	12.9
Crest of spillway	-9.0	1.89	1.91

COOPERATION.--Elevations and capacity tables were provided by Forrest and Cotton Engineers, Consulting Engineers for the Guadalupe-Blanco River Authority. Since July 1, record of contents at supplementary gages furnished by GBRA.

EXTREMES (AT 2400 HOURS) FOR PERIOD OF RECORD.--Maximum contents, 40,630 acre-ft, Oct 18, 1998; minimum since reservoir was first filled in May 1980, 22,790 acre-ft, Aug 20, 21, 1996.

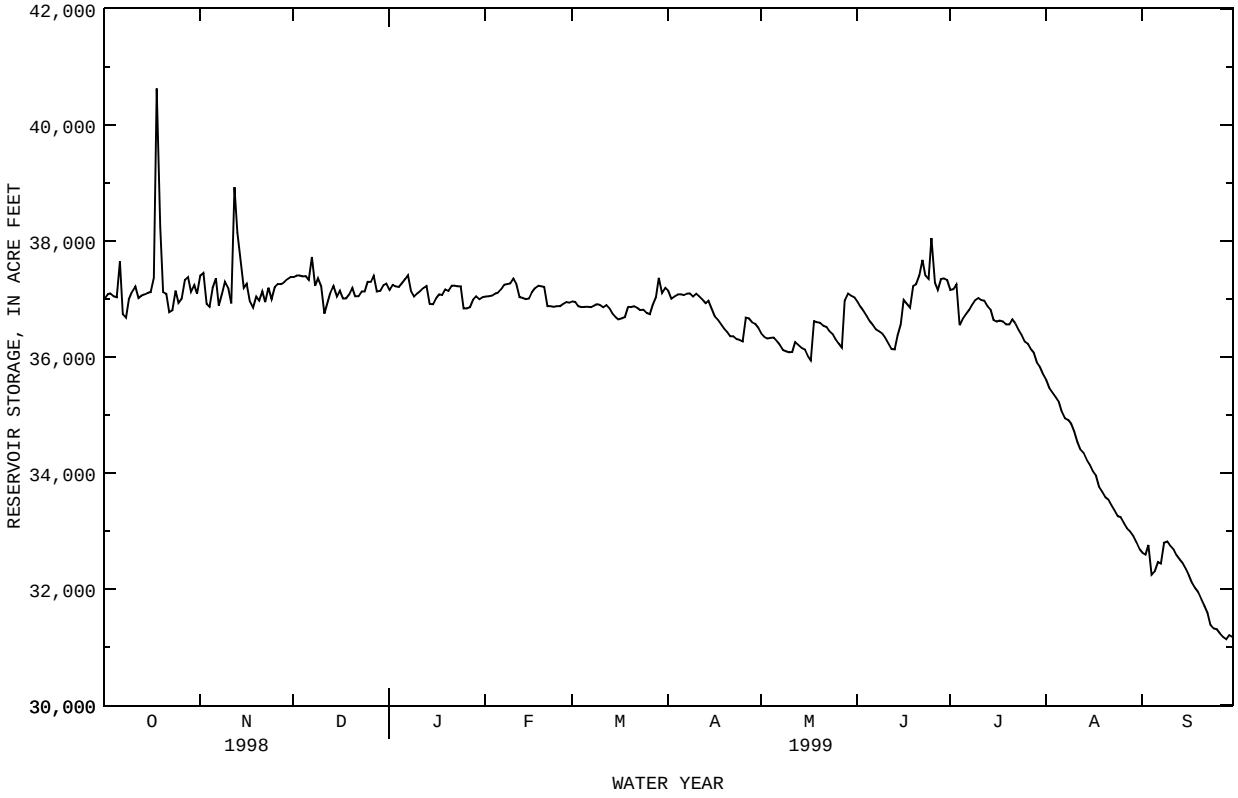
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37000	37410	37380	37160	37040	36960	37150	36410	36960	37160	35600	32630
2	37080	37450	37410	37250	37050	36950	37010	36350	36870	37170	35460	32600
3	37100	36920	37410	37220	37060	36880	37050	36320	36800	37260	35390	32760
4	37050	36870	37390	37210	37090	36860	37080	36330	36710	36550	35310	32250
5	37030	37200	37400	37270	37110	36870	37080	36340	36620	36670	35230	32310
6	37650	37360	37330	37350	37170	36870	37070	36280	36550	36740	35060	32470
7	36740	36890	37730	37420	e37250	36860	37090	36210	36480	36810	34950	32440
8	36680	37090	37230	37130	e37260	36890	37100	36120	36450	36900	34920	32800
9	37000	37300	37360	37040	e37270	36910	37040	36100	36410	36980	34850	32820
10	37130	37180	37220	37100	37360	36900	37090	36080	36340	37020	34720	32750
11	37220	36930	36750	37140	37260	36860	37050	36090	36240	36980	34540	32690
12	37020	38930	36930	37190	37030	36900	36990	36260	36140	36970	34410	32590
13	37060	38150	37120	37230	37020	36840	36930	36210	36130	36880	34350	32510
14	37080	37670	37230	36920	37000	36750	36970	36160	36370	36820	34230	32450
15	37110	37200	37050	36910	37010	36690	36840	36130	36560	36640	34140	32350
16	37120	37270	37150	37010	37120	36650	36700	36020	36980	36610	34040	32240
17	37370	36960	37010	37080	37190	36670	36640	35940	36920	36630	33960	32110
18	40630	36850	37010	37070	37230	36690	36570	36620	36850	36610	33760	32020
19	38240	37040	37080	37170	37220	36870	36490	36600	37230	36560	33680	31950
20	37120	36970	37200	37140	37210	36860	36440	36590	37260	36560	33590	31830
21	37090	37130	37050	37230	36880	36880	36360	36540	37410	36650	33550	31710
22	36780	36950	37050	37230	36880	36850	36360	36520	37680	36580	33440	31590
23	36810	37200	37130	37220	36870	36810	36310	36450	37410	36470	33360	31380
24	37150	37000	37130	37220	36880	36820	36300	36400	37350	36390	33260	31320
25	36940	37210	37300	36840	36880	36760	36270	36310	38050	36270	33240	31310
26	37010	37260	37300	36840	36920	36740	36680	36230	37280	36230	33140	31240
27	37330	37260	37410	36860	36950	36900	36670	36160	37160	36130	33050	31180
28	37380	37290	37130	36990	36940	37030	36600	36980	37350	36070	33000	31140
29	37130	37340	37140	37050	---	37370	36580	37100	37360	35900	32920	31210
30	37250	37380	37240	37000	---	37110	36500	37060	37330	35830	32810	31180
31	37090	---	37270	37030	---	37200	---	37030	---	35700	32690	---
MAX	40630	38930	37730	37420	37360	37370	37150	37100	38050	37260	35600	32820
MIN	36680	36850	36750	36840	36870	36650	36270	35940	36130	35700	32690	31140
(@)	+70	+290	-110	-240	-90	+260	-700	+530	+300	-1630	-3010	-1510

CAL YR 1998 MAX 40630 MIN 27500 (@) +480
WTR YR 1999 MAX 40630 MIN 31140 (@) -5840

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

08177400 COLETO CREEK RESERVOIR NEAR VICTORIA, TX--Continued



08177500 COLETO CREEK NEAR VICTORIA, TX

LOCATION.--Lat 28°43'51", long 97°08'18", Victoria County, Hydrologic Unit 12100204, on left bank at downstream side of westbound bridge on U.S. Highway 59, 1.6 mi downstream from Coleto Creek dam, 9.0 mi southwest of Victoria, and 11.2 mi upstream from mouth.

DRAINAGE AREA.--514 mi^2.

PERIOD OF RECORD.--Jun 1939 to Sep 1954, Jun 1978 to current year.

REVISED RECORDS.--WSP 1562: 1939-40. WSP 1732: 1941.

GAGE.--Water-stage recorder. Datum of gage is 44.18 ft above sea level. Prior to Jan 17, 1955, at datum 5.0 ft higher. Satellite telemeter at station.

REMARKS.--Records fair. Since Feb 21, 1980 at least 10% of contributing drainage area has been regulated by Coleto Creek Reservoir (station 08177400, normal storage 35,084 acre-ft), 1.6 mi upstream. Beginning on Mar 6, 1980, water diverted from the Guadalupe River basin to the Coleto Creek basin upstream from Coleto Creek Reservoir. There are no other large diversions above station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--16 years (water years 1940-54, 1979) prior to regulation by Coleto Creek Reservoir, 92.7 ft^3/s (67,160 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1940-54, 1979-80).--Maximum discharge, 89,000 ft^3/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 ft^3/s Sep 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 Jul 1, 1936, reached a stage of 32.2 ft, present site and datum, from information by railroad company.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e4.5	8.5	e5.7	127	7.9	5.2	9.5	4.1	6.0	11	4.6	4.6
2	e4.7	284	e5.5	9.2	5.9	5.0	114	4.2	6.1	9.9	6.0	4.7
3	e4.6	425	e5.2	7.3	5.5	4.5	6.0	8.4	6.2	104	4.9	4.8
4	e4.4	71	e5.0	6.9	5.3	4.6	4.7	5.6	6.3	62	4.4	4.9
5	5.2	10	95	6.8	5.3	4.5	4.3	5.0	6.1	10	4.3	4.9
6	3400	11	457	6.6	5.3	4.4	3.8	5.1	6.1	8.8	4.3	5.1
7	2370	343	343	6.5	5.0	4.3	3.7	5.3	6.3	8.1	4.4	8.0
8	287	30	511	156	5.0	4.5	3.6	5.6	6.3	8.6	4.4	5.4
9	6.2	17	21	21	4.9	4.3	3.4	5.8	7.9	8.3	4.4	4.9
10	e5.0	72	151	8.1	4.9	4.2	3.3	6.3	6.3	8.1	4.4	4.5
11	e4.5	210	274	7.3	100	4.1	3.2	6.3	6.0	7.2	4.4	4.5
12	81	147	66	6.9	99	4.2	3.1	6.9	6.1	6.7	4.5	4.6
13	e6.0	5690	13	6.6	7.2	4.3	3.1	6.4	6.1	6.5	6.9	4.6
14	e5.0	14500	11	123	6.1	4.0	3.0	6.4	6.8	6.4	4.9	4.7
15	e4.5	4380	127	8.6	5.8	4.1	2.8	6.2	6.7	6.4	4.3	4.7
16	e4.0	699	11	7.3	5.5	4.1	2.7	6.3	6.8	6.2	4.3	4.7
17	8.3	488	51	6.8	5.5	4.0	2.7	5.9	6.5	6.3	4.5	4.8
18	11300	275	90	6.5	5.2	4.0	2.7	8.3	6.6	6.2	4.6	4.9
19	13800	157	9.1	6.4	5.0	4.3	2.6	6.4	8.1	6.0	4.5	4.9
20	6890	140	7.7	6.3	5.0	4.1	2.6	6.2	7.5	6.0	4.3	4.9
21	904	85	121	6.3	100	3.8	2.8	6.2	6.9	6.2	4.3	4.7
22	508	180	11	6.1	6.7	3.8	3.1	6.3	8.6	5.6	4.5	4.8
23	172	27	7.8	5.7	5.7	3.8	3.6	6.3	111	5.0	4.6	4.9
24	54	179	7.3	5.7	5.3	3.8	3.6	8.0	22	4.9	4.6	5.0
25	194	15	6.9	132	5.1	3.7	3.6	6.2	233	4.8	4.4	5.1
26	97	e10	6.8	21	5.0	3.7	6.8	6.2	718	4.8	4.5	5.1
27	101	e9.0	6.7	7.1	4.9	3.6	4.5	6.2	240	4.8	4.6	5.0
28	135	e8.0	148	6.5	4.7	151	4.0	8.7	16	4.8	4.6	5.2
29	186	e7.0	10	6.2	---	11	4.0	7.6	13	4.8	4.6	5.3
30	13	e6.0	7.7	5.7	---	152	4.1	6.2	11	4.8	4.4	4.8
31	149	---	10	5.6	---	7.2	---	6.0	---	4.7	4.5	---
TOTAL	40707.9	28483.5	2602.4	749.0	436.7	434.1	224.9	194.6	1510.3	357.9	142.9	149.0
MEAN	1313	949	83.9	24.2	15.6	14.0	7.50	6.28	50.3	11.5	4.61	4.97
MAX	13800	14500	511	156	100	152	114	8.7	718	104	6.9	8.0
MIN	4.0	6.0	5.0	5.6	4.7	3.6	2.6	4.1	6.0	4.7	4.3	4.5
AC-FT	80740	56500	5160	1490	866	861	446	386	3000	710	283	296

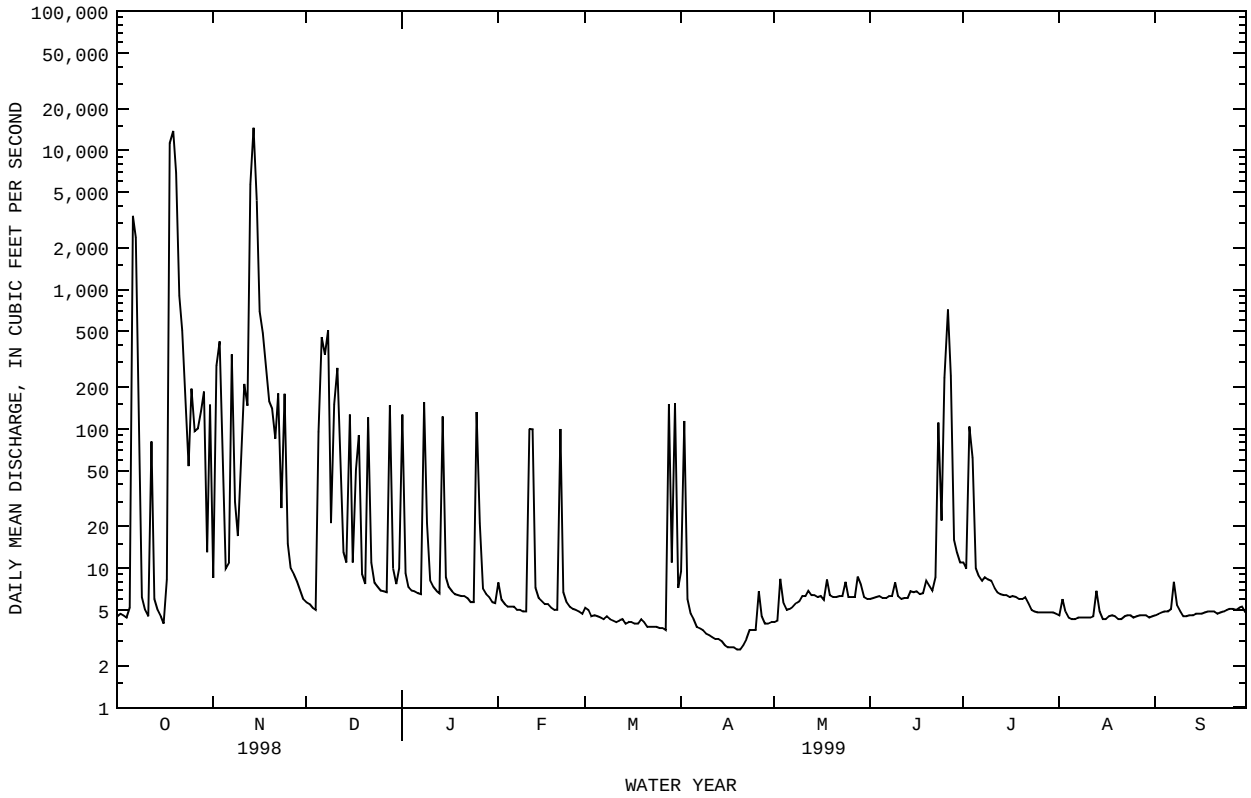
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1999z, BY WATER YEAR (WY)

MEAN	214	95.4	48.6	37.1	117	100	212	147	273	56.9	9.50	68.7
MAX	1313	949	434	347	961	545	1817	940	1426	397	89.3	990
(WY)	1999	1999	1992	1992	1992	1997	1997	1993	1993	1990	1981	1998
MIN	1.61	1.90	2.01	1.93	1.98	2.05	2.07	2.09	1.82	1.31	1.06	1.56
(WY)	1996	1997	1997	1996	1996	1996	1996	1996	1990	1996	1989	1989

08177500 COLETO CREEK NEAR VICTORIA, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1981 - 1999z	
ANNUAL TOTAL	113025.8		75993.2			
ANNUAL MEAN	310		208		114	
HIGHEST ANNUAL MEAN					302	1997
LOWEST ANNUAL MEAN					1.98	1996
HIGHEST DAILY MEAN	14500	Nov 14	14500	Nov 14	27500	Apr 4 1997
LOWEST DAILY MEAN	3.1	Aug 9	2.6	Apr 19	.00	May 6 1981
ANNUAL SEVEN-DAY MINIMUM	3.1	Aug 7	2.7	Apr 15	.66	Mar 3 1994
INSTANTANEOUS PEAK FLOW			22400	Oct 18	c50100	Apr 4 1997
INSTANTANEOUS PEAK STAGE			a23.25	Oct 18	a32.05	Apr 4 1997
ANNUAL RUNOFF (AC-FT)	224200		150700		82930	
10 PERCENT EXCEEDS	282		148		33	
50 PERCENT EXCEEDS	5.1		6.1		5.0	
90 PERCENT EXCEEDS	3.8		4.1		2.0	

e Estimated
z Period of regulated streamflow.
c From rating curve extended above current-meter measurements of 32,200 ft^3/s and 36,300 ft^3/s.
a From Floodmark.



08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°29'56", long 98°30'36", Bexar County, Hydrologic Unit 12100301, on right bank 30 ft downstream from low-water bridge on Dresden Drive at San Antonio, 0.15 mi west of intersection of Blanco Road and Dresden Drive, and 4.0 mi upstream from Olmos Dam.

DRAINAGE AREA.--21.2 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1968 to Sep 1981 (daily mean discharge), Oct 1982 to current year (peak discharges greater than base discharge).

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

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

AVERAGE DISCHARGE.--13 years (water years 1968-81), 4.34 ft^3/s (2.78 in/yr), 3,140 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,700 ft^3/s Apr 5, 1991 (gage height, 14.38 ft, from floodmark); maximum gage height, 14.82 ft (from floodmark) Sep 13, 1978 (at datum then in use); no flow at times.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 17	0930	c18,600	14.01	Jun 14	2400	1,550	5.75
Oct 17	1445	6,370	9.07	Jun 20	0900	2,180	6.31
Oct 18	0215	10,500	11.01	Jun 20	1700	1,990	6.13
Oct 19	1300	1,390	5.59	Jun 21	1200	2,180	6.31
Nov 14	0200	1,250	5.45	Jun 25	1815	817	4.86
Mar 27	2115	2,570	6.66	Jul 11	2200	2,020	6.16
May 10	0430	2,360	6.48	Aug 24	0430	3,740	7.54
Jun 14	2215	1,940	6.09				

c From rating curve extended above 700 ft^3/s by using step-backwater technique.

08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX--Continued
(Flood-hydrograph partial-record station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Nov 1968 to Apr 1995, Oct 1997 to Jun 21, 1999 (discontinued).
BIOCHEMICAL DATA: Nov 1968 to Apr 1995, Oct 1997 to Jun 21, 1999 (discontinued).
BACTERIA DATA: Apr 1976 to Apr 1995, Oct 1997 to Jun 21, 1999 (discontinued).
PESTICIDE DATA: Nov 1968 to Apr 1995, Oct 1997 to Jun 21, 1999 (discontinued).
SEDIMENT DATA: Oct 1972 to Sep 1973.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
17...	1015	14500	86	7.2	--	--	--	15	3.9	--	--
MAR											
27...	2130	2210	84	8.5	14.0	9.9	96	>9	16	18000	52000
JUN											
21...	1245	1440	91	--	21.0	8.9	102	32	4.9	60000	56000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT											
17...	35	--	13	.63	1.2	.1	6	2.9	36	2.0	2.0
MAR											
27...	34	6	12	.81	2.4	.2	12	2.8	28	4.4	2.8
JUN											
21...	42	0	16	.79	1.7	.1	7	2.4	42	2.8	2.0

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
OCT											
17...	60	381	1220	.506	.041	4.9	4.3	.49	.53	4.3	1.39
MAR											
27...	36	304	1660	.929	.135	3.6	2.6	.44	.57	2.7	.932
JUN											
21...	68	113	82	.199	.036	1.2	1.0	.25	.29	1.0	.338

08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX--Continued
(Flood-hydrograph partial-record station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	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)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
OCT											
17...	.099	24	<.010	<4	2	8	<10	<1	14	22	35
MAR											
27...	.126	20	<.010	5	<1	3	<4.0	<1	13	16	30
JUN											
21...	.136	8.5	<.010	<4	2	4	<4.0	<1	5	5	7

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)
OCT											
17...	<.10	16	<4	<1	80	<.040	<.100	<.030	<.100	<1.00	<.100
MAR											
27...	<.10	8	<1	<1	120	<.040	<.100	<.030	<.100	<1.00	<.100
JUN											
21...	<.10	3	<1	<1	40	<.040	<.100	<.030	<.100	<1.00	<.100

DATE	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
OCT											
17...	<.100	<.100	<.100	<.100	<.040	<.030	E.070	<.100	<.090	<.020	<.600
MAR											
27...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
JUN											
21...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600

08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX--Continued
(Flood-hydrograph partial-record station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	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)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT										
17...	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<1.00	<2.00	<.100
MAR										
27...	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100
JUN										
21...	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100

08178050 SAN ANTONIO RIVER AT MITCHELL ST., SAN ANTONIO, TX

LOCATION.--Lat 29°23'34", long 98°29'40", Bexar County, Hydrologic Unit 12100301, on left bank 15 ft upstream from Mitchell Street Bridge in San Antonio, 0.2 mi upstream from San Pedro Creek, and 228.7 mi upstream from mouth.

DRAINAGE AREA.--42.4 mi^2. At low-flow, flow of river comes from intermittent spring flow and from artesian wells.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1992 to current year. Ground-water discharge into river is discussed by Petit and George, Texas Board of Water Engineers Bull. 5608, vol. 1 (1956, p. 45).

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

REMARKS.--Records poor. Since installation of gage in Oct 1992, at least 10% of contributing drainage area has been regulated by Olmos Reservoir (station 08177800, capacity, 14,240 acre-ft), about 10.6 mi upstream. Olmos Dam was completed in 1926 and rebuilt in 1980. Springs emerge intermittently from the Edwards and associated limestones along the Balcones Fault Zone upstream from station. No flow at times due to regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--From San Fernando Cathedral archives and old spanish records, flood of Jul 5, 1819, equaled or exceeded that of Sep 10, 1921.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	550	125	112	81	39	69	48	11	27	9.9	12
2	9.1	142	125	110	78	38	69	71	9.5	25	9.6	13
3	9.0	143	125	109	76	37	69	58	9.4	24	11	13
4	9.0	160	124	178	73	37	68	52	9.4	97	115	12
5	9.2	306	123	128	71	38	67	48	8.3	30	29	12
6	620	149	e124	112	68	38	63	43	9.6	29	12	13
7	8.4	251	e124	110	65	38	61	39	8.1	37	13	13
8	9.9	153	e125	81	63	44	60	36	9.1	29	11	16
9	12	157	126	68	60	39	57	34	9.1	25	13	14
10	11	143	168	107	58	40	56	561	9.2	259	9.5	14
11	11	138	134	109	56	37	52	34	10	56	8.6	12
12	9.3	147	128	98	54	42	49	20	75	203	8.6	12
13	11	205	127	103	54	102	50	41	19	36	7.3	12
14	12	577	126	99	52	42	57	37	2.4	35	7.7	12
15	12	174	124	99	52	42	49	33	327	33	7.6	12
16	11	158	123	98	50	40	49	30	19	31	7.5	12
17	e2750	184	121	96	48	39	48	28	18	29	8.0	13
18	e1230	142	122	94	44	45	45	257	2.8	30	8.1	13
19	e454	146	121	93	45	168	42	34	89	42	8.0	12
20	e377	118	120	93	44	59	41	31	630	32	8.5	12
21	154	137	119	94	43	49	38	30	717	36	8.7	11
22	141	138	117	91	43	49	37	27	109	32	8.7	11
23	133	136	119	89	44	50	34	32	53	29	8.9	11
24	130	134	116	89	43	48	31	31	31	26	585	12
25	134	130	118	87	43	49	199	25	49	23	21	12
26	133	127	119	86	43	48	95	249	46	20	14	12
27	141	128	118	85	43	357	46	130	35	18	14	12
28	131	128	117	86	40	650	44	21	35	16	13	12
29	139	128	116	85	---	72	47	18	32	15	56	12
30	133	127	119	84	---	69	47	14	29	13	29	16
31	135	---	112	83	---	69	---	13	---	11	11	---
TOTAL	7087.8	5456	3825	3056	1534	2514	1739	2125	2420.9	1348	1082.2	375
MEAN	229	182	123	98.6	54.8	81.1	58.0	68.5	80.7	43.5	34.9	12.5
MAX	2750	577	168	178	81	650	199	561	717	259	585	16
MIN	8.4	118	112	68	40	37	31	13	2.4	11	7.3	11
AC-FT	14060	10820	7590	6060	3040	4990	3450	4210	4800	2670	2150	744

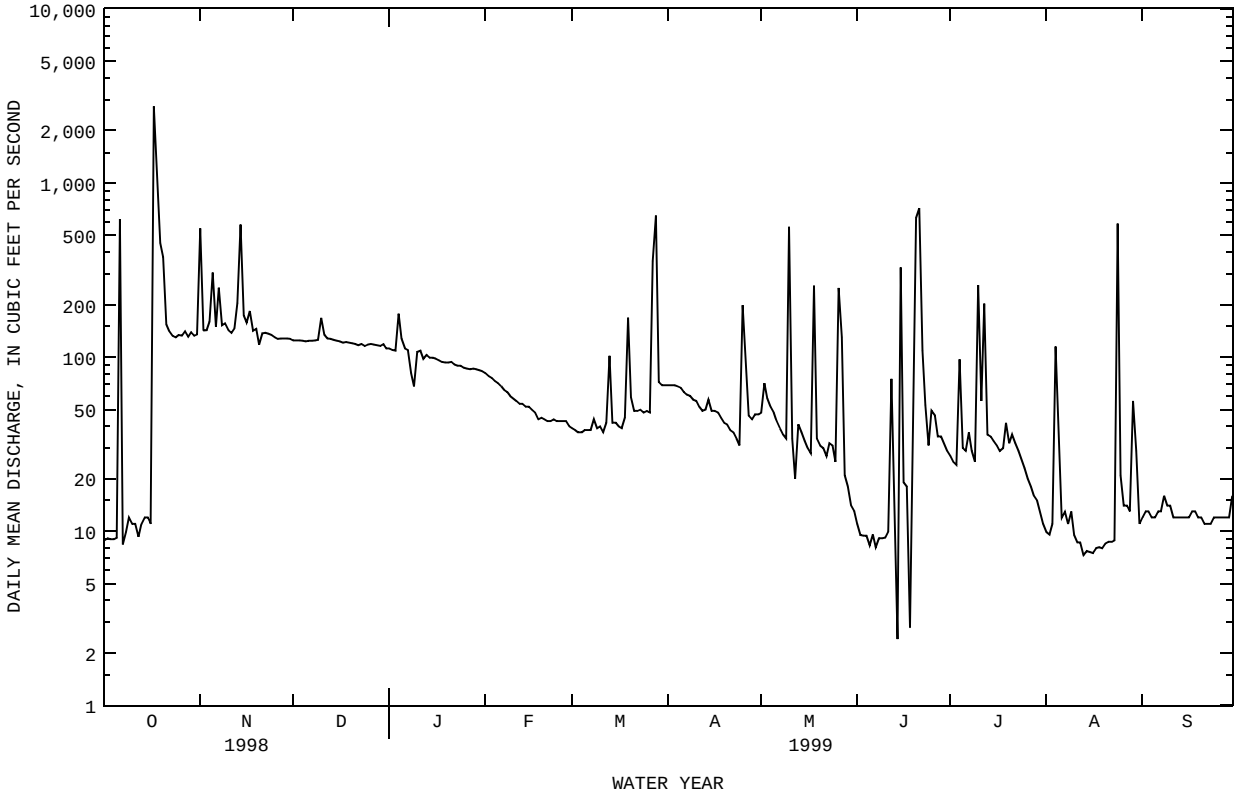
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1999, BY WATER YEAR (WY)

MEAN	95.9	77.6	75.0	68.0	68.2	75.8	58.8	104	79.5	32.9	32.5	33.4
MAX	229	203	209	185	209	172	149	369	228	115	103	58.5
(WY)	1999	1993	1993	1993	1993	1993	1993	1993	1993	1993	1998	1994
MIN	4.96	17.0	13.5	6.41	19.0	12.8	14.0	8.96	12.0	9.04	5.82	12.5
(WY)	1997	1996	1997	1997	1996	1996	1996	1998	1998	1998	1997	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1993 - 1999	
ANNUAL TOTAL	29789.5		32562.9			
ANNUAL MEAN	81.6		89.2		66.8	
HIGHEST ANNUAL MEAN					172	1993
LOWEST ANNUAL MEAN					16.4	1996
HIGHEST DAILY MEAN	2750	Oct 17	2750	Oct 17	2750	Oct 17 1998
LOWEST DAILY MEAN	3.4	May 30	2.4	Jun 14	.61	Nov 8 1997
ANNUAL SEVEN-DAY MINIMUM	6.2	May 20	7.7	Aug 13	3.0	Jan 1 1997
INSTANTANEOUS PEAK FLOW			i14300	Oct 17	i14300	Oct 17 1998
INSTANTANEOUS PEAK STAGE			a12.94	Oct 17	a12.94	Oct 17 1998
ANNUAL RUNOFF (AC-FT)	59090		64590		48410	
10 PERCENT EXCEEDS	151		143		166	
50 PERCENT EXCEEDS	27		47		26	
90 PERCENT EXCEEDS	7.8		11		6.5	

e Estimated
i From indirect measurement of peak flow.
a From floodmark.

08178050 SAN ANTONIO RIVER AT MITCHELL ST., SAN ANTONIO, TX--Continued



08178050 SAN ANTONIO RIVER AT MITCHELL ST. AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Dec 1991 to Jun 21, 1999 (discontinued).
BIOCHEMICAL DATA: Dec 1991 to Jun 21, 1999 (discontinued).
BACTERIA DATA: Dec 1991 to Jun 21, 1999 (discontinued).
PESTICIDE DATA: Dec 1991 to Jun 21, 1999 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
17...	1330	3830	111	7.5	--	--	--	<10	7.4	K89000	K110000
MAR											
27...	2200	2130	364	7.7	17.5	9.0	96	67	9.1	13000	K23000
MAY											
18...	0355	505	--	--	23.0	8.3	--	16	--	4200	1300
JUN											
21...	1335	847	150	--	22.0	8.1	95	29	3.4	32000	19000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT											
17...	42	2	14	1.4	2.8	.2	12	3.4	40	5.6	3.1
MAR											
27...	160	25	46	10	12	.4	14	2.1	130	14	21
MAY											
18...	190	28	58	11	9.9	.3	10	2.7	170	20	15
JUN											
21...	62	5	22	1.9	3.6	.2	11	2.9	57	6.2	5.2

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
OCT											
17...	70	284	1010	.573	.355	3.4	2.5	.42	.78	2.8	1.19
MAR											
27...	202	191	932	1.20	.126	3.2	1.9	.18	.30	2.0	.604
MAY											
18...	244	226	6	1.38	.133	--	--	.37	.50	E.05	.071
JUN											
21...	90	93	41	.290	<.020	.88	--	--	.35	.59	.246

DATE	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)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
OCT											
17...	.144	36	<.010	<4	4	6	<10	1	15	34	140
MAR											
27...	.062	24	<.010	5	<1	2	<4.0	<1	12	42	93
MAY											
18...	.090	3.2	<.010	<4	2	<1	<4.0	<1	<1	2	1
JUN											
21...	.143	9.3	<.010	5	3	2	<4.0	<1	3	6	9

08178050 SAN ANTONIO RIVER AT MITCHELL ST. AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)
OCT											
17...	<.10	14	<1	<1	260	<.040	<.100	<.030	<.100	<1.00	<.100
MAR											
27...	<.10	7	<1	<1	160	<.040	<.100	<.030	<.100	<1.00	<.100
MAY											
18...	<.10	<1	<1	<1	<40	<.040	<.100	<.030	<.100	<1.00	<.100
JUN											
21...	<.10	1	<1	<1	E30	<.040	<.100	<.030	<.100	<1.00	<.100

DATE	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)
OCT											
17...	<.100	<.100	<.100	<.100	<.040	<.030	.230	<.100	<.090	--	.020
MAR											
27...	<.100	<.100	.120	.170	<.040	<.030	E.090	<.100	<.090	--	<.020
MAY											
18...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.050	<.020
JUN											
21...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	--	<.020

DATE	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	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)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT											
17...	<.600	<.200	<.060	<.030	<.800	<.030	<.100	.040	<.100	<2.00	<.100
MAR											
27...	<.600	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100
MAY											
18...	<.600	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100
JUN											
21...	<.600	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100

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 mi^2. At low-flow, flow of river comes from intermittent springflow and from artesian wells.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 488.11 ft above sea level. Dec 20, 1986, to Aug 15, 1989, at site 0.2 mi downstream at Camino Coahuilteca crossing at same datum. 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 by Olmos Reservoir (station 08177800, capacity 14,240 acre-ft).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	738	131	117	89	48	149	57	22	43	22	40
2	18	232	132	114	85	48	149	99	21	42	21	40
3	17	197	132	112	83	46	150	97	19	41	21	41
4	13	193	132	e170	80	46	148	65	20	198	105	38
5	11	367	130	e125	79	49	147	61	19	86	88	37
6	770	157	131	112	75	49	140	53	20	47	25	39
7	33	301	127	111	71	47	141	48	19	43	24	59
8	20	204	124	99	69	52	142	46	16	53	23	46
9	17	185	125	64	66	50	139	41	16	40	24	31
10	15	165	193	108	62	50	138	628	15	455	21	34
11	13	148	146	109	62	50	133	61	17	300	21	33
12	11	148	131	105	56	50	131	32	17	207	20	33
13	14	241	127	109	57	179	131	47	99	57	17	33
14	20	682	126	103	54	52	144	43	9.1	48	18	30
15	21	208	125	104	53	50	132	41	603	48	17	29
16	21	159	124	104	51	45	131	38	48	45	18	29
17	e16000	172	124	103	50	45	130	36	23	42	18	28
18	e7120	148	125	101	47	51	128	334	16	43	19	30
19	e2370	148	124	100	47	237	123	44	273	49	17	26
20	e1720	125	123	101	47	89	122	38	918	58	19	25
21	e689	139	123	102	44	65	120	35	892	54	16	23
22	282	140	118	101	43	63	120	33	238	61	18	23
23	268	140	120	100	44	64	116	30	118	40	29	21
24	246	139	118	97	43	62	113	28	49	36	398	24
25	238	137	118	96	44	63	359	25	438	34	83	22
26	218	133	121	96	46	64	312	31	99	32	50	22
27	221	135	121	94	47	505	81	405	49	29	48	22
28	195	134	119	96	45	913	63	21	47	27	47	24
29	204	134	118	97	---	170	57	40	46	25	59	27
30	203	132	120	91	---	151	57	22	44	24	83	44
31	198	---	116	91	---	149	---	23	---	23	45	---
TOTAL	31215	6281	3944	3232	1639	3602	4146	2602	4230.1	2330	1434	953
MEAN	1007	209	127	104	58.5	116	138	83.9	141	75.2	46.3	31.8
MAX	16000	738	193	170	89	913	359	628	918	455	398	59
MIN	11	125	116	64	43	45	57	21	9.1	23	16	21
AC-FT	61910	12460	7820	6410	3250	7140	8220	5160	8390	4620	2840	1890

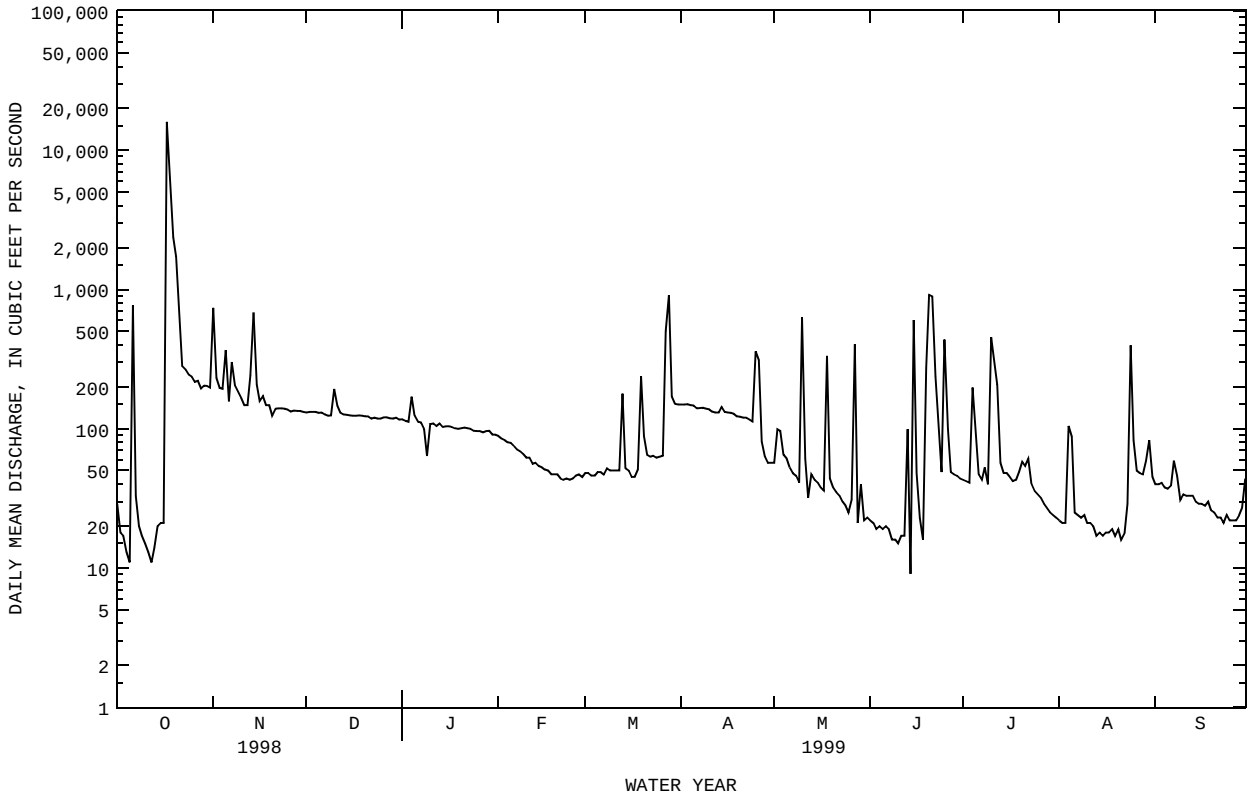
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

MEAN	168	97.2	145	111	139	129	124	229	188	134	76.9	86.1
MAX	1007	294	479	263	483	420	345	937	622	692	263	262
(WY)	1999	1993	1992	1993	1992	1992	1992	1992	1987	1990	1992	1992
MIN	10.5	21.7	19.6	12.2	29.3	18.2	25.8	12.5	15.6	12.0	18.0	25.6
(WY)	1997	1992	1991	1997	1996	1996	1996	1998	1998	1998	1989	1989

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	60775.8		65608.1			
ANNUAL MEAN	167		180		136	
HIGHEST ANNUAL MEAN					353	1992
LOWEST ANNUAL MEAN					30.6	1996
HIGHEST DAILY MEAN	16000	Oct 17	16000	Oct 17	16000	Oct 17 1998
LOWEST DAILY MEAN	5.0	May 30	9.1	Jun 14	2.2	Mar 30 1997
ANNUAL SEVEN-DAY MINIMUM	7.1	May 20	16	Oct 8	4.8	Jul 16 1996
INSTANTANEOUS PEAK FLOW			i79400	Oct 17	i79400	Oct 17 1998
INSTANTANEOUS PEAK STAGE			a32.57	Oct 17	a32.57	Oct 17 1998
ANNUAL RUNOFF (AC-FT)	120500		130100		98320	
10 PERCENT EXCEEDS	219		207		264	
50 PERCENT EXCEEDS	45		63		43	
90 PERCENT EXCEEDS	9.0		21		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



08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Dec 1986 to current year.
BIOCHEMICAL DATA: Mar 1987 to Sep 1998.
PESTICIDE DATA: Dec 1992 to Sep 1998.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Dec 1986 to Aug 1988, Mar 1993 to current year.
PH: Dec 1986 to Aug 1988, Mar 1993 to current year.
WATER TEMPERATURE: Dec 1986 to Aug 1988, Mar 1993 to current year.
DISSOLVED OXYGEN: Dec 1986 to Aug 1988, Mar 1993 to current year.

INSTRUMENTATION.--Water-quality monitor Dec 1986 to Aug 1988, Mar 1993 to current year.

REMARKS.--Interruptions in the record were caused by malfunctions of the instrument. 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. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,870 microsiemens, Aug 20, 1996; minimum, 102 microsiemens, Oct 17, 1998.
PH: Maximum, 9.2 units, May 27, 1996; minimum, 7.0 units, Jun 30, Jul 1, 1995.
WATER TEMPERATURE: Maximum, 36.5°C, Aug 12, 1996; minimum, 2.0°C, Jan14, 1997.
DISSOLVED OXYGEN: Maximum, 20.1 mg/L, Feb 3, 1996; minimum, 0.5 mg/L, May 21, Jul 21, 1988.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 986 microsiemens, Aug 23; minimum, 102 microsiemens, Oct 17.
PH: Maximum, 8.8 units, Oct 17, Jul 10; minimum, 7.3 units, May 28.
WATER TEMPERATURE: Maximum, 35.1°C, Aug 14; minimum, 12.5°C, Dec 24.
DISSOLVED OXYGEN: Maximum, 15.7 mg/L, May 7; minimum, 1.7 mg/L, Aug 23.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	646	597	622	---	---	e385	584	546	557	547	531	540
2	657	628	645	---	---	e465	601	544	568	542	520	531
3	667	630	651	---	---	e480	565	537	549	553	501	525
4	666	629	650	---	---	e500	554	531	545	548	508	537
5	665	635	654	---	---	e455	560	533	548	567	508	541
6	656	227	329	---	---	e510	552	529	545	534	519	527
7	397	313	360	---	---	e475	551	535	545	557	521	534
8	492	397	454	---	---	e520	557	489	536	545	501	528
9	564	490	534	---	---	e555	539	516	524	559	510	533
10	587	564	582	---	---	e565	691	511	553	583	519	546
11	587	451	530	---	---	e565	567	517	543	535	505	519
12	477	441	464	---	---	e565	540	517	531	545	501	513
13	488	450	474	---	---	e565	535	516	528	560	501	522
14	508	473	493	---	---	e330	544	517	528	520	496	510
15	530	490	514	---	---	e460	546	499	528	524	489	508
16	559	520	542	---	---	e515	541	518	530	549	488	506
17	657	102	321	---	---	e545	580	506	535	541	481	508
18	255	120	207	---	---	e565	551	517	541	538	472	509
19	261	200	237	---	---	e568	547	516	538	534	499	515
20	296	241	265	580	323	563	544	530	538	525	481	508
21	---	---	e315	662	554	599	552	528	540	520	474	492
22	---	---	e365	575	538	562	566	537	551	523	477	495
23	---	---	e400	574	549	565	573	549	567	533	484	503
24	---	---	e435	573	546	565	556	546	549	527	478	499
25	---	---	e470	575	557	565	553	543	548	505	482	494
26	---	---	e490	571	546	557	553	537	545	534	487	503
27	---	---	e515	559	546	550	550	516	542	516	487	500
28	---	---	e530	561	543	550	551	524	538	538	495	507
29	---	---	e540	559	545	553	548	519	538	528	491	514
30	---	---	e545	560	546	552	545	523	534	518	481	504
31	---	---	e550	---	---	---	565	531	540	525	473	498
MONTH	---	---	474	---	---	526	691	489	542	583	472	515

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	576	460	502	581	527	556	542	462	493	536	483	511
2	521	479	502	597	539	564	564	536	549	917	439	540
3	512	475	496	608	505	568	566	481	550	535	472	503
4	518	474	499	567	522	554	564	507	544	546	490	515
5	671	494	534	592	533	565	562	458	527	577	479	525
6	540	484	523	601	525	567	556	466	521	547	435	518
7	535	496	518	586	502	562	549	480	521	556	284	474
8	682	502	540	588	526	570	540	482	514	518	274	331
9	581	513	545	601	523	575	531	480	506	300	218	288
10	548	506	526	707	524	603	536	479	511	551	238	328
11	546	487	521	612	517	582	537	466	508	323	159	269
12	552	513	536	587	524	572	532	470	514	---	---	e280
13	544	493	519	937	492	568	565	494	537	---	---	e360
14	537	489	516	556	525	542	582	518	546	---	---	e380
15	537	492	516	585	500	529	560	502	534	---	---	e440
16	550	485	516	568	507	540	551	469	524	---	---	e460
17	561	484	536	578	477	557	560	495	528	---	---	e480
18	559	489	525	596	536	565	548	470	521	535	285	380
19	556	487	523	857	513	556	547	472	512	437	335	414
20	563	507	544	559	466	498	571	440	509	457	350	432
21	563	504	540	527	487	506	515	468	493	435	377	414
22	562	466	535	528	480	502	547	470	506	446	401	424
23	563	506	540	544	479	518	556	492	521	485	426	448
24	589	497	544	555	486	530	604	520	553	492	434	470
25	598	503	563	559	474	528	671	374	471	509	453	487
26	608	520	563	544	420	504	559	171	336	530	424	494
27	591	524	568	533	195	484	435	331	378	507	231	273
28	596	493	559	291	194	225	450	422	439	351	314	335
29	---	---	---	364	255	311	468	431	451	451	351	397
30	---	---	---	379	345	360	513	468	484	423	343	379
31	---	---	---	462	368	400	---	---	---	403	358	383
MONTH	682	460	530	937	194	518	671	171	503	---	---	417

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	441	385	413	527	467	496	596	520	555	414	374	393
2	461	390	420	520	474	499	585	520	563	465	401	432
3	456	405	437	528	483	509	610	516	557	513	442	475
4	483	428	462	893	278	480	823	237	534	521	472	491
5	515	451	489	390	287	344	489	341	452	537	477	496
6	535	469	503	494	390	429	495	456	477	528	490	508
7	537	453	503	509	459	492	542	483	506	551	504	522
8	544	463	507	531	463	495	576	511	547	561	521	541
9	559	483	516	515	459	491	597	513	558	591	261	497
10	550	490	528	540	167	438	607	530	568	548	470	511
11	555	491	530	404	175	258	611	521	565	548	475	514
12	567	495	536	382	179	312	599	515	558	596	499	533
13	771	367	588	437	380	407	673	514	564	610	538	574
14	632	450	541	397	352	381	624	520	567	614	521	564
15	623	214	356	414	369	393	598	528	565	595	522	566
16	363	291	319	441	386	420	592	532	566	593	497	555
17	399	358	380	472	407	450	612	513	570	569	512	544
18	461	397	434	502	443	478	646	542	573	585	501	542
19	477	185	407	514	469	499	634	511	574	572	507	545
20	487	137	182	534	445	504	632	553	590	566	510	543
21	203	118	165	609	476	528	645	570	608	598	457	545
22	314	180	214	588	466	518	664	526	614	563	513	540
23	303	208	257	524	457	492	986	568	703	562	479	543
24	378	303	338	556	408	513	691	183	411	722	546	612
25	406	266	381	618	460	545	305	184	254	630	551	589
26	321	264	290	613	491	528	330	247	280	611	555	580
27	444	314	367	558	507	533	424	330	384	614	558	581
28	482	427	452	576	476	537	481	422	450	599	551	579
29	524	449	480	578	527	550	498	441	468	583	516	568
30	506	448	480	580	530	560	469	342	385	590	445	562
31	---	---	---	608	518	553	375	347	360	---	---	---
MONTH	771	118	416	893	167	472	986	183	514	722	261	535

e Estimated

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	7.7	7.9	---	---	---	8.1	8.0	8.1	8.0	7.9	8.0
2	8.2	7.7	7.9	---	---	---	8.1	8.0	8.1	8.1	8.0	8.0
3	8.2	7.8	8.0	---	---	---	8.1	8.0	8.1	8.2	8.1	8.1
4	8.2	7.7	7.9	---	---	---	8.1	8.0	8.1	8.2	8.1	8.1
5	8.2	7.7	7.9	---	---	---	8.1	8.0	8.1	8.2	8.1	8.1
6	8.6	7.7	8.0	---	---	---	8.1	8.1	8.1	8.1	7.9	8.0
7	7.7	7.5	7.6	---	---	---	8.1	8.0	8.1	8.0	7.9	8.0
8	7.8	7.4	7.6	---	---	---	8.2	8.1	8.1	8.0	7.9	8.0
9	8.1	7.7	7.9	---	---	---	8.2	8.1	8.1	8.1	7.9	8.0
10	8.3	7.8	8.0	---	---	---	8.1	8.0	8.0	8.1	8.0	8.0
11	8.4	7.8	8.0	---	---	---	8.1	8.0	8.0	8.1	7.9	8.0
12	8.3	7.7	7.9	---	---	---	8.2	8.1	8.1	8.1	7.9	8.0
13	8.3	7.7	7.9	---	---	---	8.2	8.1	8.1	8.0	7.9	8.0
14	8.3	7.7	8.0	---	---	---	8.2	8.1	8.1	8.1	7.9	8.0
15	8.4	7.8	8.0	---	---	---	8.2	8.1	8.1	8.1	7.9	8.0
16	8.3	7.8	8.0	---	---	---	8.2	8.0	8.1	8.0	7.9	7.9
17	8.8	7.9	8.2	---	---	---	8.1	8.0	8.0	8.0	7.8	7.9
18	8.5	7.6	7.9	---	---	---	8.1	8.0	8.0	8.0	7.8	7.9
19	8.0	7.7	7.8	---	---	---	8.1	8.0	8.0	8.0	7.8	7.9
20	7.8	7.7	7.7	8.1	8.0	8.0	8.1	8.0	8.0	8.0	7.8	7.9
21	7.7	7.7	7.7	8.1	8.0	8.0	8.0	7.9	8.0	8.0	7.8	7.9
22	7.8	7.6	7.7	8.1	8.0	8.1	8.1	8.0	8.0	8.0	7.8	7.9
23	---	---	---	8.1	8.0	8.1	8.3	8.2	8.2	8.0	7.9	7.9
24	---	---	---	8.1	8.0	8.0	8.3	8.2	8.3	8.0	7.8	7.9
25	---	---	---	8.1	8.0	8.0	8.1	8.0	8.1	8.0	7.8	7.9
26	---	---	---	8.1	7.9	8.0	8.1	8.0	8.0	8.0	7.8	7.9
27	---	---	---	8.1	8.0	8.0	8.1	8.0	8.0	8.0	7.8	7.9
28	---	---	---	8.1	8.0	8.1	8.1	8.0	8.0	8.0	7.8	7.9
29	---	---	---	8.1	8.0	8.1	8.1	7.9	8.0	8.0	7.8	7.9
30	---	---	---	8.1	8.0	8.1	8.1	7.9	8.0	8.0	7.9	7.9
31	---	---	---	---	---	---	8.0	7.9	8.0	8.0	7.8	7.9
MONTH	---	---	---	---	---	---	8.3	7.9	8.1	8.2	7.8	8.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.0	7.8	7.9	8.0	7.8	7.9	8.1	7.8	7.9	8.2	7.8	8.0
2	8.0	7.8	7.9	8.0	7.8	7.9	8.2	7.9	8.0	8.1	7.9	8.0
3	8.0	7.8	7.9	8.0	7.8	7.9	8.2	8.0	8.1	8.0	7.8	7.9
4	8.0	7.8	7.9	8.0	7.8	7.9	8.2	7.9	8.1	8.1	7.9	8.0
5	8.0	7.8	7.9	8.0	7.8	7.9	8.3	7.9	8.1	8.2	7.8	8.0
6	8.0	7.8	7.9	7.9	7.8	7.8	8.3	7.9	8.1	8.2	7.8	8.0
7	8.0	7.8	7.9	7.9	7.8	7.8	8.2	7.9	8.0	8.2	7.8	8.0
8	8.0	7.8	7.9	7.9	7.8	7.9	8.2	7.9	8.0	8.2	7.8	8.0
9	8.0	7.8	7.9	8.0	7.8	7.9	8.2	7.8	8.0	8.2	7.8	8.0
10	8.0	7.8	7.9	7.9	7.8	7.8	8.1	7.8	7.9	8.4	7.7	7.9
11	8.0	7.8	7.9	8.0	7.8	7.8	8.1	7.8	7.9	8.1	7.6	7.7
12	8.1	7.9	8.0	8.0	7.8	7.9	8.1	7.8	8.0	---	---	---
13	8.1	7.9	8.0	7.9	7.6	7.8	8.1	7.8	8.0	---	---	---
14	8.1	7.9	8.0	8.0	7.7	7.9	8.1	7.9	8.0	---	---	---
15	8.1	7.9	8.0	8.0	7.7	7.9	8.2	7.8	8.0	---	---	---
16	8.0	7.9	7.9	8.1	7.7	7.9	8.2	7.9	8.0	---	---	---
17	8.1	7.9	8.0	8.1	7.8	7.9	8.1	7.9	8.0	---	---	---
18	8.1	7.9	8.0	8.0	7.9	7.9	8.1	7.9	8.0	8.0	7.7	7.8
19	8.1	7.9	8.0	8.0	7.7	7.9	8.1	7.9	8.0	8.0	7.6	7.8
20	8.1	7.9	8.0	8.0	7.7	7.8	8.1	7.8	7.9	8.1	7.6	7.8
21	8.1	7.9	8.0	8.0	7.7	7.8	8.1	7.8	7.9	8.3	7.5	7.9
22	8.3	7.9	8.2	8.1	7.7	7.9	8.1	7.9	8.0	8.3	7.5	7.9
23	8.3	8.0	8.2	8.1	7.8	7.9	8.1	7.9	7.9	8.2	7.6	7.9
24	8.3	7.9	8.2	8.1	7.8	7.9	8.0	7.8	7.9	8.2	7.6	7.8
25	8.2	7.9	8.1	8.1	7.8	7.9	8.0	7.8	7.9	8.1	7.5	7.8
26	8.0	7.8	7.9	8.1	7.8	8.0	7.9	7.7	7.8	8.1	7.5	7.8
27	8.0	7.8	7.8	8.6	7.8	7.9	7.9	7.6	7.7	8.4	7.4	7.7
28	8.0	7.8	7.9	8.7	7.7	7.9	8.0	7.7	7.8	7.9	7.3	7.5
29	---	---	---	7.8	7.6	7.7	8.1	7.7	7.8	8.1	7.4	7.7
30	---	---	---	7.9	7.7	7.8	8.2	7.7	7.9	8.0	7.4	7.6
31	---	---	---	8.0	7.7	7.8	---	---	---	8.4	7.4	7.8
MONTH	8.3	7.8	8.0	8.7	7.6	7.9	8.3	7.6	8.0	---	---	---

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.5	7.5	8.0	8.3	7.8	8.0	8.0	7.7	7.8	8.4	7.6	8.0
2	8.5	7.5	8.0	8.4	7.8	8.0	8.0	7.7	7.8	8.4	7.6	8.0
3	8.4	7.5	7.9	8.3	7.8	8.0	8.0	7.6	7.8	8.2	7.6	7.9
4	8.3	7.5	7.9	8.7	7.7	8.0	8.1	7.6	7.8	8.2	7.6	7.9
5	8.4	7.6	7.9	8.1	7.6	7.9	7.9	7.5	7.6	8.3	7.6	7.9
6	8.3	7.6	7.9	8.3	7.7	8.0	8.1	7.6	7.8	8.2	7.6	7.9
7	8.4	7.6	7.9	8.3	7.8	8.0	8.2	7.6	7.9	8.1	7.6	7.8
8	8.3	7.5	7.9	8.2	7.8	8.0	8.2	7.6	7.9	8.1	7.6	7.8
9	8.4	7.6	7.9	8.3	7.7	8.0	8.1	7.7	7.9	8.1	7.6	7.9
10	8.4	7.6	7.9	8.8	7.7	8.0	8.2	7.7	7.9	8.2	7.6	7.8
11	8.4	7.6	7.9	8.3	7.7	7.9	8.2	7.7	7.9	8.2	7.6	7.8
12	8.4	7.6	7.9	7.9	7.7	7.8	8.1	7.7	7.9	8.1	7.6	7.9
13	8.1	7.5	7.6	8.0	7.7	7.8	8.1	7.6	7.9	8.2	7.7	7.9
14	8.3	7.4	7.8	8.2	7.7	7.9	8.1	7.6	7.8	8.1	7.7	7.9
15	8.5	7.5	7.8	8.4	7.7	8.0	8.1	7.6	7.9	8.0	7.6	7.8
16	7.8	7.6	7.6	8.4	7.7	8.0	8.1	7.6	7.8	8.1	7.7	7.9
17	8.0	7.5	7.7	8.2	7.7	8.0	8.1	7.6	7.8	8.2	7.7	7.9
18	8.1	7.6	7.8	8.2	7.7	7.9	8.0	7.6	7.8	8.2	7.7	7.9
19	8.3	7.6	7.9	8.2	7.8	7.9	8.1	7.6	7.8	8.2	7.7	7.9
20	8.0	7.6	7.8	8.1	7.8	7.9	8.0	7.6	7.8	8.1	7.7	7.9
21	8.2	7.7	7.8	8.1	7.7	7.8	8.0	7.6	7.8	8.3	7.7	8.0
22	7.9	7.6	7.7	8.0	7.8	7.9	7.9	7.6	7.8	8.2	7.8	8.0
23	7.8	7.6	7.7	8.1	7.7	7.9	8.0	7.6	7.7	8.2	7.8	8.0
24	8.0	7.6	7.8	8.1	7.7	7.8	7.9	7.6	7.8	8.1	7.8	8.0
25	8.2	7.7	7.9	8.0	7.7	7.8	7.8	7.6	7.7	8.1	7.8	7.9
26	8.1	7.6	7.8	8.0	7.7	7.8	8.0	7.5	7.7	8.1	7.7	7.9
27	8.5	7.7	8.0	8.0	7.7	7.8	8.1	7.5	7.8	8.3	7.8	8.0
28	8.5	7.8	8.1	8.0	7.7	7.8	8.2	7.6	7.9	8.3	7.9	8.1
29	8.4	7.8	8.1	8.0	7.7	7.8	8.3	7.6	7.9	8.4	7.9	8.1
30	8.4	7.8	8.1	8.0	7.7	7.8	8.3	7.7	8.0	8.1	7.7	7.9
31	---	---	---	8.1	7.7	7.8	8.5	7.6	8.0	---	---	---
MONTH	8.5	7.4	7.9	8.8	7.6	7.9	8.5	7.5	7.8	8.4	7.6	7.9

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	32.5	28.0	30.1	---	---	---	22.9	21.1	21.8	20.4	19.1	19.7
2	31.1	28.0	29.3	---	---	---	23.2	21.4	22.3	20.3	16.3	17.9
3	31.6	27.3	29.1	---	---	---	22.9	21.9	22.5	16.5	14.5	15.5
4	31.3	27.5	29.1	---	---	---	23.8	22.4	22.9	15.5	14.5	15.0
5	29.9	27.5	28.4	---	---	---	23.5	22.6	23.1	16.5	14.0	15.0
6	28.1	20.7	22.0	---	---	---	23.8	22.3	22.9	18.8	15.8	17.4
7	24.1	19.2	21.5	---	---	---	22.7	20.1	21.7	20.1	18.1	19.0
8	25.4	19.8	22.4	---	---	---	20.1	17.6	18.4	21.4	18.8	20.3
9	26.0	20.5	23.1	---	---	---	18.2	17.2	17.5	18.8	13.7	15.9
10	26.2	20.9	23.4	---	---	---	17.3	16.2	16.8	17.0	13.7	15.5
11	27.0	21.5	24.0	---	---	---	16.2	15.1	15.6	18.1	15.6	17.0
12	28.5	23.5	25.5	---	---	---	17.3	14.9	16.0	19.7	17.3	18.5
13	28.5	24.3	26.1	---	---	---	18.6	15.9	17.4	20.6	18.9	19.5
14	28.0	24.4	26.0	---	---	---	18.8	16.6	17.9	19.1	16.7	17.7
15	27.5	23.2	25.3	---	---	---	18.9	16.7	18.0	18.5	16.2	17.2
16	27.6	24.2	25.7	---	---	---	19.0	16.7	18.1	19.3	17.0	18.0
17	26.0	23.5	24.5	---	---	---	18.7	17.2	18.1	20.5	18.6	19.3
18	24.3	22.3	23.0	---	---	---	18.6	17.5	18.0	19.5	17.6	18.7
19	22.5	21.0	21.5	---	---	---	20.3	17.5	18.9	20.8	18.6	19.5
20	21.5	21.0	21.5	23.8	20.5	22.2	20.0	18.5	19.2	21.6	19.7	20.5
21	21.0	19.5	20.0	20.8	19.4	20.2	22.1	19.6	21.0	23.0	20.7	21.6
22	22.5	19.5	21.0	21.7	19.1	20.6	19.6	13.5	15.4	21.7	17.0	19.7
23	---	---	---	21.9	20.7	21.4	14.0	13.0	13.5	18.9	15.8	17.4
24	---	---	---	22.9	20.7	21.9	13.5	12.5	13.0	19.8	17.4	18.5
25	---	---	---	24.0	21.9	23.0	14.1	12.9	13.5	20.8	18.2	19.3
26	---	---	---	23.7	21.7	22.9	16.2	13.4	14.8	21.5	19.5	20.3
27	---	---	---	23.6	22.4	23.1	18.4	15.3	16.8	21.2	19.4	20.1
28	---	---	---	23.1	22.0	22.7	18.6	16.6	17.8	21.5	20.3	21.0
29	---	---	---	23.5	22.1	22.9	18.9	16.8	17.9	22.7	19.3	21.3
30	---	---	---	24.3	22.6	23.3	18.5	16.9	17.9	19.4	17.5	18.5
31	---	---	---	---	---	---	19.8	18.5	19.2	19.9	17.7	18.7
MONTH	---	---	---	---	---	---	23.8	12.5	18.3	23.0	13.7	18.5

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	20.3	18.5	19.3	23.7	18.0	20.5	20.9	19.1	20.1	24.5	22.3	23.7
2	20.8	19.1	19.6	24.1	19.7	21.4	22.7	20.7	21.9	22.8	21.7	22.2
3	21.1	19.1	19.8	21.6	17.6	19.3	26.2	22.4	23.8	25.1	22.6	23.8
4	20.8	19.4	20.0	19.2	16.7	18.0	23.3	22.2	22.9	28.6	23.9	25.8
5	21.5	19.4	20.7	22.1	18.5	20.0	25.6	22.1	23.3	29.1	25.1	26.6
6	23.2	21.0	21.9	24.7	20.4	22.0	25.0	21.5	22.9	28.5	23.3	25.6
7	24.5	21.9	22.9	21.1	18.8	19.8	25.7	22.0	23.6	28.2	22.8	25.2
8	23.1	22.1	22.6	23.1	18.8	20.5	27.1	23.4	24.9	29.1	23.3	25.9
9	24.8	22.2	23.1	23.2	19.7	21.0	28.4	24.6	26.0	28.1	25.4	26.4
10	24.6	22.5	23.4	22.4	20.3	21.2	28.8	24.9	26.3	26.0	21.8	23.4
11	22.6	17.1	21.1	24.3	21.1	22.3	27.7	23.7	25.4	24.3	21.4	22.6
12	17.6	14.8	16.0	23.7	21.6	22.6	25.8	24.0	24.8	---	---	---
13	19.6	14.9	16.7	21.6	17.5	19.5	25.8	23.3	24.3	---	---	---
14	19.8	15.9	17.3	19.6	15.9	17.3	26.4	22.7	24.3	---	---	---
15	20.3	16.2	17.8	20.4	15.0	17.4	24.2	20.1	22.0	---	---	---
16	19.6	17.7	18.6	21.2	16.3	18.5	22.3	18.8	20.2	---	---	---
17	21.5	17.5	19.1	21.2	18.2	19.5	23.5	17.5	20.1	---	---	---
18	22.5	17.7	19.6	20.5	19.8	20.1	24.8	19.0	21.6	27.2	23.4	25.1
19	20.7	17.5	18.9	20.4	19.0	19.7	26.8	20.6	23.3	29.2	24.4	26.5
20	21.6	18.0	19.2	22.7	18.8	20.5	27.7	22.2	24.5	29.7	25.4	27.1
21	20.6	16.7	18.3	23.5	19.0	20.9	25.1	23.1	23.8	30.3	25.8	27.5
22	19.5	15.5	17.0	23.7	19.4	21.2	26.8	22.6	24.2	31.1	26.3	28.3
23	20.5	16.0	18.0	24.2	20.5	22.1	28.5	24.2	26.0	32.3	26.6	29.0
24	21.0	17.5	19.0	23.3	21.6	22.6	27.4	25.5	26.3	32.3	26.7	29.3
25	21.6	18.6	19.9	22.7	20.1	21.3	25.7	23.2	24.6	31.6	26.9	29.0
26	21.9	20.1	20.7	21.5	19.4	20.2	24.8	21.9	23.7	31.4	26.7	28.5
27	24.7	20.2	21.9	19.4	16.6	19.0	28.7	23.8	25.8	28.1	22.9	25.3
28	23.2	18.9	20.5	19.1	16.1	17.6	29.5	25.3	26.9	30.6	25.4	27.5
29	---	---	---	20.4	17.4	18.6	28.7	25.2	26.6	29.7	25.5	27.3
30	---	---	---	20.9	18.6	19.4	27.0	24.5	25.7	31.6	26.1	28.4
31	---	---	---	19.8	18.9	19.3	---	---	---	32.9	27.2	29.6
MONTH	24.8	14.8	19.7	24.7	15.0	20.1	29.5	17.5	24.0	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	33.5	27.5	30.0	32.2	27.7	29.5	34.0	28.2	30.5	33.1	27.8	30.3
2	32.9	27.5	29.7	32.3	27.8	29.6	34.4	27.8	30.9	33.8	27.8	30.6
3	31.2	26.9	28.7	31.1	28.1	29.3	34.1	28.7	31.3	33.5	28.2	30.4
4	32.0	26.7	28.8	31.2	27.8	28.7	34.1	28.7	30.8	32.5	28.1	30.0
5	32.1	26.3	28.7	31.4	27.1	29.0	32.7	27.4	29.7	33.6	28.0	30.1
6	32.1	26.7	29.0	34.0	27.9	30.5	34.1	28.1	30.8	31.7	27.3	29.2
7	33.3	27.0	29.6	33.6	29.0	31.0	34.7	28.7	31.3	31.7	27.3	29.1
8	33.2	27.2	29.7	33.5	29.3	31.0	34.8	28.7	31.4	31.7	27.2	29.4
9	33.1	27.2	29.6	33.6	28.4	30.5	34.9	28.8	31.6	34.1	27.3	30.3
10	33.5	27.2	29.8	32.9	27.1	29.8	34.8	28.5	31.4	33.3	27.6	30.3
11	33.4	27.5	30.0	29.5	26.9	27.9	34.4	28.5	31.1	32.9	27.6	29.8
12	34.2	27.7	30.4	31.1	26.3	28.5	34.4	28.2	30.9	32.5	27.1	29.6
13	31.5	27.5	29.2	32.9	28.7	30.3	34.6	28.0	31.0	30.8	26.9	28.7
14	33.6	26.4	29.4	32.4	28.4	29.9	35.1	28.1	31.4	31.2	25.4	28.2
15	28.6	25.2	26.8	31.9	27.4	29.3	34.9	28.4	31.5	31.4	26.3	28.7
16	29.0	25.4	26.9	32.6	27.4	29.5	34.5	29.0	31.6	31.2	25.2	27.9
17	30.6	25.6	27.9	30.6	28.0	29.0	34.4	28.6	31.3	31.1	24.1	27.4
18	31.2	25.8	28.4	32.0	27.3	29.1	34.5	28.8	31.6	31.8	25.0	28.2
19	31.6	26.9	28.4	32.6	27.8	29.8	35.0	28.5	31.5	31.8	25.1	28.4
20	27.0	24.9	25.8	32.0	28.6	29.8	34.3	28.3	31.3	32.4	25.1	28.6
21	25.5	24.7	25.0	31.3	28.0	28.9	34.7	28.3	31.1	29.9	25.5	27.6
22	28.5	24.6	26.2	31.7	27.7	29.2	31.6	28.3	30.1	28.9	22.9	25.5
23	30.0	26.0	27.7	33.4	28.0	30.1	29.8	27.8	28.5	28.3	20.4	24.3
24	31.8	27.5	29.2	33.6	27.9	30.4	28.0	25.6	27.1	28.8	21.5	25.0
25	32.0	28.3	29.7	33.8	27.9	30.4	30.5	25.1	27.4	28.0	23.6	25.4
26	30.7	27.8	29.1	33.7	28.5	30.5	33.1	26.6	29.5	30.2	24.3	26.8
27	31.6	28.1	29.5	33.8	28.4	30.5	34.8	28.1	31.1	30.5	25.0	27.5
28	33.0	28.3	30.2	33.9	28.5	30.7	34.9	29.1	31.7	31.3	25.4	28.0
29	31.9	28.8	29.8	34.3	28.2	30.8	34.6	28.8	31.2	28.6	22.7	24.5
30	32.7	27.9	29.8	34.2	28.2	30.7	32.9	28.7	30.7	25.6	20.5	22.9
31	---	---	---	34.2	28.2	30.7	32.9	27.4	29.9	---	---	---
MONTH	34.2	24.6	28.8	34.3	26.3	29.8	35.1	25.1	30.7	34.1	20.4	28.1

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.6	---	6.7	---	---	---	9.9	8.1	8.7	10.8	8.4	9.3
2	10.7	4.5	6.7	---	---	---	10.2	7.8	8.6	11.9	8.4	10.0
3	10.5	4.5	6.7	---	---	---	9.6	7.7	8.2	12.5	9.5	10.6
4	10.6	3.9	6.2	---	---	---	9.7	7.3	8.2	12.4	9.9	10.7
5	9.8	3.8	6.0	---	---	---	9.6	7.7	8.2	12.2	9.8	10.7
6	8.6	3.6	7.4	---	---	---	10.0	7.7	8.3	12.0	9.1	10.1
7	6.8	4.8	5.9	---	---	---	9.7	7.8	8.4	11.5	8.7	9.6
8	7.5	5.0	6.1	---	---	---	10.8	8.5	9.4	11.5	8.4	9.3
9	8.1	5.7	6.6	---	---	---	10.5	8.9	9.4	12.5	8.5	10.3
10	9.5	5.7	7.1	---	---	---	9.5	9.1	9.3	12.1	9.6	10.5
11	10.5	5.6	7.4	---	---	---	10.0	9.2	9.6	12.0	9.0	10.1
12	10.1	4.6	6.8	---	---	---	11.0	9.2	10.0	11.1	8.7	9.4
13	9.7	4.3	6.1	---	---	---	11.0	8.9	9.7	11.2	8.4	9.3
14	9.3	4.0	6.0	---	---	---	11.0	8.8	9.6	11.8	8.6	9.8
15	10.1	4.4	6.5	---	---	---	11.3	8.9	9.7	11.7	8.9	9.9
16	10.2	4.2	6.3	---	---	---	11.5	8.8	9.7	11.7	8.8	9.8
17	7.3	4.4	6.1	---	---	---	11.8	8.8	9.8	11.4	8.5	9.5
18	8.1	6.4	7.6	---	---	---	10.6	8.9	9.4	11.9	8.5	9.8
19	8.8	7.4	8.3	---	---	---	11.4	8.7	9.7	11.6	8.5	9.5
20	8.6	7.6	8.3	9.3	7.4	8.1	10.8	8.6	9.2	11.2	8.1	9.1
21	8.7	6.1	7.9	9.8	7.5	8.4	10.6	8.3	9.0	11.0	7.8	8.9
22	8.6	3.5	6.3	9.7	7.8	8.5	11.5	8.7	10.1	11.1	7.7	9.0
23	---	---	---	9.2	7.7	8.2	11.9	10.1	10.7	12.0	8.7	9.9
24	---	---	---	9.3	7.5	8.2	12.4	10.3	11.1	11.9	8.5	9.6
25	---	---	---	9.2	7.5	8.1	12.2	10.3	11.0	11.4	8.3	9.3
26	---	---	---	9.3	7.6	8.1	12.2	9.7	10.7	11.0	7.9	8.9
27	---	---	---	9.2	7.6	8.0	12.0	9.1	10.2	10.8	7.7	8.8
28	---	---	---	9.1	7.6	8.1	11.9	9.0	9.9	9.8	7.3	8.2
29	---	---	---	9.2	7.5	8.1	11.9	8.9	9.9	9.8	7.1	7.9
30	---	---	---	9.9	7.5	8.3	11.8	9.0	10.0	10.0	7.4	8.3
31	---	---	---	---	---	---	11.4	8.7	9.5	9.6	6.9	7.9
MONTH	---	---	---	---	---	---	12.4	7.3	9.5	12.5	6.9	9.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	11.8	7.7	9.4	10.0	8.3	8.9	13.1	8.1	10.1
2	---	---	---	12.4	7.6	9.3	10.8	7.9	8.9	12.3	8.9	10.0
3	---	---	---	12.5	7.4	9.7	12.1	7.8	9.4	11.7	8.4	9.7
4	---	---	---	11.9	8.8	10.0	12.5	7.7	9.6	13.5	7.9	10.0
5	---	---	---	12.9	8.6	10.0	14.5	7.7	10.4	14.4	7.5	10.5
6	---	---	---	11.8	8.1	9.4	14.7	7.8	10.4	15.5	8.2	10.8
7	---	---	---	10.6	8.1	9.0	13.5	7.7	9.8	15.7	8.2	11.1
8	---	---	---	12.3	8.1	9.7	13.4	7.6	9.7	15.5	8.2	10.9
9	---	---	---	12.5	8.4	10.0	12.4	7.2	9.1	14.3	7.8	9.9
10	---	---	---	10.5	8.0	9.0	12.1	7.2	8.9	10.7	7.8	9.7
11	---	---	---	11.9	7.8	9.3	12.2	7.3	9.2	10.5	8.1	9.1
12	---	---	---	10.8	8.3	9.2	11.1	7.5	8.8	---	---	---
13	---	---	---	10.1	8.5	9.4	11.7	7.4	9.1	---	---	---
14	---	---	---	12.5	9.1	10.6	12.0	7.2	9.4	---	---	---
15	---	---	---	12.9	9.4	10.9	12.9	8.0	10.0	---	---	---
16	---	---	---	13.6	9.1	10.8	12.9	8.9	10.6	---	---	---
17	---	---	---	13.2	8.8	10.4	13.1	9.3	10.9	---	---	---
18	---	---	---	10.6	8.6	9.5	12.7	8.6	10.4	8.5	4.9	7.6
19	---	---	---	10.5	9.1	9.6	12.2	8.1	9.9	9.3	6.0	7.5
20	---	---	---	9.7	8.0	8.8	11.7	7.9	9.4	10.5	5.7	7.6
21	---	---	---	11.7	8.1	9.4	11.3	7.7	9.1	11.2	5.5	7.8
22	---	---	---	12.1	7.7	9.5	11.9	7.9	9.4	11.7	5.3	7.8
23	---	---	---	12.5	7.5	9.4	11.8	7.6	9.3	12.2	5.1	7.9
24	---	---	---	11.5	7.3	8.9	11.3	7.4	8.9	12.5	4.9	7.9
25	10.0	6.8	8.1	12.3	7.5	9.4	9.7	7.7	8.7	12.3	4.7	7.7
26	9.5	6.3	7.8	12.0	8.0	9.5	10.0	7.6	8.6	11.3	4.8	7.3
27	10.1	6.4	8.4	9.7	7.5	8.7	10.3	7.4	8.7	8.1	5.6	7.2
28	11.2	7.0	9.2	10.0	8.6	9.4	11.5	7.2	8.9	8.6	5.2	6.7
29	---	---	---	9.1	8.4	8.8	12.5	7.2	9.2	9.0	5.3	6.9
30	---	---	---	9.3	8.2	8.7	13.4	7.4	9.8	9.2	5.0	6.7
31	---	---	---	9.6	8.1	8.7	---	---	---	11.6	4.5	7.4
MONTH	---	---	---	13.6	7.3	9.5	14.7	7.2	9.4	---	---	---

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.9	4.3	7.9	12.2	5.3	8.2	8.3	4.1	5.7	10.7	3.7	6.5
2	12.8	4.3	7.8	12.7	4.9	8.1	8.1	3.9	5.7	10.5	3.6	6.3
3	12.3	4.3	7.6	12.0	5.4	8.1	8.0	3.8	5.5	9.6	3.4	5.7
4	12.1	4.6	7.6	12.2	5.8	7.6	7.8	3.8	5.3	9.3	3.6	5.7
5	12.4	4.7	7.7	9.6	5.6	7.6	6.1	3.5	4.6	9.4	3.5	5.6
6	12.0	4.5	7.5	11.7	5.6	8.0	7.5	3.2	5.0	8.8	3.5	5.2
7	12.5	4.2	7.6	12.7	5.4	8.2	8.5	3.3	5.4	7.5	3.9	5.0
8	12.2	3.7	7.3	12.1	5.6	8.3	8.5	3.3	5.4	8.3	3.7	5.2
9	11.9	3.9	7.2	12.2	5.4	8.0	7.9	3.2	5.2	8.7	3.2	5.7
10	12.7	3.9	7.4	11.0	5.2	7.5	8.6	3.3	5.4	8.4	3.0	5.0
11	12.4	4.2	7.6	7.8	6.6	7.2	8.1	3.2	5.2	8.3	2.9	4.9
12	12.4	4.3	7.7	8.2	6.5	7.6	8.0	3.2	5.0	8.1	3.1	5.0
13	8.1	4.0	6.0	9.0	6.1	7.2	8.0	3.1	5.0	7.7	2.8	4.6
14	12.1	3.8	7.0	9.4	5.5	7.2	7.4	2.7	4.7	7.9	3.3	5.1
15	7.8	4.3	6.8	11.1	5.2	7.5	7.4	2.6	4.6	7.3	3.0	4.7
16	7.2	5.9	6.7	11.7	5.3	7.7	7.2	2.5	4.5	8.0	3.2	5.0
17	8.0	5.5	6.7	10.4	5.0	6.9	7.2	2.5	4.3	7.6	3.3	5.0
18	10.8	5.6	7.9	10.3	5.3	7.0	6.4	2.5	4.0	7.1	3.2	4.8
19	13.6	5.2	8.3	9.7	5.2	6.9	6.4	2.3	3.9	7.2	3.2	4.8
20	8.4	6.8	7.9	9.1	5.2	6.8	6.5	2.1	3.7	7.2	3.1	4.7
21	8.6	7.6	8.2	9.1	5.1	6.3	5.6	2.0	3.4	7.5	3.0	4.9
22	8.3	7.1	7.7	8.7	5.1	6.8	5.6	2.2	3.4	7.4	3.6	5.1
23	7.8	6.6	7.3	9.1	4.8	6.5	5.1	1.7	2.6	7.4	3.3	5.0
24	7.6	6.2	6.8	9.0	4.7	6.3	3.9	2.5	3.4	7.2	3.3	4.7
25	8.8	6.1	7.2	8.8	4.6	6.2	3.7	2.4	3.0	6.1	3.1	4.1
26	8.7	6.1	7.2	8.6	4.5	6.1	3.9	2.4	3.0	6.7	2.9	4.3
27	11.0	6.0	7.9	8.3	4.5	6.0	4.7	1.9	3.0	7.5	2.9	4.9
28	13.2	5.9	8.6	8.5	4.5	6.1	5.8	2.0	3.6	7.6	2.9	5.5
29	12.8	5.5	8.0	8.6	4.4	6.0	6.1	1.9	3.5	8.8	4.5	6.4
30	12.7	5.4	8.4	8.5	4.4	6.0	9.2	2.6	5.4	8.8	5.0	7.0
31	---	---	---	8.3	4.2	5.9	10.5	4.0	6.6	---	---	---
MONTH	13.6	3.7	7.5	12.7	4.2	7.1	10.5	1.7	4.5	10.7	2.8	5.2

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08178585 SALADO CREEK AT WILDERNESS ROAD AT SAN ANTONIO, TX

LOCATION.--Lat 29°37'50", long 98°33'45", 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 mi^2. Since installation of the gage in Oct 1997, the upper 17.0 mi^2 of drainage area is above Salado Creek flood control structures #1 and #2 and contributes runoff only during larger storm events.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1030 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. No known diversions. Since installation of gage in Oct 1997, at least 10% of contributing drainage area has been regulated by Salado Creek flood control structures #1 and #2 (capacity 4,190 and 2,290 acre-ft respectively), 3.1 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,000 ft^3/s, Oct 18 (gage height, 13.55 ft); minimum discharge, 0.00 ft^3/s, Oct 1-17, Dec 4, Jan 17-19, 25, 27-31, Feb 1-28, Mar 1-31, Apr 1-30, May 1-31, Jun 1-12, 21-30, Jul 1-31, Aug 1-31, Sep 1-30 (gage height, 0.41 ft).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	.00	.00	.19	.31	.27	.05	.00	.00	.00	.00
2	---	---	.00	.00	.09	.30	.26	.04	.00	.00	.00	.00
3	---	---	.00	.00	.08	.27	.24	.03	.00	.00	.00	.00
4	---	---	.00	.00	.08	.26	.22	.02	.00	.00	.00	.00
5	---	---	.00	.02	.08	.25	.20	.02	.00	.00	.00	.00
6	---	---	.00	.08	.08	.22	.20	.01	.00	.00	.00	.00
7	---	---	.00	.00	.08	.22	.18	.01	.00	.00	.00	.00
8	---	---	.00	.01	.09	.20	.16	.00	.00	.00	.00	.00
9	---	---	.00	.19	.09	.19	.15	.00	.00	.00	.00	.00
10	---	---	.00	.36	.10	.18	.14	.00	.00	.00	.00	.00
11	---	---	.00	.40	.10	.18	.14	.00	.00	.00	.00	.00
12	---	---	.00	.41	.11	.17	.13	.00	.00	.00	.00	.00
13	---	---	.00	.38	.25	.19	.13	.00	.00	.00	.00	.00
14	---	---	.00	.38	.58	.28	.12	.00	.00	.00	.00	.00
15	---	---	.00	.35	.77	.25	.12	.00	.00	.00	.00	.00
16	---	---	.00	.36	.69	40	.11	.00	.00	.00	.00	.00
17	---	---	.00	.37	.28	20	.11	.00	.00	.00	.00	.00
18	---	---	.00	.38	.19	5.2	.11	.00	.00	.00	.00	.00
19	---	---	.00	.36	.16	3.1	.11	.00	.00	.00	.00	.00
20	---	---	.00	.34	.14	2.4	.11	.00	.00	.00	.00	.00
21	---	---	.00	.35	1.4	1.9	.10	.00	.00	.00	.00	.00
22	---	---	.00	.33	.51	1.3	.10	.00	.00	.00	.00	.00
23	---	---	.00	.32	.22	1.1	.10	.00	.00	.00	.00	.00
24	---	---	.00	.31	.19	.88	.10	.00	.00	.00	.00	.00
25	---	---	.00	.32	2.1	.72	.11	.00	.00	.00	.00	.00
26	---	---	.00	.32	3.0	.59	.11	.00	.00	.00	.00	.00
27	---	---	.00	.31	.41	.47	.08	.00	.00	.00	.00	.00
28	---	---	.00	.32	.41	.42	.07	.00	.00	.00	.00	.00
29	---	---	.00	.32	---	.38	.06	.00	.00	.00	.00	.00
30	---	---	.00	.31	---	.35	.06	.00	.00	.00	.00	.00
31	---	---	.00	1.8	---	.29	---	.00	---	.00	.00	---
TOTAL	---	---	0.00	9.40	12.47	82.57	4.10	0.18	0.00	0.00	0.00	0.00
MEAN	---	---	.000	.30	.45	2.66	.14	.006	.000	.000	.000	.000
MAX	---	---	.00	1.8	3.0	40	.27	.05	.00	.00	.00	.00
MIN	---	---	.00	.00	.08	.17	.06	.00	.00	.00	.00	.00
AC-FT	---	---	.00	19	25	164	8.1	.4	.00	.00	.00	.00

08178585 SALADO CREEK AT WILDERNESS ROAD AT SAN ANTONIO, TX--Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	35	e.20	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	24	e.15	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	19	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	18	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
5	.00	21	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
6	.00	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	18	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
8	.00	16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	11	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00
12	.00	10	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00
13	.00	8.9	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00
14	.00	14	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00
15	.00	11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
16	.00	12	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
17	e545	11	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
18	e653	11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
19	268	9.6	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
20	256	8.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	248	6.8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	239	5.4	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00
23	231	4.2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	222	3.2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	213	2.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	203	1.5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	192	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	170	.64	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	85	.47	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	45	.38	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	23	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	3593.00	328.89	0.35	0.00	0.00	0.00	0.00	0.00	0.06	0.30	0.00	0.00
MEAN	116	11.0	.011	.000	.000	.000	.000	.000	.002	.010	.000	.000
MAX	653	35	.20	.00	.00	.00	.00	.00	.06	.06	.00	.00
MIN	.00	.38	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	7130	652	.7	.00	.00	.00	.00	.00	.1	.6	.00	.00

CAL YR 1998 TOTAL 4030.96 MEAN 11.0 MAX 653 MIN .00 AC-FT 8000
WTR YR 1999 TOTAL 3922.60 MEAN 10.7 MAX 653 MIN .00 AC-FT 7780

e Estimated

08178585 SALADO CREEK AT WILDERNESS ROAD AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: February 1998 to current year.
BIOCHEMICAL DATA: February 1998 to current year.
PESTICIDE DATA: February 1998 to current year.

REMARKS.--Runoff events are infrequent at this site. Runoff samples are collected during and after heavy rainfall events.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L) (00310)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)
FEB 14...	1330	--	--	200	870	--	--	--	--	--	--
FEB 21-21	1845	21	--	--	--	130	40	6.8	8.0	.3	12
MAR 16...	0300	27	2.6	5300	21000	83	28	3.2	1.9	.1	5

DATE	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)
FEB 14...	--	--	--	--	--	--	.373	.045	3.9	3.5	1.3
FEB 21-21	2.3	23	16	174	201	350	.244	.024	1.1	.86	.20
MAR 16...	2.5	6.5	2.9	113	177	212	.106	<.020	1.1	--	--

DATE	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (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. GRAVIMETRIC (MG/L) (00556)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC TOTAL (UG/L AS AS) (01002)
FEB 14...	1.4	3.5	.368	.148	--	--	--	--	--	--	2
FEB 21-21	.22	.88	.200	.041	9.8	<.010	<1	<1	3.8	<1.0	2
MAR 16...	.19	.96	.158	<.010	12	<.010	1	<1	--	--	4

DATE	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)
FEB 14...	--	<10	--	<1	--	<1	--	--	<1	--	<1
FEB 21-21	19	<10	<1.0	<1	<1.0	2	2.0	<1.0	3	<1.0	8
MAR 16...	--	<10	--	<1	--	7	--	--	4	--	8

DATE	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, DISSOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
FEB 14...	--	--	<.10	--	2	--	<1	<1	--	<10	--
FEB 21-21	<1.0	12	<.10	<1.0	3	<1.0	1	<1	<1.0	20	1.0
MAR 16...	--	--	<.10	--	4	--	<1	<1	--	50	--

08178585 SALADO CREEK AT WILDERNESS ROAD AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	BENZENE TOTAL (UG/L) (34030)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)
FEB 14...	--	--	--	--	--	--	--	--	--	--
FEB 21-21	<1.0	<.400	<.040	<.100	<.030	<.100	<1.00	<.100	<.100	<.100
MAR 16...	--	<.200	<.040	<.100	<.030	<.100	<1.00	<.100	<.100	<.100

DATE	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
FEB 14...	--	--	--	--	--	--	--	--	--	--
FEB 21-21	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.050	<.020	<.600
MAR 16...	<.100	<.100	<.040	<.030	<.100	<.100	<.090	--	<.020	<.600

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	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)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
FEB 14...	--	--	--	--	--	--	--	--	--	--
FEB 21-21	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100
MAR 16...	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	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)
OCT 17...	1220	18	3.5	>1200	>1200	52	19	1.0	.77	.0	3	3.1
20...	1510	--	--	--	--	94	34	2.1	1.4	.1	3	2.8

DATE	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)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, 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)
OCT 17...	53	1.9	1.1	90	78	252	.061	<.020	1.4	.45	1.3	.140
20...	--	2.8	1.8	128	106	38	--	<.020	--	.28	.52	E.037

DATE	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)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
OCT 17...	E.032	18	<.010	<4	2	<1	<10	<1	3	3	4
20...	<.050	--	--	--	--	<1	<10	<1	2	2	1

08178585 SALADO CREEK AT WILDERNESS ROAD AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)
OCT											
17...	<.10	4	<1	<1	10	<.040	<.100	<.030	<.100	<1.00	<.100
20...	<.10	2	<1	<1	<10	--	--	--	--	--	--

DATE	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)
OCT											
17...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.050	<.020
20...	--	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	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)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT											
17...	<.600	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100
20...	--	--	--	--	--	--	--	--	--	--	--

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08178602 CAMP CREEK AT WILDERNESS TRAIL AT SAN ANTONIO, TX

LOCATION.--Lat 29°38'11", long 98°31'51", Bexar County, Hydrologic Unit 12100301, at Wilderness Trail low-water crossing, within Camp Bullis Military Reservation, 0.75 mi west of FM 2696.

DRAINAGE AREA.-- 3.64 mi^2.

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

REMARKS.--Automatic water-quality sampler. Water-quality samples were collected for selected storm events.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
MAR 16-16	0225	110	8.0	15.0	33	2.5	9000	7600	52	0	19

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
MAR 16-16	.94	1.1	.1	4	2.0	51	2.5	1.7	102	68	132

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	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 TOTAL (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)
MAR 16-16	<.050	<.020	.30	.89	.074	<.010	13	<.010	2	<1	7.9

DATE	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	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, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	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)
MAR 16-16	1.0	2	7.1	<10	<1.0	<1	<1.0	2	1.1	<1.0	4

DATE	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)	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)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
MAR 16-16	1.6	29	1.5	1.4	<.10	<1.0	2	<1.0	<1	<1	<1.0

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)	BENZENE TOTAL (UG/L) (34030)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)
MAR 16-16	<10	<1.0	<1.0	<.400	<.040	<.100	<.030	<.100	<1.00	<.100	<.100

08178602 CAMP CREEK AT WILDERNESS TRAIL AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
MAR 16-16	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	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)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
MAR 16-16	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	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)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	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)
OCT 17-17	0730	--	--	11	--	--	29	11	.51	.40	.0	3
17...	1140	99	7.2	--	K14000	17000	46	17	1.1	.58	.0	2

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)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	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 TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
OCT 17-17	1.8	.73	.55	41	50	150	<.050	<.020	.38	1.5	.147	<.050
17...	2.7	1.3	.99	82	62	48	<.050	<.020	.45	3.5	.141	.032

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)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	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)
OCT 17-17	13	<.010	7	1	5.3	<1.0	<1	3.8	<10	<1.0	<1	<1.0
17...	--	--	--	--	8.3	<1.0	<1	7.0	<10	<1.0	<1	<1.0

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	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)	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)
OCT 17-17	2	<1.0	<1.0	16	11	38	1.8	4.0	<.10	<1.0	3	<1.0
17...	2	<1.0	<1.0	3	1.5	12	1.1	2.2	<.10	<1.0	1	<1.0

08178602 CAMP CREEK AT WILDERNESS TRAIL AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)
OCT											
17-17	<1	<1	<1.0	10	<1.0	<1.0	<.040	<.100	<.030	<.100	<1.00
17...	<1	<1	<1.0	<10	1.6	<1.0	--	--	--	--	--

DATE	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)
OCT											
17-17	<.100	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020
17...	--	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	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)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT											
17-17	<.600	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100
17...	--	--	--	--	--	--	--	--	--	--	--

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08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX

LOCATION.-Lat 29°30'57", long 98°25'51", Bexar County, Hydrologic Unit 12100301, on right bank at downstream side of eastbound bridge on Interstate Highway 410 in San Antonio, 1.0 mi west of Northeast School, 1.1 mi upstream from Perrin-Beitel Creek, and 2.7 mi east of San Antonio International Airport.

DRAINAGE AREA.--137 mi^2.

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some diversions for irrigation upstream from gage. Since water year 1973, at least 10% of contributing drainage area has been affected at times by discharge from the flood-detention pools of eleven floodwater-retarding structures with a combined detention capacity of 26,770 acre-ft. These structures control runoff from 74.6 mi^2 above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--12 years (water years 1961-72), 7.21 ft^3/s (5,220 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1961-72).--Maximum discharge, 24,900 ft^3/s May 12, 1972 (gage height, 15.22 ft), from rating curve extended above 8,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1853, 23 to 24 ft in Oct 1913. Flood in Sep 1921 reached a stage of 18 ft, and flood of Sep 27, 1946, reached a stage of 18.2 ft, and are the second and third highest since 1899.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	48	.16	.10	.03	.00	.13	.04	.00	.04	.00	.00
2	.00	14	.15	.09	.03	.00	.12	.06	.00	.04	.00	.01
3	.00	2.8	.15	.09	.03	.00	.10	.04	.00	.08	.00	.01
4	.00	1.2	.14	.08	.03	.00	.07	.05	.00	.19	.00	.08
5	.00	18	.13	e.07	.04	.00	.10	.04	.00	.04	.00	.00
6	e100	3.4	.13	e.07	.05	.00	.08	.04	.00	.05	.00	.00
7	e5.0	7.3	.11	e.07	.06	.00	.07	.02	.00	.06	.00	.00
8	e.18	2.2	.09	e.07	.04	.00	.10	.00	.00	.03	.00	.00
9	3.2	1.3	.11	e.07	.04	.00	.08	.00	.00	.02	.00	.00
10	.09	.85	2.0	e.07	.03	.00	.07	33	.00	1.5	.00	.00
11	.07	.57	.87	.07	.02	.00	.05	4.9	.00	5.1	.00	.00
12	.05	.61	.30	.07	.02	.18	.07	.26	.00	52	.00	.00
13	.01	3.9	.16	.08	.01	.72	.07	.11	.00	2.9	.00	.00
14	.02	72	.13	.07	.00	.16	.09	.07	.12	.20	.08	.00
15	.00	17	.13	.07	.01	.05	.06	.05	.61	.07	.07	.00
16	.01	2.7	.12	.06	.00	.03	.05	.04	.03	.04	.00	.00
17	e11600	1.2	.10	.07	.00	.00	.04	.03	.00	.13	.00	.00
18	e6860	.80	.11	.06	.00	.24	.02	12	.00	17	.00	.00
19	1640	.60	.10	.05	.00	5.4	.00	.51	.00	5.4	.00	.00
20	1190	.47	.09	.07	.00	1.7	.00	.12	1.2	.28	.00	.00
21	925	.45	.09	.06	.00	.24	.00	.08	51	.10	.00	.00
22	571	e.35	.08	.06	.00	.10	.00	.06	24	.06	.00	.00
23	326	.29	.09	.07	.00	.07	.00	.03	2.8	.03	.01	.00
24	235	.24	.09	.04	.00	.04	.00	.02	.21	.02	.44	.00
25	146	.24	.09	.05	.00	.01	1.0	.01	.19	.01	.02	.00
26	106	.31	.09	.05	.00	.01	1.3	.03	.13	.00	.01	.00
27	80	.28	.09	.05	.00	7.5	.42	.01	.09	.00	.00	.09
28	59	.22	.09	.05	.00	82	.11	.00	.08	.00	.00	.10
29	37	.18	.09	.06	---	3.9	.07	.00	.06	.00	.25	.04
30	8.0	.17	.09	.04	---	.36	.06	.00	.05	.00	.24	.00
31	2.7	---	.11	.04	---	.16	---	.00	---	.00	.03	---
TOTAL	23894.33	201.63	6.28	2.02	0.44	102.87	4.33	51.62	80.57	85.39	1.15	0.33
MEAN	771	6.72	.20	.065	.016	3.32	.14	1.67	2.69	2.75	.037	.011
MAX	11600	72	2.0	.10	.06	82	1.3	33	51	52	.44	.10
MIN	.00	.17	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	47390	400	12	4.0	.9	204	8.6	102	160	169	2.3	.7

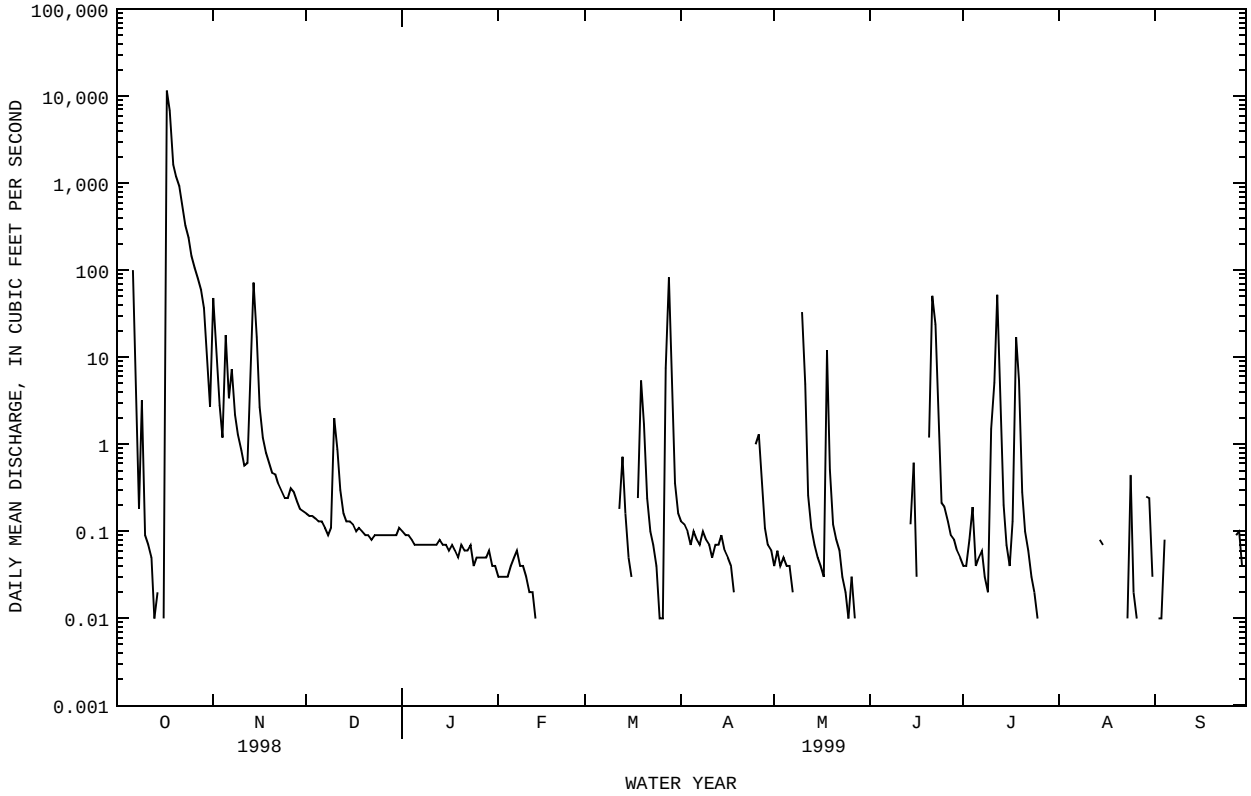
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1999z, BY WATER YEAR (WY)

MEAN	36.4	6.75	8.56	4.23	7.01	7.38	12.9	36.8	27.3	11.5	3.17	15.8
MAX	771	74.7	155	38.8	71.0	93.7	116	576	151	153	36.6	187
(WY)	1999	1978	1992	1992	1992	1992	1991	1993	1987	1973	1974	1973
MIN	.001	.008	.006	.000	.013	.044	.000	.006	.006	.000	.000	.011
(WY)	1992	1992	1996	1996	1996	1996	1984	1998	1984	1984	1986	1999

08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1973 - 1999z	
ANNUAL TOTAL	25415.65		24430.96			
ANNUAL MEAN	69.6		66.9		14.9	
HIGHEST ANNUAL MEAN					66.9	1999
LOWEST ANNUAL MEAN					.52	1984
HIGHEST DAILY MEAN	11600	Oct 17	11600	Oct 17	11600	Oct 17 1998
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	May 30 1973
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 11	.00	Feb 16	.00	Mar 12 1976
INSTANTANEOUS PEAK FLOW			i64400	Oct 17	i64400	Oct 17 1998
INSTANTANEOUS PEAK STAGE			a22.40	Oct 17	a22.40	Oct 17 1998
ANNUAL RUNOFF (AC-FT)	50410		48460		10770	
10 PERCENT EXCEEDS	9.4		3.6		10	
50 PERCENT EXCEEDS	.07		.06		.75	
90 PERCENT EXCEEDS	.00		.00		.00	

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



08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Nov 1968 to May 18, 1999 (discontinued).
BIOCHEMICAL DATA: Nov 1968 to May 18, 1999 (discontinued).
BACTERIA DATA: May 1976 to May 18, 1999 (discontinued).
SEDIMENT DATA: Nov 1971 to Sep 1973.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
17...	0915	19	44	--	--	7.6	--	<10	2.7	9600	15000
18...	1320	24200	160	7.7	22.0	7.7	89	<10	3.5	--	--
MAR											
27...	2140	7.2	117	8.1	15.5	8.8	89	31	9.1	K22000	7900
MAY											
18...	0205	16	237	7.7	25.0	--	--	31	4.2	5000	K83000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT											
17...	12	--	4.3	.20	.36	.0	6	.83	15	.45	.37
18...	69	2	25	1.4	2.0	.1	5	3.4	68	5.8	2.9
MAR											
27...	81	11	28	2.5	7.8	.4	17	4.0	70	20	10
MAY											
18...	100	12	38	2.5	5.4	.2	10	4.3	92	15	6.6

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
OCT											
17...	<10	23	97	<.050	.026	--	.61	.34	.37	.63	.200
18...	96	116	164	.601	.039	1.7	1.1	.08	.12	1.1	.257
MAR											
27...	119	118	24	.392	.099	1.3	.84	.45	.55	.94	.258
MAY											
18...	145	130	34	.142	.041	.25	.06	.40	.44	.10	E.044

DATE	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)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
OCT											
17...	<.050	5.2	<.010	<4	2	<1	<10	<1	3	10	17
18...	.052	13	<.010	--	2	3	<10	<1	4	4	5
MAR											
27...	.174	8.6	<.010	5	<1	1	<4.0	<1	1	5	4
MAY											
18...	.067	7.7	<.010	<4	1	3	<4.0	<1	<1	3	2

08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)
OCT											
17...	<.10	2	<1	<1	70	<.040	<.100	<.030	<.100	<1.00	<.100
18...	<.10	4	<1	<1	30	<.040	<.100	<.030	<.100	<1.00	<.100
MAR											
27...	<.10	2	<1	<1	E30	<.040	<.100	<.030	<.100	<1.00	<.100
MAY											
18...	<.10	2	<1	<1	<40	<.040	<.100	<.030	<.100	<1.00	<.100

DATE	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
OCT											
17...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
18...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
MAR											
27...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
MAY											
18...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	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)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT										
17...	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100
18...	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100
MAR										
27...	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100
MAY										
18...	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX

LOCATION.--Lat 29°21'25", long 98°24'45", Bexar County, Hydrologic Unit 12100301, on right bank at upstream side of bridge on Loop 13 at San Antonio, 1.4 mi east of Brooks Air Force Base, and 3.3 mi upstream from Rosillo Creek.

DRAINAGE AREA.--189 mi^2.

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records fair. Since water year 1973, at least 10% of contributing drainage area has been regulated by eleven Soil Conservation floodwater-retarding structures (combined capacity of 26,770 acre-ft). Several small diversions above station. Most of low flow comes from artesian wells and springs within the city of San Antonio.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--12 years (water years 1961-72) prior to regulation by Soil Conservation Service flood retarding structures, 30.6 ft^3/s (22,170 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1961-72).--Maximum discharge, 7,120 ft^3/s May 12, 1972 (gage height, 24.53 ft); no flow Aug 13, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Sep 27, 1946, and Aug 15, 1960, were about equal magnitude. Flood of Aug 15, 1960, reached a stage of 26.8 ft, from floodmarks. Maximum stage since at least 1941, that of Sep 27, 1973.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	232	21	20	14	12	15	7.7	3.5	4.1	3.5	6.6
2	4.3	125	20	19	14	12	14	10	3.4	3.9	3.5	3.2
3	4.3	40	20	18	14	12	12	9.4	3.2	7.2	3.6	3.0
4	4.3	29	20	17	15	12	11	8.2	3.1	6.5	5.9	2.3
5	3.8	119	19	18	15	12	11	7.4	2.8	18	11	2.4
6	729	61	19	20	14	12	10	6.7	2.6	6.0	4.7	3.1
7	117	71	19	20	14	12	9.6	6.2	2.7	4.5	3.5	2.5
8	24	63	19	20	13	12	10	6.2	2.6	4.6	3.5	2.6
9	11	37	20	20	14	12	10	6.1	2.4	5.1	3.3	5.5
10	8.1	32	34	18	13	12	10	393	2.1	5.9	3.2	3.7
11	6.9	28	60	18	13	12	9.0	75	4.1	110	2.7	2.9
12	5.7	25	33	19	12	12	8.9	24	2.4	90	2.4	2.7
13	6.0	45	23	19	12	30	9.2	12	14	45	2.6	2.5
14	5.8	255	21	19	12	27	9.6	8.6	4.6	11	3.1	2.3
15	5.6	126	20	18	13	16	9.4	7.2	3.4	5.7	3.7	1.7
16	6.4	56	19	22	13	13	8.5	6.3	9.3	4.8	3.0	2.3
17	e9110	38	19	22	13	12	8.3	5.7	4.8	4.4	2.2	1.8
18	e16900	32	19	17	12	11	8.3	187	2.7	6.6	2.6	1.2
19	e2660	29	19	17	13	25	8.2	37	14	63	2.1	1.8
20	2180	26	18	16	14	45	7.9	14	227	50	2.2	1.9
21	1450	25	18	16	13	19	7.6	8.8	545	24	2.3	1.3
22	1030	24	17	17	13	15	7.6	6.7	240	11	2.5	.78
23	529	24	18	16	13	13	7.7	5.9	36	5.7	3.9	1.0
24	390	26	19	16	13	11	7.6	5.4	13	5.4	67	.79
25	253	22	18	16	13	10	28	5.0	12	4.5	29	.88
26	185	21	19	16	14	10	67	4.9	11	4.5	8.9	1.2
27	128	25	19	16	13	27	40	431	6.0	3.9	3.2	1.1
28	95	24	19	16	12	810	16	14	5.0	3.7	2.6	1.7
29	72	21	19	16	---	94	9.9	7.5	4.5	3.2	2.6	1.9
30	49	21	19	15	---	28	8.6	5.2	4.3	3.8	9.9	2.9
31	27	---	19	14	---	17	---	4.0	---	3.9	13	---
TOTAL	36004.6	1702	666	551	371	1377	399.9	1336.1	1191.5	529.9	217.2	69.55
MEAN	1161	56.7	21.5	17.8	13.3	44.4	13.3	43.1	39.7	17.1	7.01	2.32
MAX	16900	255	60	22	15	810	67	431	545	110	67	6.6
MIN	3.8	21	17	14	12	10	7.6	4.0	2.1	3.2	2.1	.78
AC-FT	71420	3380	1320	1090	736	2730	793	2650	2360	1050	431	138

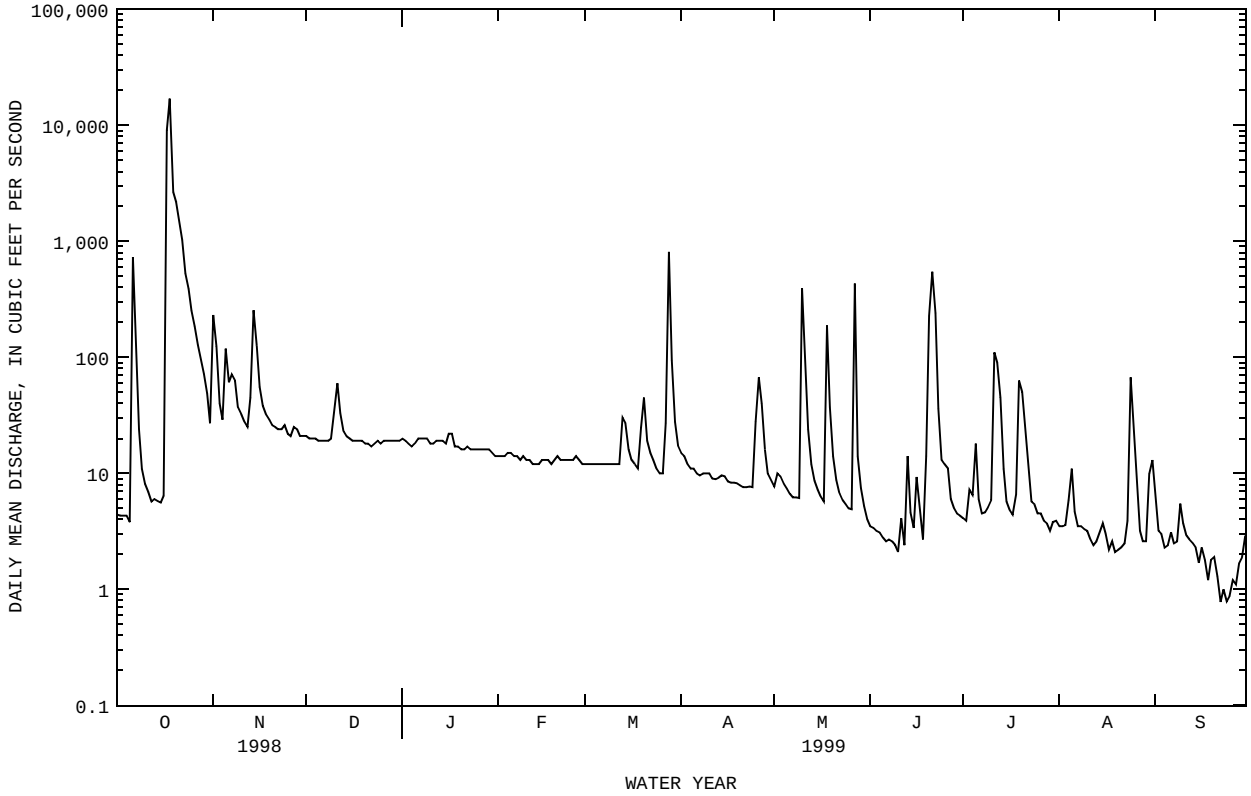
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1999z, BY WATER YEAR (WY)

MEAN	85.2	41.4	46.7	37.1	45.3	41.0	51.4	81.8	87.6	41.9	29.6	50.9
MAX	1161	146	376	136	285	206	188	337	349	234	176	400
(WY)	1999	1978	1992	1992	1992	1992	1977	1993	1987	1973	1974	1973
MIN	2.86	6.35	8.16	3.88	5.27	7.70	7.80	3.88	1.66	.55	4.31	2.32
(WY)	1997	1992	1997	1997	1996	1996	1984	1998	1998	1998	1984	1999

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1973 - 1999z	
ANNUAL TOTAL	48024.59		44415.75			
ANNUAL MEAN	132		122		53.3	
HIGHEST ANNUAL MEAN					149	1992
LOWEST ANNUAL MEAN					9.96	1996
HIGHEST DAILY MEAN	16900	Oct 18	16900	Oct 18	16900	Oct 18 1998
LOWEST DAILY MEAN	.02	Jul 29	.78	Sep 22	.02	Jul 29 1998
ANNUAL SEVEN-DAY MINIMUM	.03	Jul 29	1.0	Sep 21	.03	Jul 29 1998
INSTANTANEOUS PEAK FLOW			i48800	Oct 17	i48800	Oct 17 1998
INSTANTANEOUS PEAK STAGE			a34.07	Oct 17	a34.07	Oct 17 1998
ANNUAL RUNOFF (AC-FT)	95260		88100		38640	
10 PERCENT EXCEEDS	86		62		65	
50 PERCENT EXCEEDS	14		12		22	
90 PERCENT EXCEEDS	.61		2.7		6.3	

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



08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Nov 1968 to current year.
BIOCHEMICAL DATA: Nov 1968 to Sep 1998.
BIOLOGICAL DATA: May 1989 to Sep 1995.
PESTICIDE DATA: Nov 1968 to Sep 1998.
SEDIMENT DATA: Oct 1968 to Sep 1973, Apr 1996 to Sep 1997.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jan 1987 to current year.
PH: Jan 1987 to current year.
WATER TEMPERATURE: Jan 1987 to current year.
DISSOLVED OXYGEN: Jan 1987 to current year.

INSTRUMENTATION.--Water-quality monitor since Jan 1987.

REMARKS.--Interruptions in the record were caused by malfunction of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,290 microsiemens, Aug 23, 1994; minimum, 39 microsiemens, 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, Jul 17-20, 1988, Jul 30, 1993, Jul 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, Jul 27, 1996.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,070 microsiemens, Dec 10; minimum, 75 microsiemens, Oct 17.
PH: Maximum, 8.1 units, Dec 23-27, 29-30, Jan 3-7, Mar 1, 3; minimum, 7.0 units, Aug 24.
WATER TEMPERATURE: Maximum, 29.8°C, Aug 12; minimum, 3.2°C, Oct 17.
DISSOLVED OXYGEN: Maximum, 12.8 mg/L, Feb 23; minimum, 3.5 mg/L, Aug 22.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	778	747	761	---	---	e680	988	974	980	965	931	960
2	791	772	783	---	---	e470	999	976	986	950	916	943
3	796	790	793	556	514	538	1020	998	1010	951	943	947
4	808	796	805	627	556	585	1050	1000	1020	954	944	951
5	835	808	824	713	531	620	1030	1010	1020	955	949	952
6	835	110	313	698	575	644	1030	1010	1020	960	950	955
7	351	195	276	793	578	682	1030	1010	1020	962	950	957
8	441	351	399	652	572	612	1010	1010	1010	958	951	955
9	486	441	468	731	652	697	1010	1000	1010	957	941	951
10	526	485	512	797	731	768	1070	893	978	953	936	947
11	563	526	543	789	768	776	923	844	881	947	934	941
12	578	563	572	833	774	795	862	814	830	944	933	940
13	637	569	602	899	795	827	822	815	818	945	918	940
14	648	625	633	831	501	629	843	818	827	943	910	930
15	676	647	657	515	403	448	887	843	862	939	902	928
16	709	671	683	577	485	538	913	887	900	940	916	932
17	711	75	358	651	577	619	911	902	906	925	906	915
18	---	---	e150	707	651	681	925	902	912	929	918	926
19	---	---	e210	779	707	747	929	923	926	934	925	931
20	---	---	e250	880	779	818	942	928	935	949	931	942
21	---	---	e320	869	830	853	957	942	949	955	942	949
22	---	---	e410	915	867	892	957	951	954	955	935	945
23	---	---	e450	933	915	925	972	953	966	943	931	936
24	---	---	e500	934	920	929	969	963	965	945	926	937
25	---	---	e550	957	928	946	968	965	966	948	934	941
26	---	---	e590	980	953	967	969	962	965	953	940	947
27	---	---	e630	977	949	966	967	963	965	960	936	947
28	---	---	e670	979	942	956	966	956	960	958	937	948
29	---	---	e705	984	976	981	964	956	961	961	946	954
30	---	---	e740	1010	971	993	965	958	962	957	941	948
31	---	---	e760	---	---	---	961	957	959	946	936	942
MONTH	---	---	546	---	---	753	1070	814	949	965	902	943

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	950	932	943	937	920	929	649	601	626	679	667	674
2	948	933	941	943	923	933	683	649	660	690	528	662
3	951	935	943	939	921	929	723	682	706	721	517	668
4	952	936	944	944	918	935	762	722	741	742	719	724
5	974	937	946	948	938	944	799	762	784	763	742	753
6	954	943	947	949	932	940	821	799	811	766	751	759
7	952	940	947	946	932	942	854	812	835	783	759	770
8	956	940	949	954	943	949	863	850	857	798	780	789
9	958	940	950	953	941	946	871	857	863	811	798	805
10	956	943	949	949	941	944	887	868	877	812	289	464
11	955	939	945	952	940	947	892	877	884	350	295	314
12	940	933	937	950	939	947	910	886	894	421	350	386
13	944	933	940	942	735	890	915	898	903	502	421	462
14	947	940	945	876	810	840	920	897	905	564	502	538
15	952	943	949	878	859	869	897	884	892	609	564	590
16	955	947	951	898	878	888	901	876	887	657	609	635
17	955	940	948	880	854	866	903	892	898	693	657	677
18	953	937	945	897	861	885	903	895	899	693	385	504
19	945	933	939	923	823	870	909	895	903	430	386	398
20	939	915	930	892	779	822	917	902	910	430	389	404
21	930	899	916	783	753	769	912	902	908	477	430	458
22	923	899	916	783	765	775	910	899	905	523	477	503
23	929	905	919	805	783	798	916	900	909	573	523	551
24	929	907	918	807	800	805	911	902	907	614	573	594
25	935	909	925	810	779	798	957	807	891	659	614	633
26	931	916	926	787	778	780	807	529	688	685	659	671
27	939	918	929	796	147	731	636	549	598	680	169	321
28	936	920	927	480	215	289	668	604	651	510	404	460
29	---	---	---	---	---	e450	682	658	673	592	510	543
30	---	---	---	---	---	e520	682	668	676	578	533	556
31	---	---	---	601	572	580	---	---	---	629	542	598
MONTH	974	899	938	---	---	823	957	529	818	812	169	576

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	672	629	651	707	686	697	749	719	733	622	574	604
2	704	672	687	720	705	714	761	742	750	654	622	635
3	727	704	714	734	717	725	775	758	766	672	647	655
4	752	726	733	782	555	703	777	652	766	695	671	683
5	790	751	775	721	457	655	778	393	660	718	695	707
6	790	779	783	722	659	698	756	710	720	739	717	727
7	808	785	795	848	721	750	763	728	747	824	615	702
8	819	798	805	838	765	777	796	763	785	773	673	755
9	840	808	823	765	705	743	809	738	800	777	764	771
10	846	839	842	715	695	705	811	729	795	776	638	715
11	852	656	831	728	252	485	817	809	814	712	636	667
12	765	642	679	571	257	454	815	767	790	714	687	699
13	870	567	763	371	340	357	826	805	818	721	708	714
14	712	559	630	420	370	391	831	815	822	725	707	715
15	820	700	735	481	420	454	836	812	821	731	715	722
16	797	663	731	531	481	508	828	797	815	746	718	733
17	670	657	666	567	531	549	810	797	805	751	733	744
18	697	662	676	635	567	598	835	802	822	814	744	786
19	734	159	598	607	478	547	849	831	842	978	774	851
20	743	230	472	580	326	492	864	844	855	910	807	838
21	280	149	208	386	299	336	871	856	863	834	813	828
22	280	155	210	438	361	407	879	861	870	826	816	820
23	372	280	339	453	407	424	886	800	870	851	823	831
24	443	371	405	526	453	489	864	569	716	944	851	894
25	518	443	476	569	526	546	582	369	413	880	858	869
26	526	327	482	600	569	584	576	434	526	887	860	870
27	580	526	558	635	600	619	612	576	596	888	872	881
28	616	579	602	655	634	645	645	612	632	893	881	887
29	671	616	645	691	653	674	664	645	658	898	873	880
30	689	671	679	711	687	700	720	639	669	1060	898	965
31	---	---	---	734	709	721	639	543	562	---	---	---
MONTH	870	149	633	848	252	585	886	369	745	1060	574	772

e Estimated

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.9	7.8	7.9	---	---	---	7.7	7.6	7.6	7.8	7.7	7.7
2	7.9	7.8	7.8	---	---	---	7.7	7.6	7.7	7.9	7.6	7.7
3	7.9	7.8	7.8	7.3	7.3	7.3	7.7	7.6	7.7	8.1	7.8	7.9
4	7.9	7.8	7.8	7.4	7.3	7.4	7.7	7.6	7.7	8.1	7.9	8.0
5	7.9	7.8	7.9	7.5	7.4	7.5	7.7	7.6	7.7	8.1	7.9	8.0
6	7.9	7.3	7.7	7.5	7.4	7.5	7.7	7.6	7.7	8.1	7.9	8.0
7	7.6	7.4	7.5	7.6	7.5	7.5	7.7	7.6	7.6	8.1	7.9	7.9
8	7.5	7.4	7.4	7.5	7.5	7.5	7.7	7.6	7.7	7.9	7.8	7.8
9	7.5	7.5	7.5	7.5	7.5	7.5	7.7	7.7	7.7	7.9	7.7	7.8
10	7.6	7.5	7.6	7.6	7.5	7.6	7.8	7.7	7.7	7.8	7.7	7.8
11	7.7	7.6	7.6	7.6	7.6	7.6	7.8	7.6	7.7	7.8	7.7	7.8
12	7.7	7.6	7.6	7.6	7.5	7.5	7.8	7.6	7.7	7.9	7.7	7.8
13	7.7	7.6	7.7	7.6	7.5	7.6	7.8	7.7	7.7	7.8	7.7	7.7
14	7.7	7.7	7.7	7.6	7.5	7.5	7.8	7.7	7.8	7.9	7.7	7.8
15	7.8	7.7	7.7	7.6	7.4	7.5	7.9	7.7	7.8	8.0	7.7	7.8
16	7.8	7.7	7.8	7.4	7.4	7.4	7.9	7.8	7.8	8.0	7.8	7.9
17	7.9	7.6	7.8	7.5	7.4	7.5	7.9	7.8	7.9	7.9	7.8	7.8
18	---	---	---	7.5	7.5	7.5	7.9	7.8	7.9	7.9	7.8	7.8
19	---	---	---	7.5	7.5	7.5	7.8	7.7	7.8	7.9	7.8	7.8
20	---	---	---	7.6	7.5	7.5	7.8	7.7	7.7	7.9	7.8	7.8
21	---	---	---	7.6	7.6	7.6	7.7	7.7	7.7	7.9	7.7	7.8
22	---	---	---	7.6	7.6	7.6	8.0	7.7	7.8	7.9	7.8	7.8
23	---	---	---	7.7	7.6	7.6	8.1	7.8	8.0	7.9	7.8	7.8
24	---	---	---	7.7	7.5	7.6	8.1	7.9	8.0	7.9	7.8	7.8
25	---	---	---	7.6	7.5	7.6	8.1	7.9	8.0	7.9	7.7	7.8
26	---	---	---	7.6	7.5	7.6	8.1	7.9	8.0	7.9	7.8	7.8
27	---	---	---	7.6	7.6	7.6	8.1	7.9	8.0	7.9	7.8	7.8
28	---	---	---	7.6	7.6	7.6	8.0	7.8	7.9	7.8	7.8	7.8
29	---	---	---	7.6	7.6	7.6	8.1	7.9	8.0	7.8	7.8	7.8
30	---	---	---	7.6	7.6	7.6	8.1	7.9	8.0	7.9	7.8	7.8
31	---	---	---	---	---	---	7.9	7.7	7.8	7.9	7.8	7.8
MONTH	---	---	---	---	---	---	8.1	7.6	7.8	8.1	7.6	7.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.9	7.8	7.9	8.1	7.8	7.9	7.4	7.4	7.4	7.6	7.4	7.5
2	8.0	7.8	7.9	8.0	7.8	7.9	7.4	7.4	7.4	7.6	7.3	7.5
3	8.0	7.9	7.9	8.1	7.8	7.9	7.5	7.4	7.5	7.6	7.3	7.5
4	8.0	7.9	7.9	8.0	7.9	7.9	7.6	7.5	7.5	7.6	7.5	7.6
5	8.0	7.9	7.9	8.0	7.9	7.9	7.6	7.5	7.6	7.6	7.5	7.6
6	8.0	7.9	7.9	8.0	7.9	7.9	7.7	7.6	7.6	7.7	7.6	7.6
7	8.0	7.9	7.9	7.9	7.9	7.9	7.8	7.6	7.7	7.7	7.6	7.7
8	8.0	7.9	7.9	8.0	7.9	7.9	7.7	7.7	7.7	7.8	7.6	7.7
9	8.0	7.9	7.9	8.0	7.9	7.9	7.7	7.6	7.7	7.8	7.8	7.8
10	8.0	7.9	8.0	8.0	7.9	8.0	7.7	7.6	7.7	8.0	7.3	7.6
11	8.0	7.9	7.9	8.0	7.9	7.9	7.7	7.6	7.7	7.5	7.4	7.5
12	8.0	7.9	7.9	8.0	7.9	7.9	7.8	7.7	7.7	7.5	7.4	7.4
13	8.0	7.9	8.0	8.0	7.7	7.9	7.8	7.7	7.7	7.6	7.4	7.5
14	8.0	7.9	7.9	8.0	7.8	7.9	7.8	7.7	7.7	7.6	7.6	7.6
15	8.0	7.9	7.9	8.0	7.9	7.9	7.8	7.8	7.8	7.7	7.6	7.6
16	8.0	7.9	7.9	8.0	7.9	8.0	7.9	7.8	7.8	7.7	7.6	7.7
17	8.0	7.9	7.9	7.9	7.8	7.9	7.9	7.7	7.8	7.8	7.7	7.7
18	8.0	7.9	7.9	7.9	7.8	7.9	7.8	7.7	7.8	7.8	7.4	7.6
19	8.0	7.9	7.9	7.9	7.8	7.9	7.9	7.8	7.8	7.5	7.5	7.5
20	8.0	7.9	7.9	7.8	7.7	7.8	7.9	7.8	7.9	7.5	7.5	7.5
21	8.0	7.9	7.9	7.8	7.7	7.7	7.9	7.7	7.8	7.6	7.5	7.6
22	8.0	7.9	7.9	7.8	7.7	7.7	7.8	7.7	7.8	7.7	7.6	7.6
23	8.0	7.9	7.9	7.8	7.7	7.7	7.9	7.8	7.8	7.7	7.6	7.6
24	8.0	7.8	7.9	7.8	7.7	7.7	7.8	7.6	7.7	7.7	7.6	7.7
25	8.0	7.8	7.9	7.7	7.6	7.7	7.6	7.4	7.6	7.8	7.7	7.7
26	8.0	7.8	7.9	7.8	7.7	7.7	7.5	7.3	7.4	7.8	7.8	7.8
27	8.0	7.8	7.9	7.9	7.7	7.7	7.4	7.3	7.4	7.9	7.4	7.6
28	8.0	7.8	7.9	---	---	---	7.5	7.3	7.4	7.5	7.5	7.5
29	---	---	---	---	---	---	7.5	7.4	7.5	7.7	7.5	7.6
30	---	---	---	---	---	---	7.5	7.4	7.5	7.7	7.6	7.7
31	---	---	---	---	---	---	---	---	---	7.8	7.7	7.7
MONTH	8.0	7.8	7.9	---	---	---	7.9	7.3	7.6	8.0	7.3	7.6

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.8	7.7	7.8	7.9	7.8	7.8	7.9	7.8	7.8	7.6	7.5	7.6
2	7.9	7.8	7.8	7.8	7.8	7.8	7.9	7.8	7.9	7.7	7.6	7.6
3	7.9	7.8	7.9	7.9	7.8	7.8	7.9	7.8	7.9	7.7	7.6	7.7
4	7.9	7.8	7.9	7.9	7.6	7.8	7.9	7.5	7.8	7.8	7.6	7.7
5	7.9	7.8	7.9	7.8	7.5	7.8	7.6	7.1	7.4	7.8	7.7	7.8
6	7.9	7.9	7.9	7.8	7.7	7.8	7.6	7.4	7.4	7.8	7.7	7.7
7	8.0	7.9	7.9	7.8	7.8	7.8	7.5	7.3	7.4	7.7	7.3	7.5
8	8.0	7.9	7.9	7.8	7.7	7.8	7.5	7.4	7.4	7.8	7.6	7.7
9	8.0	7.8	7.8	7.8	7.7	7.8	7.5	7.4	7.5	7.9	7.8	7.9
10	7.9	7.8	7.8	7.8	7.7	7.7	7.5	7.4	7.5	7.9	7.9	7.9
11	7.9	7.8	7.8	7.8	7.4	7.6	7.5	7.3	7.4	8.0	7.9	7.9
12	7.8	7.6	7.7	7.7	7.4	7.6	7.5	7.3	7.4	8.0	7.8	7.9
13	7.9	7.5	7.8	7.6	7.5	7.5	7.5	7.3	7.4	8.0	7.8	7.9
14	7.7	7.5	7.6	7.6	7.4	7.5	7.4	7.3	7.4	8.0	7.8	7.9
15	7.8	7.7	7.7	7.6	7.5	7.5	7.5	7.3	7.4	7.8	7.7	7.7
16	7.8	7.7	7.8	7.6	7.5	7.6	7.4	7.3	7.4	7.8	7.6	7.7
17	7.7	7.7	7.7	7.6	7.5	7.6	7.4	7.2	7.3	7.8	7.6	7.7
18	7.8	7.7	7.7	7.7	7.6	7.6	7.4	7.2	7.3	7.8	7.6	7.7
19	8.0	7.7	7.8	7.7	7.5	7.7	7.4	7.2	7.3	7.7	7.6	7.7
20	7.9	7.4	7.6	7.7	7.5	7.7	7.4	7.2	7.3	7.8	7.6	7.7
21	7.8	7.4	7.5	7.6	7.5	7.5	7.4	7.2	7.3	7.7	7.7	7.7
22	7.6	7.5	7.5	7.6	7.5	7.6	7.3	7.2	7.2	7.8	7.6	7.7
23	7.5	7.5	7.5	7.6	7.5	7.6	7.3	7.2	7.2	7.8	7.5	7.6
24	7.6	7.5	7.5	7.7	7.6	7.6	7.3	7.0	7.2	7.9	7.6	7.7
25	7.7	7.5	7.6	7.8	7.7	7.7	7.3	7.2	7.2	7.8	7.7	7.7
26	7.6	7.5	7.6	7.8	7.7	7.8	7.4	7.2	7.3	7.8	7.7	7.7
27	7.7	7.6	7.6	7.9	7.7	7.8	7.4	7.3	7.3	7.8	7.7	7.7
28	7.8	7.7	7.7	7.8	7.7	7.7	7.4	7.3	7.3	7.7	7.7	7.7
29	7.8	7.7	7.8	7.8	7.7	7.7	7.5	7.4	7.4	7.7	7.6	7.6
30	7.9	7.8	7.8	7.9	7.7	7.8	7.6	7.4	7.5	7.7	7.5	7.6
31	---	---	---	7.9	7.8	7.8	7.6	7.4	7.5	---	---	---
MONTH	8.0	7.4	7.7	7.9	7.4	7.7	7.9	7.0	7.4	8.0	7.3	7.7

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	26.9	26.2	26.5	---	---	---	20.9	19.7	20.1	15.3	13.9	14.5
2	26.9	26.5	26.7	---	---	---	21.0	19.9	20.4	15.2	13.3	14.1
3	27.3	26.5	26.8	20.6	19.6	20.3	21.2	20.5	20.8	13.3	10.8	11.6
4	27.5	26.9	27.2	20.4	19.0	19.9	21.8	21.1	21.4	10.8	9.6	10.0
5	27.5	27.1	27.2	19.0	17.1	18.0	21.9	21.2	21.5	9.8	8.5	9.2
6	27.4	18.0	20.5	17.1	16.0	16.5	22.1	21.5	21.7	11.7	9.6	10.6
7	19.8	18.3	19.0	16.4	15.9	16.1	21.5	19.6	20.6	13.2	11.4	12.3
8	20.3	18.6	19.4	16.8	16.1	16.4	19.6	17.0	17.9	14.9	12.9	13.9
9	20.5	18.9	19.7	18.5	16.8	17.6	17.0	15.9	16.2	14.5	11.7	12.7
10	20.5	19.1	19.9	18.7	17.9	18.5	15.9	14.7	15.2	11.7	9.8	10.6
11	21.0	19.6	20.3	17.9	16.6	17.2	15.1	14.1	14.5	12.3	9.9	10.9
12	22.4	21.0	21.5	17.1	16.7	16.9	14.2	13.2	13.7	14.0	11.7	12.7
13	23.0	22.0	22.4	17.0	16.4	16.8	14.3	13.0	13.7	14.9	13.2	14.0
14	22.9	22.4	22.7	17.2	15.9	16.8	14.1	12.8	13.5	14.7	12.8	13.4
15	22.7	21.6	22.1	16.7	16.1	16.4	13.7	12.6	13.2	13.1	11.2	12.0
16	23.5	22.5	22.8	16.9	15.8	16.4	13.4	12.1	12.8	13.5	11.2	12.2
17	24.0	3.2	23.6	17.0	16.3	16.6	13.4	12.3	12.9	14.4	13.0	13.7
18	---	---	---	18.5	16.8	17.7	13.5	12.6	13.0	14.3	13.1	13.8
19	---	---	---	19.7	18.3	19.0	14.4	12.7	13.5	15.1	13.4	14.2
20	---	---	---	19.5	18.8	19.4	15.0	13.8	14.3	16.4	14.6	15.5
21	---	---	---	18.8	17.7	18.1	17.1	15.0	15.9	17.8	16.1	16.9
22	---	---	---	18.2	16.9	17.6	16.4	11.5	13.5	17.7	15.8	16.9
23	---	---	---	18.8	17.7	18.2	11.5	9.6	10.2	15.8	14.1	14.9
24	---	---	---	19.3	18.1	18.6	9.6	9.1	9.4	15.0	13.2	14.2
25	---	---	---	20.3	18.7	19.5	9.3	8.6	8.9	15.9	13.6	14.7
26	---	---	---	20.2	19.1	19.7	9.5	7.8	8.6	17.2	15.4	16.2
27	---	---	---	20.9	19.7	20.3	11.4	8.7	9.8	17.4	15.9	16.8
28	---	---	---	20.8	20.0	20.4	12.1	10.6	11.3	18.6	17.0	17.7
29	---	---	---	21.5	20.5	21.0	12.4	10.6	11.5	19.3	18.2	18.7
30	---	---	---	21.6	20.9	21.3	12.9	11.4	12.1	18.2	16.0	16.6
31	---	---	---	---	---	---	14.1	12.5	13.2	16.0	14.2	15.1
MONTH	---	---	---	---	---	---	22.1	7.8	14.7	19.3	8.5	13.9

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16.4	14.4	15.4	19.4	16.9	18.4	19.2	17.9	18.4	24.2	22.6	23.1
2	16.8	15.7	16.2	20.5	18.4	19.5	20.3	19.1	19.6	23.0	21.8	22.2
3	17.1	15.8	16.5	20.0	17.7	18.6	22.1	20.1	21.0	23.4	22.1	22.6
4	17.5	15.8	16.6	18.0	15.9	16.7	22.0	20.3	20.8	24.9	23.0	23.7
5	18.8	17.3	17.8	19.1	17.0	18.0	22.0	20.7	21.2	25.0	23.3	24.3
6	20.1	18.6	19.2	21.0	19.0	19.9	21.7	19.3	20.4	24.4	22.3	23.3
7	20.8	19.3	20.1	20.6	18.3	19.1	22.0	20.2	20.9	23.4	21.4	22.5
8	20.5	19.6	20.1	20.4	18.3	19.2	23.6	21.4	22.3	23.4	21.5	22.4
9	21.4	20.0	20.7	19.9	18.2	19.2	24.6	22.5	23.4	24.1	23.4	23.8
10	22.0	20.6	21.4	20.2	19.2	19.7	24.6	23.3	24.0	24.2	20.8	22.1
11	21.8	18.7	20.8	21.3	19.9	20.5	24.4	22.3	23.3	21.9	20.7	21.2
12	18.7	15.6	16.5	21.5	20.9	21.2	23.9	22.5	23.0	23.7	21.6	22.4
13	15.6	13.3	14.4	21.2	18.3	19.5	23.4	22.5	22.9	24.5	22.4	23.3
14	14.7	12.7	13.9	18.3	16.3	17.2	23.5	22.2	23.0	25.2	23.2	24.1
15	16.2	13.3	14.7	17.3	15.1	16.3	23.4	20.4	21.3	26.2	24.1	25.0
16	16.7	15.2	16.0	17.9	15.1	16.5	20.6	18.4	19.2	26.2	24.9	25.7
17	17.2	15.7	16.5	18.9	16.9	17.8	18.4	16.4	17.5	26.3	25.3	25.8
18	17.3	15.1	16.3	19.1	18.7	18.9	18.9	16.7	17.8	26.1	23.3	24.2
19	17.0	15.1	16.1	19.1	18.2	18.6	20.9	18.2	19.4	24.1	22.4	23.2
20	17.6	16.0	16.7	19.4	17.6	18.5	22.2	19.9	21.0	25.0	23.0	23.8
21	17.3	15.5	16.4	19.4	17.3	18.4	22.5	21.3	21.9	25.9	23.5	24.5
22	16.3	14.1	15.2	19.8	17.0	18.4	23.1	21.8	22.3	26.3	24.5	25.4
23	16.6	14.4	15.5	20.8	18.5	19.6	24.5	23.0	23.7	26.5	24.9	25.8
24	17.4	15.4	16.4	20.8	20.0	20.4	24.8	23.9	24.3	26.5	25.0	25.8
25	18.6	16.7	17.5	20.6	19.6	20.0	24.2	23.4	23.8	26.4	25.1	25.9
26	19.3	18.4	18.8	19.7	18.2	18.8	23.6	21.4	22.8	26.4	25.5	26.1
27	21.1	19.1	20.0	18.9	15.4	18.0	24.4	22.3	23.1	26.1	21.2	23.0
28	20.5	17.8	19.1	17.3	15.6	16.2	25.1	23.0	23.9	25.2	23.4	24.1
29	---	---	---	18.7	14.5	16.2	25.0	23.3	24.2	25.8	23.6	24.6
30	---	---	---	20.1	13.8	16.4	25.0	23.6	24.1	26.6	24.6	25.4
31	---	---	---	18.2	12.9	16.4	---	---	---	27.5	25.7	26.5
MONTH	22.0	12.7	17.3	21.5	12.9	18.5	25.1	16.4	21.8	27.5	20.7	24.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.9	26.5	27.3	28.8	27.5	28.2	29.1	28.6	28.8	28.3	26.9	27.7
2	28.1	27.0	27.7	28.7	27.8	28.3	29.1	28.0	28.6	28.2	27.5	27.9
3	27.9	26.9	27.4	28.8	27.8	28.3	29.0	28.1	28.5	28.2	27.5	27.9
4	27.6	26.8	27.3	28.3	27.1	27.6	28.8	27.7	28.3	28.4	27.5	28.0
5	27.8	26.9	27.4	28.6	26.2	27.4	28.8	26.9	27.9	28.3	27.3	27.8
6	28.0	27.2	27.6	28.6	26.9	27.8	28.8	27.6	28.3	27.8	26.6	27.0
7	27.9	27.4	27.7	28.6	27.3	27.9	29.0	27.9	28.5	27.3	26.5	26.9
8	28.0	27.3	27.7	28.3	27.4	28.0	29.2	28.3	28.7	27.4	26.2	26.9
9	28.2	27.5	27.8	28.5	27.3	28.0	29.6	28.1	28.8	27.3	26.2	26.7
10	27.9	27.2	27.5	28.6	27.8	28.1	29.6	28.4	29.0	27.5	26.8	27.1
11	29.1	27.7	28.1	28.5	27.3	27.8	29.7	28.3	29.1	27.8	26.9	27.3
12	29.2	28.3	28.8	28.0	26.8	27.4	29.8	28.5	29.2	27.8	26.7	27.3
13	28.8	27.2	28.1	28.3	26.7	27.5	29.7	28.5	29.2	27.6	26.5	27.0
14	27.9	26.4	27.1	28.5	27.0	27.7	29.7	28.2	28.9	26.9	25.7	26.3
15	27.7	26.4	26.9	28.5	26.8	27.7	29.1	28.1	28.6	26.6	25.5	26.1
16	27.5	25.4	26.5	28.2	27.0	27.7	29.3	28.1	28.7	26.3	24.5	25.3
17	27.1	25.9	26.5	28.0	27.0	27.5	29.1	27.8	28.4	25.3	23.6	24.4
18	27.1	26.0	26.5	27.7	26.4	27.0	29.0	27.7	28.3	24.9	24.0	24.4
19	26.8	26.3	26.6	28.3	26.3	27.5	28.9	27.8	28.3	25.6	24.1	24.8
20	26.3	25.1	25.8	28.0	26.8	27.3	28.6	27.8	28.2	25.6	23.9	24.9
21	25.1	24.1	24.7	27.4	26.5	26.9	28.6	27.8	28.2	25.6	24.4	24.9
22	25.4	24.1	24.7	28.2	26.2	27.0	28.6	27.6	28.0	24.4	22.9	23.8
23	26.9	25.1	25.8	28.3	27.0	27.8	27.9	26.9	27.3	22.9	21.0	21.6
24	27.6	26.0	26.6	28.4	27.0	27.8	27.6	25.9	26.8	21.6	20.4	21.0
25	28.3	26.5	27.3	28.0	26.8	27.5	27.8	26.1	26.9	23.0	21.5	22.1
26	28.3	26.7	27.4	28.0	27.4	27.8	28.2	26.6	27.4	24.4	23.0	23.6
27	28.6	27.2	27.8	28.4	27.7	28.0	28.7	27.8	28.2	25.4	24.4	24.8
28	29.2	27.5	28.3	28.9	28.2	28.5	29.0	27.7	28.3	25.9	25.1	25.4
29	29.3	27.7	28.4	29.0	28.1	28.5	28.6	27.6	28.2	25.9	22.7	24.4
30	28.8	27.4	28.2	29.0	28.3	28.6	28.5	27.3	27.8	22.7	20.9	21.6
31	---	---	---	29.3	28.5	28.8	28.3	26.8	27.5	---	---	---
MONTH	29.3	24.1	27.2	29.3	26.2	27.8	29.8	25.9	28.3	28.4	20.4	25.5

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	4.9	4.2	4.5	---	---	---	6.7	6.0	6.4	8.8	7.9	8.3
2	4.8	4.0	4.3	---	---	---	6.6	6.1	6.3	9.3	7.1	8.2
3	4.9	4.1	4.4	6.6	6.0	6.3	6.4	6.0	6.1	10.8	8.5	9.5
4	4.8	3.9	4.3	6.4	6.0	6.2	6.4	5.8	6.0	11.2	9.4	10.3
5	4.6	3.6	3.9	7.5	5.8	7.1	6.3	5.7	6.0	11.5	9.8	10.6
6	8.3	4.2	6.5	8.3	7.5	7.9	6.3	5.7	6.0	10.7	9.4	10.0
7	7.4	6.5	7.1	8.6	8.1	8.3	6.4	5.9	6.1	9.9	8.4	9.1
8	6.5	6.2	6.4	8.6	7.8	8.3	7.4	6.3	6.9	9.7	7.9	8.8
9	6.4	6.1	6.3	7.8	7.3	7.6	7.6	7.1	7.3	10.5	7.7	9.1
10	6.3	5.8	6.1	7.5	7.2	7.3	7.9	7.1	7.5	11.3	8.6	10.0
11	6.2	5.7	5.9	7.8	7.5	7.7	8.3	7.4	8.0	11.4	8.8	10.1
12	5.8	5.0	5.3	7.7	7.5	7.7	8.2	7.8	8.0	11.2	8.3	9.6
13	5.4	5.0	5.2	8.1	7.5	7.9	8.3	7.7	7.9	10.6	7.8	9.1
14	5.3	4.6	5.0	9.1	8.0	8.3	8.2	7.7	7.9	11.4	8.0	9.5
15	5.2	4.8	5.0	9.0	8.5	8.8	8.5	7.9	8.2	12.2	8.5	10.1
16	5.4	4.7	5.0	8.5	7.9	8.2	8.8	8.2	8.5	12.4	8.7	10.1
17	7.0	4.5	5.5	7.9	7.6	7.8	8.9	8.3	8.6	11.0	8.3	9.6
18	---	---	---	7.6	7.1	7.4	8.4	8.1	8.2	11.6	8.2	9.6
19	---	---	---	7.2	6.8	7.0	8.7	8.0	8.3	11.6	8.4	9.5
20	---	---	---	6.8	6.6	6.7	8.4	7.9	8.1	10.6	8.0	8.9
21	---	---	---	7.0	6.6	6.8	8.3	7.5	7.8	10.5	7.5	8.7
22	---	---	---	7.3	6.8	7.0	8.8	7.4	8.1	9.8	7.4	8.4
23	---	---	---	7.1	6.9	7.0	10.0	8.8	9.3	10.7	7.8	9.0
24	---	---	---	7.1	6.8	7.0	10.3	9.3	9.8	11.2	8.4	9.4
25	---	---	---	6.9	6.5	6.7	10.5	9.5	9.9	10.9	8.4	9.3
26	---	---	---	6.9	6.4	6.6	10.3	9.6	9.9	10.3	8.1	8.9
27	---	---	---	6.7	6.3	6.5	9.9	9.0	9.5	10.2	7.9	8.7
28	---	---	---	6.7	6.2	6.4	9.8	8.8	9.2	8.8	7.7	8.1
29	---	---	---	6.5	6.0	6.2	9.8	8.8	9.2	8.5	7.0	7.6
30	---	---	---	6.4	5.9	6.1	10.1	8.7	9.3	9.3	7.5	8.3
31	---	---	---	---	---	---	9.6	8.4	8.9	10.1	8.0	8.9
MONTH	---	---	---	---	---	---	10.5	5.7	8.0	12.4	7.0	9.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.2	8.2	9.1	12.1	7.2	9.1	---	---	---	5.5	5.0	5.3
2	10.1	7.9	8.9	11.5	6.9	8.8	---	---	---	5.9	4.6	5.4
3	9.9	7.8	8.7	11.8	7.0	8.9	---	---	---	5.4	4.7	5.2
4	9.9	8.0	8.8	9.7	7.4	8.6	---	---	---	5.4	5.1	5.2
5	9.0	7.6	8.3	10.5	7.2	8.5	---	---	---	5.6	5.0	5.2
6	9.1	7.2	8.0	10.6	6.9	8.4	---	---	---	6.0	5.2	5.5
7	9.4	7.1	8.1	8.4	6.8	7.4	---	---	---	6.2	5.4	5.8
8	8.5	7.2	7.7	9.8	7.0	8.0	5.7	5.1	5.4	6.4	5.6	6.0
9	8.8	6.7	7.7	9.8	7.0	8.2	5.5	4.6	5.0	6.2	5.3	5.6
10	8.6	6.9	7.8	8.6	6.8	7.6	5.5	4.6	4.9	6.2	5.4	5.7
11	7.9	6.9	7.2	9.0	6.5	7.5	5.7	4.5	5.0	6.4	6.0	6.3
12	9.5	7.3	8.3	7.6	6.1	6.8	5.4	4.6	5.0	6.1	5.3	5.8
13	10.4	8.3	9.2	7.6	5.1	6.7	5.7	4.9	5.4	5.4	5.1	5.3
14	10.8	8.7	9.6	8.9	6.4	7.6	6.3	5.3	5.7	5.3	4.8	5.2
15	10.9	8.5	9.6	10.0	7.3	8.3	7.0	5.7	6.3	5.4	5.1	5.2
16	9.7	8.1	8.9	10.0	7.6	8.6	7.6	6.3	6.9	5.3	5.0	5.2
17	11.1	7.8	9.2	9.0	7.1	7.9	8.1	7.0	7.5	5.3	5.0	5.2
18	11.5	8.0	9.5	7.9	6.5	6.9	8.1	7.1	7.7	6.1	5.2	5.7
19	11.4	8.1	9.6	7.1	6.1	6.6	7.8	6.8	7.4	6.1	5.7	5.9
20	11.1	8.0	9.2	7.3	6.5	6.9	7.7	6.2	7.1	5.7	5.2	5.5
21	12.3	8.0	9.8	7.6	6.2	6.8	7.4	6.0	6.7	5.4	5.2	5.3
22	12.5	8.3	10.1	7.8	6.2	6.9	7.3	6.0	6.7	5.4	5.1	5.2
23	12.8	8.4	10.3	7.3	6.0	6.6	7.1	5.8	6.5	5.4	5.0	5.2
24	11.9	8.0	9.8	6.7	5.7	6.1	6.4	5.3	5.7	5.6	5.1	5.3
25	11.1	7.7	9.2	6.9	5.5	6.2	6.4	5.3	5.8	5.7	5.1	5.4
26	9.5	7.2	8.2	7.2	5.8	6.5	6.7	5.7	6.1	5.7	5.2	5.5
27	11.4	6.9	8.7	6.8	6.0	6.3	5.9	5.3	5.8	6.4	5.2	5.9
28	11.9	7.0	8.9	---	---	---	5.5	5.0	5.3	6.0	5.2	5.7
29	---	---	---	---	---	---	5.5	4.8	5.1	5.6	5.2	5.3
30	---	---	---	---	---	---	5.5	4.8	5.2	5.4	5.1	5.2
31	---	---	---	---	---	---	---	---	---	5.2	4.8	5.0
MONTH	12.8	6.7	8.9	---	---	---	---	---	---	6.4	4.6	5.5

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	5.4	4.7	5.0	6.1	5.4	5.7	5.3	4.5	5.0	6.1	5.1	5.6
2	5.5	4.8	5.1	6.1	5.4	5.8	5.6	4.7	5.1	5.7	4.9	5.3
3	5.8	4.9	5.4	6.5	5.4	5.9	5.5	4.7	5.1	5.6	4.8	5.1
4	5.9	5.2	5.6	6.1	5.3	5.7	---	---	---	5.2	4.7	4.9
5	6.1	5.0	5.6	6.5	5.2	6.1	---	---	---	5.2	4.4	4.8
6	6.2	5.0	5.5	6.0	5.2	5.6	---	---	---	5.6	4.6	5.0
7	6.3	4.9	5.5	6.2	5.1	5.7	6.2	4.8	5.3	---	---	---
8	6.5	4.8	5.6	6.5	5.3	5.9	6.3	4.9	5.4	5.6	4.6	4.9
9	6.4	4.7	5.5	6.5	5.2	5.9	6.1	4.6	5.3	6.4	5.1	5.7
10	6.4	5.0	5.6	6.4	5.1	5.7	6.2	4.6	5.3	5.7	5.0	5.4
11	6.5	4.7	5.4	6.4	5.9	6.1	6.1	4.5	5.3	5.8	5.0	5.3
12	6.0	4.0	4.9	6.6	6.0	6.3	6.0	4.2	5.0	6.0	5.0	5.4
13	6.0	3.8	5.1	6.2	5.9	6.1	5.7	3.9	4.9	5.8	4.8	5.3
14	5.1	3.6	4.3	5.9	5.2	5.4	6.0	4.0	4.9	6.2	4.9	5.5
15	5.4	4.2	4.7	5.5	5.1	5.3	6.2	4.7	5.2	6.2	4.8	5.6
16	5.9	5.0	5.4	5.5	5.0	5.3	5.8	4.5	5.1	6.5	4.8	5.7
17	5.3	4.6	4.9	5.4	4.7	5.0	5.6	4.1	4.8	6.8	5.1	6.0
18	5.3	4.5	4.9	5.8	5.1	5.4	5.6	3.9	4.8	6.7	5.1	5.9
19	6.9	4.7	5.3	6.4	5.5	6.1	5.5	3.8	4.7	6.4	4.8	5.9
20	6.4	5.0	5.9	6.4	5.5	6.0	5.5	3.7	4.7	6.5	4.9	5.9
21	7.0	5.9	6.3	5.9	5.0	5.4	5.3	3.6	4.6	6.5	5.0	5.7
22	6.7	5.9	6.4	5.1	4.9	5.0	5.1	3.5	4.4	6.3	5.1	5.7
23	6.4	5.9	6.2	5.0	4.6	4.8	4.8	3.6	4.3	6.5	5.1	5.7
24	6.0	5.6	5.8	5.1	4.7	4.9	6.4	4.1	5.2	7.1	5.6	6.1
25	6.2	5.3	5.6	5.2	4.8	5.0	6.0	5.3	5.7	6.5	5.8	6.1
26	5.9	5.3	5.6	5.3	4.8	5.0	5.6	5.0	5.2	5.9	5.3	5.6
27	5.5	5.2	5.3	5.3	4.8	5.0	5.0	4.3	4.7	6.0	5.4	5.7
28	5.7	5.2	5.5	5.2	4.8	5.0	5.0	4.2	4.5	5.5	4.8	5.2
29	5.8	5.2	5.5	5.1	4.6	4.8	4.9	4.3	4.6	5.3	4.2	4.6
30	5.9	5.4	5.7	5.5	4.5	5.0	6.3	4.2	5.2	6.1	3.9	5.0
31	---	---	---	5.5	4.4	5.0	6.0	5.2	5.6	---	---	---
MONTH	7.0	3.6	5.4	6.6	4.4	5.5	---	---	---	---	---	---

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08178880 MEDINA RIVER AT BANDERA, TX

LOCATION.--Lat 29°43'25", long 99°04'11", Bandera County, Hydrologic Unit 12100302, on left bank, 40 ft downstream from centerline of State Highway 173 at Bandera, 1.9 mi upstream from Bandera Creek, and 5.6 mi downstream from Indian Creek.

DRAINAGE AREA.--427 mi^2.

PERIOD OF RECORD.--Oct 1982 to current year.
Water-quality records.--Chemical data: Jan 1983 to Sep 1993. Biochemical data: Jan 1983 to Sep 1993. Pesticide data: Jan 1983 to Sep 1993.

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

REMARKS.--No estimated daily discharges. Records good. 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 2	0900	11,100	16.20	Jun 21	0130	1,950	8.62
Jun 13	0500	1,530	7.91	Jul 11	1230	2,030	8.76

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	415	197	123	97	75	86	72	82	111	60	42
2	2660	469	191	122	94	75	85	77	77	108	60	41
3	547	348	184	121	95	73	84	78	73	107	59	41
4	306	305	179	119	95	72	83	78	70	109	60	40
5	237	419	174	119	94	72	82	75	67	109	62	39
6	482	375	168	119	94	70	80	70	63	109	61	38
7	366	362	157	117	95	69	79	67	61	107	60	39
8	280	342	146	117	93	70	80	64	60	106	59	40
9	231	324	142	115	93	69	80	64	61	104	58	40
10	200	304	219	113	93	69	79	85	61	112	57	42
11	179	278	249	112	90	68	77	92	59	1050	54	40
12	167	269	201	112	88	68	75	98	58	368	53	39
13	158	280	177	110	89	74	75	94	258	171	52	37
14	152	369	165	109	88	77	75	91	72	123	51	37
15	146	416	157	108	88	74	73	88	66	103	50	37
16	138	386	149	107	87	72	74	86	72	90	48	35
17	150	365	148	107	86	71	72	85	66	83	47	34
18	316	349	147	106	86	75	72	87	65	79	47	34
19	335	337	144	105	85	83	70	89	65	78	46	34
20	287	322	141	105	84	80	69	89	72	77	44	33
21	253	306	139	104	83	78	67	87	1020	75	43	32
22	224	291	133	104	81	77	66	85	588	73	42	31
23	203	280	127	102	81	75	66	81	342	70	42	31
24	189	269	127	100	80	75	68	78	248	69	45	31
25	181	260	126	100	79	74	73	75	193	67	49	31
26	174	249	124	101	79	75	83	72	166	64	49	31
27	169	239	124	100	79	77	84	70	153	64	46	30
28	165	230	124	99	77	89	82	156	138	63	43	28
29	160	222	123	100	---	93	78	112	128	63	42	29
30	156	210	122	98	---	89	74	92	119	62	43	26
31	152	---	122	97	---	87	---	87	---	62	42	---
TOTAL	9416	9590	4826	3371	2453	2345	2291	2624	4623	4036	1574	1062
MEAN	304	320	156	109	87.6	75.6	76.4	84.6	154	130	50.8	35.4
MAX	2660	469	249	123	97	93	86	156	1020	1050	62	42
MIN	53	210	122	97	77	68	66	64	58	62	42	26
AC-FT	18680	19020	9570	6690	4870	4650	4540	5200	9170	8010	3120	2110

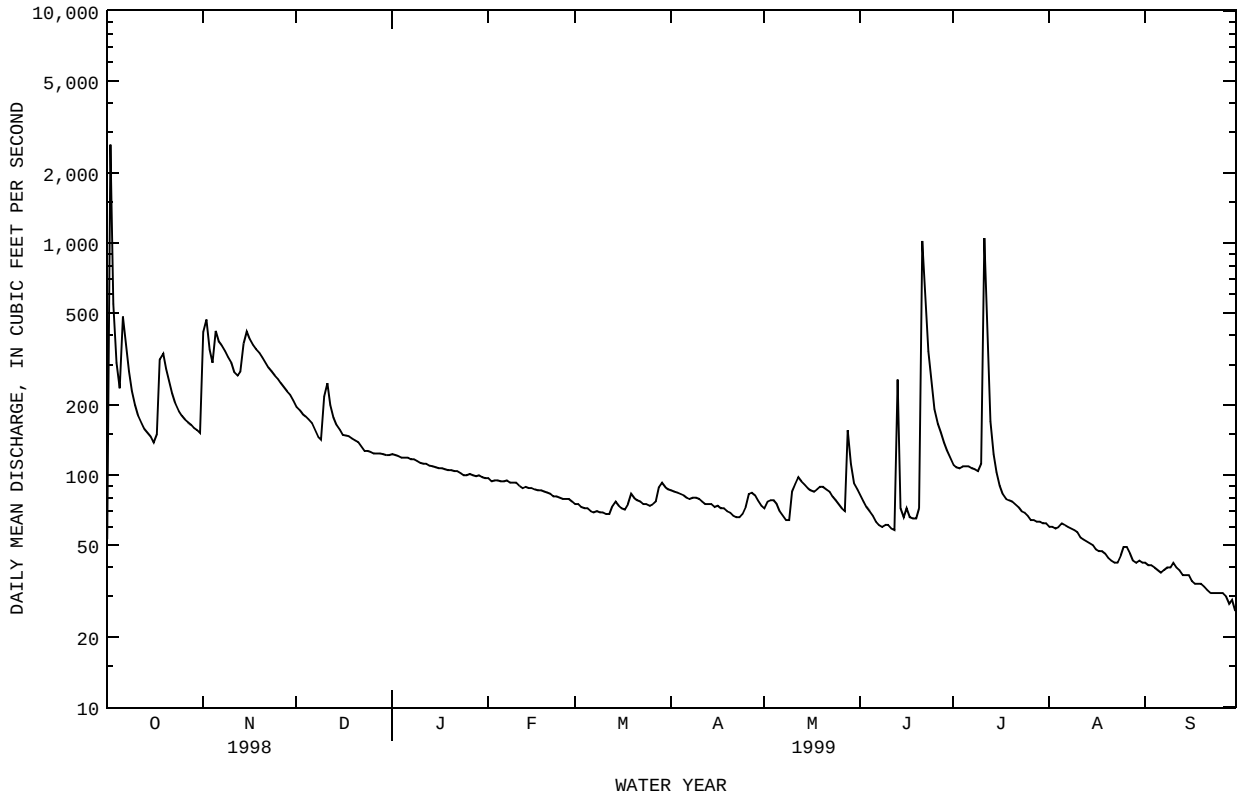
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1999, BY WATER YEAR (WY)

MEAN	107	97.5	166	133	138	165	131	170	347	131	62.0	71.2
MAX	630	373	1278	638	922	985	547	696	2785	440	221	249
(WY)	1987	1987	1992	1992	1992	1992	1992	1987	1987	1988	1998	1986
MIN	25.7	27.3	27.0	28.4	35.8	32.7	28.6	14.6	8.77	2.36	2.00	6.80
(WY)	1985	1994	1994	1990	1996	1996	1996	1996	1996	1996	1996	1984

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1983 - 1999	
ANNUAL TOTAL	58531		48211			
ANNUAL MEAN	160		132		143	
HIGHEST ANNUAL MEAN					560	1987
LOWEST ANNUAL MEAN					33.7	1996
HIGHEST DAILY MEAN	3140	Aug 23	2660	Oct 2	16800	Jun 22 1997
LOWEST DAILY MEAN	13	Jul 31	26	Sep 30	.00	Aug 4 1996
ANNUAL SEVEN-DAY MINIMUM	14	Jul 30	29	Sep 24	.00	Aug 4 1996
INSTANTANEOUS PEAK FLOW			11100	Oct 2	c55800	Jun 3 1987
INSTANTANEOUS PEAK STAGE			16.20	Oct 2	24.90	Jun 3 1987
INSTANTANEOUS LOW FLOW					.00	Aug 4 1996
ANNUAL RUNOFF (AC-FT)	116100		95630		103600	
10 PERCENT EXCEEDS	308		273		266	
50 PERCENT EXCEEDS	109		86		63	
90 PERCENT EXCEEDS	28		43		21	

c From rating curve extended above current-meter discharge measurement of 27,000 ft^3/s.

08178880 MEDINA RIVER AT BANDERA, TX--Continued



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 mi^2.

WATER-CONTENT RECORDS

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

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

GAGE.--Water stage recorder. Datum of the gage is 7.80 ft below sea level. Satellite telemeter at station.

REMARKS.--The lake is formed by a gravity-type concrete dam, 1580 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 Reservoir 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. Data regarding the dam are given in the following table:

	Gage height (feet)
Top of dam	1,084.0
Crest of spillways	1,072.0
Water-supply outlet pipe (invert)	966.5
Lowest gated outlet (invert)	920.0

EXTREMES (AT 0800 HOURS) FOR PERIOD OF RECORD.--Maximum daily contents, 289,900 acre-ft May 29, 1987 (gage height, 1078.2 ft); minimum, 780 acre-feet Apr 11, 1948 (gage height, 944.0 ft).

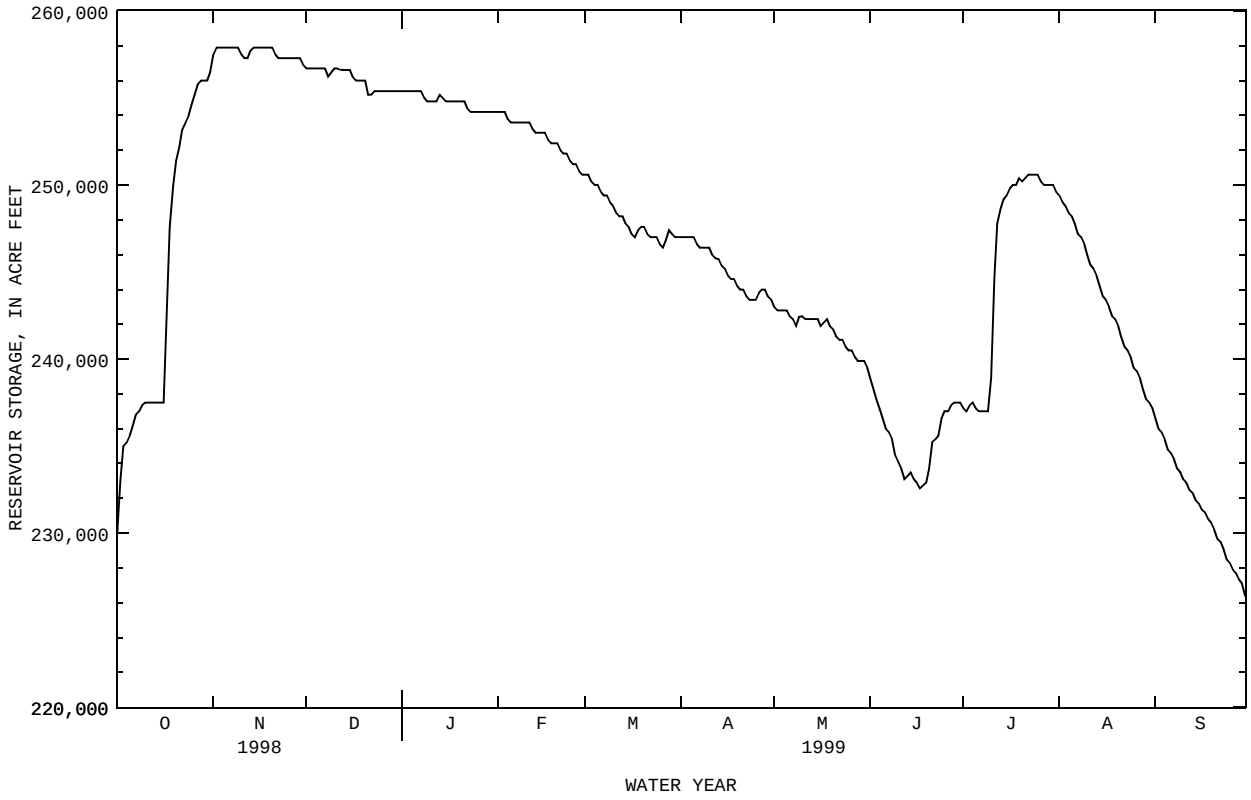
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230000	256700	256700	255400	254200	250600	247000	243400	239300	237500	249400	237000
2	230000	257900	256700	255400	254200	250600	247000	242800	238700	237000	249400	236400
3	234600	257900	256700	255400	254200	250600	247000	242800	238100	237000	248800	235800
4	235200	257900	256700	255400	254200	250000	247000	242800	237500	237500	248800	235800
5	235200	257900	256700	255400	253600	250000	247000	242800	237000	237500	248200	235200
6	235800	257900	256700	255400	253600	250000	247000	242800	236400	237000	248200	234600
7	236400	257900	256700	255400	253600	249400	246400	242300	235800	237000	247600	234600
8	237000	257900	256700	255400	253600	249400	246400	242300	235800	237000	247000	234100
9	237000	257900	256000	254800	253600	249400	246400	241700	235200	237000	247000	233500
10	237500	257900	256700	254800	253600	248800	246400	242800	234100	237000	246400	233500
11	237500	257300	256700	254800	253600	248800	246400	242300	234100	239900	245800	232900
12	237500	257300	256700	254800	253600	248200	245800	242300	233500	247000	245200	232900
13	237500	257300	256600	254800	253000	248200	245800	242300	232900	248200	245200	232300
14	237500	257900	256600	255400	253000	248200	245700	242300	233500	248800	244600	232300
15	237500	257900	256600	254800	253000	247600	245200	242300	233500	249400	244000	231700
16	237500	257900	256600	254800	253000	247600	245200	242300	232900	249400	243400	231700
17	237500	257900	256000	254800	253000	247000	244600	241700	232900	250000	243400	231200
18	245200	257900	256000	254800	252400	247000	244600	242300	232400	250000	242800	231200
19	248800	257900	256000	254800	252400	247600	244600	242300	232900	250000	242300	230600
20	250600	257900	256000	254800	252400	247600	244000	241700	232900	250600	242300	230600
21	251800	257900	256000	254800	252400	247600	244000	241700	234100	250000	241700	230000
22	252400	257300	254800	254800	251800	247000	244000	241100	235800	250600	241100	229500
23	253600	257300	255400	254200	251800	247000	243400	241100	235200	250600	240500	229500
24	253600	257300	255400	254200	251800	247000	243400	241100	235800	250600	240500	228900
25	254200	257300	255400	254200	251200	247000	243400	240500	237000	250600	239900	228300
26	254800	257300	255400	254200	251200	246400	243400	240500	237000	250600	239300	228300
27	255400	257300	255400	254200	251200	246400	244000	240500	237000	250000	239300	227700
28	256000	257300	255400	254200	250600	247000	244000	239900	237500	250000	238700	227700
29	256000	257300	255400	254200	---	247600	244000	239900	237500	250000	238100	227100
30	256000	257300	255400	254200	---	247000	243400	239900	237500	250000	237500	227100
31	256000	---	255400	254200	---	247000	---	239900	---	250000	237500	---
MAX	256000	257900	256700	255400	254200	250600	247000	243400	239300	250600	249400	237000
MIN	230000	256700	254800	254200	250600	246400	243400	239900	232400	237000	237500	227100
(+)	1072.2	1072.4	1072.1	1071.9	1071.3	1070.7	1070.1	1069.5	1069.1	1071.2	1069.1	1067.2
(@)	+25700	+1300	-1900	-1200	-3600	-3600	-3600	-3500	-2400	+12500	-12500	-10400

CAL YR 1998 MAX 258500 MIN 207800 (@) +34400
WTR YR 1999 MAX 257900 MIN 227100 (@) -3200

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

08179500 MEDINA LAKE NEAR SAN ANTONIO, TX--Continued



08179500 MEDINA LAKE NEAR SAN ANTONIO, TX--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--Oct 1998 to Sep 1999.

INSTRUMENTATION.--Recording tipping bucket rain gage at site.

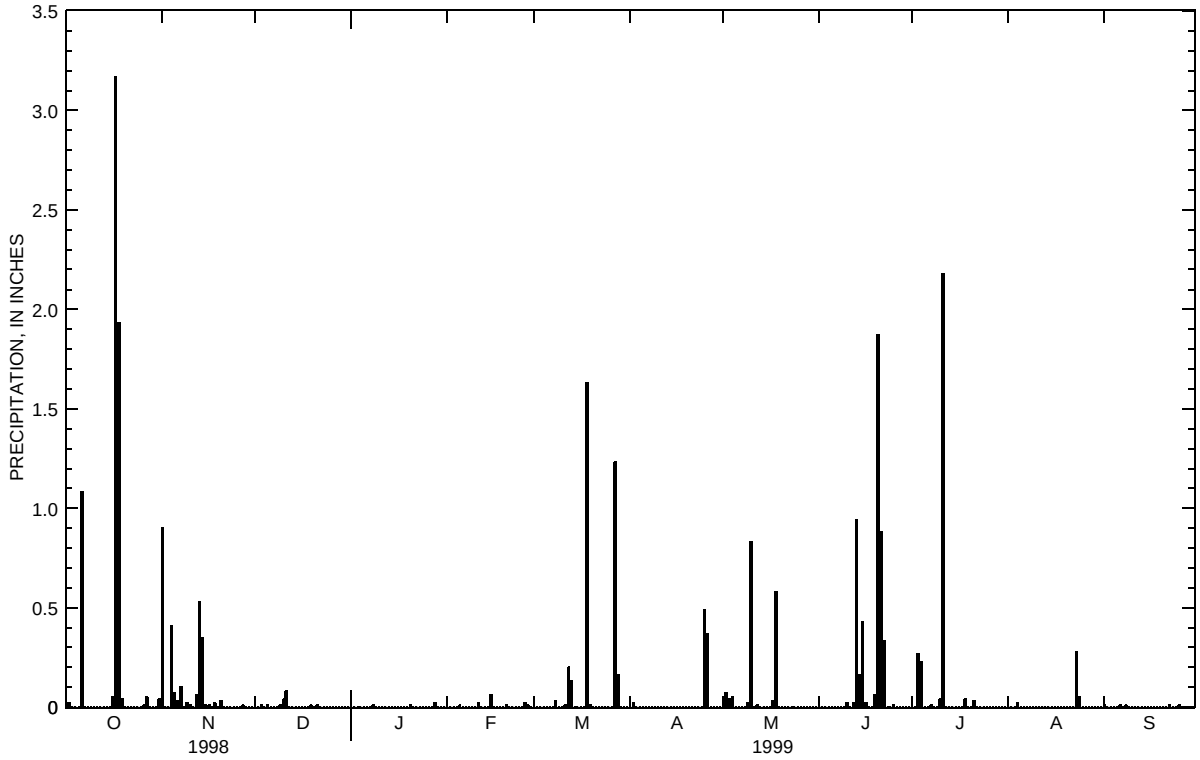
REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 3.17 in., Oct 17.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.90	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
2	.02	.00	.00	.00	.00	.00	.02	.07	.00	.00	.00	.00
3	.00	.00	.01	.00	.00	.00	.00	.04	.00	.27	.00	.00
4	.00	.41	.00	.00	.00	.00	.00	.05	.00	.23	.02	.00
5	.00	.07	.01	.00	.01	.00	.00	.00	.00	.00	.00	.00
6	1.08	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
7	.00	.10	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
8	.00	.00	.00	.01	.00	.03	.00	.00	.00	.00	.00	.01
9	.00	.02	.01	.00	.00	.00	.00	.02	.00	.00	.00	.00
10	.00	.01	.04	.00	.00	.00	.00	.83	.02	.04	.00	.00
11	.00	.00	.08	.00	.02	.01	.00	.00	.00	2.18	.00	.00
12	.00	.06	.00	.00	.00	.20	.00	.01	.02	.00	.00	.00
13	.00	.53	.00	.00	.00	.13	.00	.00	.94	.00	.00	.00
14	.00	.35	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00
15	.00	.01	.00	.00	.06	.00	.00	.00	.43	.00	.00	.00
16	.05	.01	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
17	3.17	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
18	1.93	.02	.00	.00	.00	1.63	.00	.58	.00	.04	.00	.00
19	.04	.00	.01	.00	.00	.01	.00	.00	.06	.00	.00	.00
20	.00	.03	.00	.01	.01	.00	.00	.00	1.87	.00	.00	.00
21	.00	.00	.01	.00	.00	.00	.00	.00	.88	.03	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.33	.00	.00	.01
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00
25	.00	.00	.00	.00	.00	.00	.49	.00	.01	.00	.00	.01
26	.01	.00	.00	.00	.02	.00	.37	.00	.00	.00	.00	.00
27	.05	.01	.00	.00	.01	1.23	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.02	.00	.16	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.04	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	6.39	2.56	0.17	0.04	0.13	3.40	0.88	1.63	4.74	2.80	0.35	0.05
MAX	3.17	.90	.08	.02	.06	1.63	.49	.83	1.87	2.18	.28	.01
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

08179500 MEDINA LAKE NEAR SAN ANTONIO, TX--Continued



08180640 MEDINA RIVER AT LA COSTE, TX

LOCATION.--Lat 29°19'26", long 98°48'46", Medina County, Hydrologic Unit 12100302, at downstream side of bridge on Farm Road 471, 1.0 mi north of La Coste, 5.0 mi upstream from Sherer Creek, and 27.4 mi upstream from mouth.

DRAINAGE AREA.--805 mi^2, of which 634 mi^2 is above dam forming Medina Lake.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 667.15 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in water year 1987, at least 10% of contributing drainage area has been regulated by Medina Lake (station 08179500, normal storage 254,000 acre-ft) and by Medina Diversion Lake. A large part of the streamflow is lost into the Edwards and associated limestones where the Balcones Fault crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. There are several small diversions below Medina Diversion Dam.

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

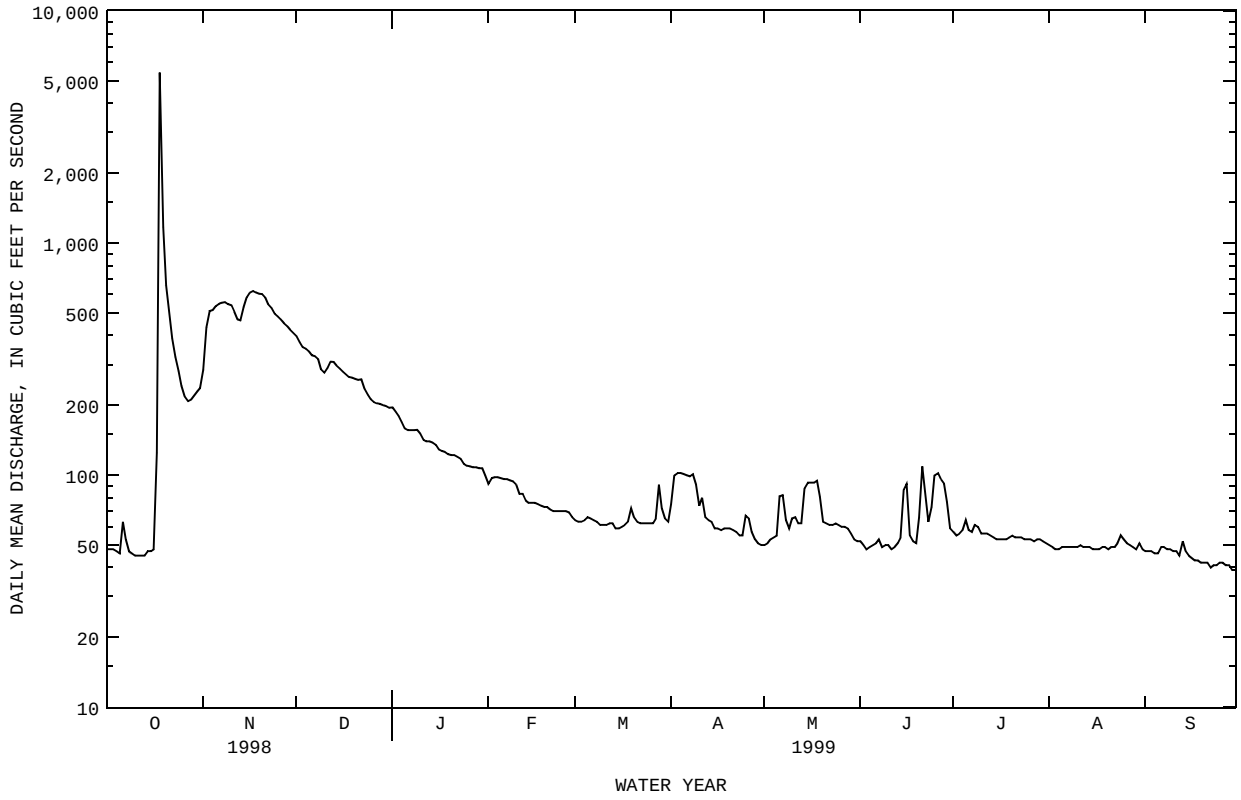
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	285	398	196	92	64	75	50	52	57	50	47
2	48	434	374	188	97	63	100	51	50	55	49	47
3	48	510	357	180	98	63	102	53	48	56	48	47
4	47	514	351	169	98	64	102	54	49	58	48	46
5	46	537	343	159	97	66	101	55	50	64	49	46
6	63	548	329	156	96	65	100	81	51	58	49	49
7	53	553	325	156	96	64	99	82	53	57	49	49
8	47	556	316	156	95	63	101	64	49	61	49	48
9	46	546	286	157	94	61	91	59	50	60	49	48
10	45	539	277	151	91	61	74	65	50	56	49	47
11	45	506	290	142	83	61	80	66	48	56	50	47
12	45	469	308	140	83	62	66	62	49	56	49	45
13	45	464	307	140	78	62	64	62	51	55	49	52
14	47	529	297	138	76	59	63	88	54	54	49	47
15	47	586	287	135	76	59	59	93	87	53	48	45
16	48	612	279	129	76	60	59	93	92	53	48	44
17	125	621	272	127	75	61	58	93	55	53	48	43
18	5420	612	265	126	74	63	59	95	52	53	49	43
19	1170	605	263	123	73	72	59	81	51	54	49	42
20	659	603	260	122	73	66	59	63	66	55	48	42
21	494	581	257	122	71	63	58	62	109	54	49	42
22	389	544	259	120	70	62	57	61	83	54	49	40
23	324	526	235	118	70	62	55	61	63	54	51	41
24	281	497	222	112	70	62	55	62	73	53	55	41
25	242	482	213	110	70	62	67	61	100	53	53	42
26	218	469	207	109	70	62	65	60	102	53	51	42
27	209	452	204	108	69	65	57	60	96	52	50	41
28	212	439	203	108	66	91	53	59	92	53	49	41
29	220	424	200	107	---	72	51	56	77	53	48	39
30	230	410	198	107	---	65	50	53	59	52	51	39
31	238	---	195	100	---	63	---	52	---	51	48	---
TOTAL	11199	15453	8577	4211	2277	1988	2139	2057	1961	1706	1530	1332
MEAN	361	515	277	136	81.3	64.1	71.3	66.4	65.4	55.0	49.4	44.4
MAX	5420	621	398	196	98	91	102	95	109	64	55	52
MIN	45	285	195	100	66	59	50	50	48	51	48	39
AC-FT	22210	30650	17010	8350	4520	3940	4240	4080	3890	3380	3030	2640

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1999, BY WATER YEAR (WY)

MEAN	70.3	90.5	92.7	145	247	246	148	247	655	154	64.8	49.6
MAX	361	515	319	647	2256	1943	1052	1335	4718	702	213	125
(WY)	1999	1999	1992	1992	1992	1992	1992	1992	1987	1987	1987	1987
MIN	23.5	21.4	21.6	20.5	24.9	24.3	26.4	25.5	17.7	22.7	21.9	18.8
(WY)	1992	1990	1990	1997	1991	1990	1996	1990	1990	1989	1989	1989

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1987 - 1999	
ANNUAL TOTAL	66096		54430			
ANNUAL MEAN	181		149		138	
HIGHEST ANNUAL MEAN					836	1992
LOWEST ANNUAL MEAN					29.1	1989
HIGHEST DAILY MEAN	5420	Oct 18	5420	Oct 18	18900	May 30 1987
LOWEST DAILY MEAN	36	Jul 28	39	Sep 29	12	Dec 12 1989
ANNUAL SEVEN-DAY MINIMUM	36	Jul 25	41	Sep 24	13	Dec 9 1989
INSTANTANEOUS PEAK FLOW			13400	Oct 18	24600	May 30 1987
INSTANTANEOUS PEAK STAGE			21.31	Oct 18	24.05	May 30 1987
ANNUAL RUNOFF (AC-FT)	131100		108000		99700	
10 PERCENT EXCEEDS	501		364		307	
50 PERCENT EXCEEDS	75		64		43	
90 PERCENT EXCEEDS	44		48		25	

08180640 MEDINA RIVER AT LA COSTE, TX--Continued



08180640 MEDINA RIVER AT LA COSTE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jan 1987 to Sep 1995, Apr 1996 to current year.
BIOCHEMICAL DATA: Feb 1987 to Aug 1995, Apr 1996 to current year.
PESTICIDE DATA: Apr 1971 to Sep 1981, Apr 1996 to current year.
SEDIMENT DATA: Apr 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jan 1987 to Sep 1995, Mar 1996 to current year.
PH: Jan 1987 to Sep 1995, Mar 1996 to current year.
WATER TEMPERATURE: Jan 1987 to Sep 1995, Mar 1996 to current year.
DISSOLVED OXYGEN: Jan 1987 to Sep 1995, Mar 1996 to current year.

INSTRUMENTATION.--Water-quality monitor Jan 1987 to Sep 30, 1995, Mar 1996 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 720 microsiemens, Sep 3, 4, 1987; minimum, 135 microsiemens, May 6, 1993.
PH: Maximum, 8.7 units, Jun 20, 1989; minimum, 6.8 units, Aug 4, 5, 1989.
WATER TEMPERATURE: Maximum, 30.5°C, Jun 24, 26, 27, 1990; minimum, 2.5°C, Dec 24, 1989.
DISSOLVED OXYGEN: Maximum, 13.1 mg/L, Jan 10, 11, 1988; minimum, 3.7 mg/L, May 23, 1992.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 578 microsiemens, Mar 12; minimum, 144 microsiemens, Oct 18.
PH: Maximum, 8.3 units, Dec 8, 11-13, 16-17, 19, 22-24, 27, Jan 3-4; minimum, 7.6 units, Oct 1-2, 7-8, 18-19, May 23-27, 29, Jun 17-19.
WATER TEMPERATURE: Maximum, 28.9°C, Aug 13-14; minimum, 10.6°C, Dec 26.
DISSOLVED OXYGEN: Maximum, 13.0 mg/L, Dec 25, Jan 5; minimum, 5.5 mg/L, Aug 1-3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)
DEC												
07...	1140	325	449	8.1	20.5	10	.65	8.1	92	190	88	130
MAY												
03...	1150	53	553	7.6	22.5	15	12	7.8	91	92	410	22
AUG												
10...	1545	49	515	8.0	29.1	--	2.8	6.2	83	90	40	120
10...	1600	--	--	--	--	--	--	--	--	--	--	--
10...	1615	--	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
DEC												
07...	1.2	<1.0	<1.0	2.0	<1.0	<1.0	1.2	<1.0	1.4	<1.0	<1.0	1.8
MAY												
03...	<1.0	<1.0	<1.0	5.5	<1.0	<1.0	1.2	<1.0	1.5	<1.0	<1.0	<1.0
AUG												
10...	<1.0	<1.0	<1.0	1.6	<1.0	1.8	1.2	<1.0	1.1	<1.0	<1.0	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	BORON, DIS-SOLVED (UG/L AS B) (01020)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)
DEC												
07...	<1.0	<1.0	31	1	13	<1	1.9	<10	68	.20	9.4	0
MAY												
03...	<1.0	<1.0	46	<1	16	<1	2.1	<10	120	.22	13	0
AUG												
10...	<1.0	<1.0	43	<1	15	<1	2.0	<10	119	.17	12	0
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	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)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	STRONTIUM, DIS-SOLVED (UG/L AS SR) (01080)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
DEC												
07...	217	178	36	E5	--	9.3	11	466	61	<10	<.050	<.020
MAY												
03...	263	215	42	9	--	19	15	518	70	<10	.017	.047
AUG												
10...	246	201	40	8	284	15	13	527	70	<10	<.050	<.020
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOSPHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS DIS-SOLVED (MG/L AS P) (00666)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)
DEC												
07...	1.43	.013	.17	.15	<.050	<.010	--	--	--	--	<.0030	<.0020
MAY												
03...	5.28	.017	.23	.16	.006	<.010	--	--	--	--	<.0030	<.0020
AUG												
10...	4.40	<.010	.15	.12	<.004	<.010	--	--	--	--	<.0030	<.0020
10...	--	--	--	--	--	--	229.4	36.1	248.1	4.50	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZINPHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLORPYRIFOS DISSOLVED (UG/L) (38933)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON, DISSOLVED (UG/L) (39572)
DEC												
07...	<.002	.012	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0040	<.0020	E.0174	.018
MAY												
03...	<.002	.063	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0040	<.0020	E.0984	<.002
AUG												
10...	<.002	.016	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0040	<.0020	E.0606	.002
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	DIELDRIN DISSOLVED (UG/L) (39381)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DISSOLVED (UG/L) (39341)	LINURON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALATHION, DISSOLVED (UG/L) (39532)	METOLACHLOR WATER DISSOLV (UG/L) (39415)	METRIBUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)
DEC												
07...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
MAY												
03...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
AUG												
10...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	.005	<.002	<.004	<.0040
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NAPROPAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	PARATHION, DISSOLVED (UG/L) (39542)	METHYL PARATHION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEBULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDIMETHALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PROMETON, WATER, DISS, REC (UG/L) (04037)	PROPCHLOR, WATER, DISS, REC (UG/L) (04024)	PROPANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PROPARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRONAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SIMAZINE, WATER, DISS, REC (UG/L) (04035)
DEC												
07...	<.0030	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030	<.0050
MAY												
03...	<.0030	<.004	<.0060	<.0040	<.0040	<.0020	E.0032	<.0070	<.0040	<.0130	<.0030	<.0050
AUG												
10...	<.0030	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030	<.0050
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	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)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	P,P' DDE DISSOLV (UG/L) (34653)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)
DEC												
07...	<.0100	<.0070	<.0130	99.1	<.0020	<.0010	<.0020	<.0020	84.7	<.0060	<.0050	98.7
MAY												
03...	<.0100	<.0070	<.0130	123	<.0020	<.0010	<.0020	<.0020	107	<.0060	<.0050	109
AUG												
10...	<.0100	<.0070	<.0130	--	<.0020	<.0010	<.0020	<.0020	96.8	<.0060	<.0050	103
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

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)	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)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	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)	BDMC, SURROG, WATER, UNFLTRD REC PERCENT (99835)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)
DEC												
07...	<.0350	<.150	<.240	<.0210	<.0140	<.420	<.0350	<.550	<.100	<.0210	82.0	<.0140
MAY												
03...	<.0350	<.150	<.240	<.0210	<.0140	<.420	<.0350	<3.80	<.100	<.0210	100	<.0140
AUG												
10...	<.0400	<.110	<.100	<.0600	<.110	<.420	<.0900	<5.50	<.100	<.0210	68.0	<.0350
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BRO-MACIL, WATER, DISS, REC (UG/L) (04029)	BRO-MOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CHLOR-AMBEN, WATER, FLTRD, GF 0.7U REC (UG/L) (49307)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	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)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)
DEC												
07...	<.0350	<.0350	<.0080	<.120	<.420	<.480	<.230	<.0170	<.0350	<1.20	<.0320	<.0350
MAY												
03...	<.0350	<.0350	<.0080	<.120	<.420	<.480	<.230	<.0170	<.0350	<1.20	<.0320	<.0350
AUG												
10...	<.0600	<.0400	<.0700	<.290	<.140	<.480	<1.10	<.0390	<.0430	<.0700	<.0320	<.0600
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	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)	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												
07...	<.0200	<.0130	<.0350	<.0180	<.170	<.140	<.0260	<.250	<.0150	<.0240	<.310	<.0180
MAY												
03...	<.0200	<.0130	<.0350	<.0180	<.170	<.140	<.0260	<.610	<.0150	<.0240	<.310	<.120
AUG												
10...	<.0600	<.0700	<.0600	<.0900	<.170	<.130	<.0260	<3.60	<.0700	<.330	<.310	<.0180
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	ALPHA BHC TOTAL (UG/L) (39337)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	LINDANE TOTAL (UG/L) (39340)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	ALDRIN, TOTAL (UG/L) (39330)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
DEC												
07...	<.0500	<.0350	<.0350	<.250	<.030	<.030	<.030	<.090	<.030	<.040	<.800	<.100
MAY												
03...	<.0500	<.0350	<.0350	<.250	<.030	<.030	<.030	<.090	<.030	<.040	<.800	<.100
AUG												
10...	<.0500	<.0350	<.0800	<.250	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DI-ELDRIN TOTAL (UG/L) (39380)	P,P' DDE, TOTAL (UG/L) (39320)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDO-SULFAN II TOTAL (UG/L) (34356)	P,P' DDD, TOTAL (UG/L) (39310)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	TOX-APHENE, TOTAL (UG/L) (39400)
DEC												
07...	<.100	<.100	<.020	<.040	<.060	<.040	<.100	<.200	<.600	<.100	<.100	<2.00
MAY												
03...	<.100	<.100	<.020	<.040	<.060	<.040	<.100	<.200	<.600	<.100	<.100	<2.00
AUG												
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	DI-BROMO-METHANE WATER WHOLE RECOVER (UG/L) (30217)	BENZENE TOTAL (UG/L) (34030)	BROMO-FORM TOTAL (UG/L) (32104)	CARBON TETRA-CHLO-RIDE TOTAL (UG/L) (32102)	CHLORO-BENZENE TOTAL (UG/L) (34301)
DEC												
07...	<1.00	<.100	<.100	<.100	<.100	<.100	<.100	<.200	<.200	<.200	<.200	<.200
MAY												
03...	<1.00	<.100	<.100	<.100	<.100	<.100	<.100	--	--	--	--	--
AUG												
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CHLORO-DI-BROMO-METHANE TOTAL (UG/L) (32105)	CHLORO-ETHANE TOTAL (UG/L) (34311)	CHLORO-FORM TOTAL (UG/L) (32106)	BROMO-DI-CHLORO-METHANE TOTAL (UG/L) (32101)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L) (34668)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L) (34496)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L) (32103)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L) (34501)	TRANS-1,2-DI-CHLORO-ETHENE TOTAL (UG/L) (34546)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L) (34541)	ETHYL-BENZENE TOTAL (UG/L) (34371)	METHYL-BROMIDE TOTAL (UG/L) (34413)
DEC												
07...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
MAY												
03...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL ENE CHLO-RIDE TOTAL (UG/L) (34423)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L) (34516)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L) (34475)	TOLUENE TOTAL (UG/L) (34010)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L) (34506)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L) (34511)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L) (39180)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L) (34488)	VINYL CHLO-RIDE TOTAL (UG/L) (39175)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34566)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34571)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L) (77651)
DEC												
07...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
MAY												
03...	--	--	--	--	--	--	--	--	--	<5.00	<5.00	--
AUG												
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL-CHLO-RIDE TOTAL (UG/L) (34418)	BENZENE O-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34536)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34704)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34699)	STYRENE TOTAL (UG/L) (77128)	XYLENE WATER UNFLTRD REC (UG/L) (81551)	DIBROMO CHLORO-PROPANE WATER WHOLE TOT.REC (UG/L) (82625)	1,1-DI CHLORO-PRO-PENE, WAT, WH TOTAL (UG/L) (77168)	2,2-DI CHLORO-PRO-PANE WAT, WH TOTAL (UG/L) (77170)	1,3-DI-CHLORO-PROPANE WAT. WH TOTAL (UG/L) (77173)	O-CHLORO-TOLUENE WATER WHOLE TOTAL (UG/L) (77275)	TOLUENE P-CHLOR WATER UNFLTRD REC (UG/L) (77277)
DEC												
07...	<.200	<.200	<.200	<.200	<.200	<.200	<1.00	<.200	<.200	<.200	<.200	<.200
MAY												
03...	--	<5.00	--	--	--	--	--	--	--	--	--	--
AUG												
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	123-TRI CHLORO-PROPANE WATER WHOLE TOTAL (UG/L) (77443)	ETHANE, 1112-TETRA-CHLORO-WAT UNF REC (UG/L) (77562)	ACRYLO-NITRILE TOTAL (UG/L) (34215)	METHYL TERT-BUTYL ETHER WAT UNF REC (UG/L) (78032)	METHANE BROMO CHLORO-WAT UNFLTRD REC (UG/L) (77297)	CIS-1,2-DI-CHLORO-ETHENE WATER TOTAL (UG/L) (77093)	ISO-PROPYL-BENZENE WATER WHOLE REC (UG/L) (77223)	BENZENE N-PROPY WATER UNFLTRD REC (UG/L) (77224)	BENZENE TERT-BUTYL-WATER UNFLTRD REC (UG/L) (77353)	BENZENE 124-TRI METHYL UNFILT RECOVER (UG/L) (77222)	BENZENE SEC BUTYL-WATER UNFLTRD REC (UG/L) (77350)	P-ISO-PROPYL-TOLUENE WATER WHOLE REC (UG/L) (77356)
DEC												
07...	<.200	<.200	<2.50	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
MAY												
03...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BENZENE N-BUTYL WATER UNFLTRD REC (UG/L) (77342)	BENZENE 1,2,4-TRI-CHLORO-WAT UNF REC (UG/L) (34551)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L) (39702)	NAPHTH-ALENE TOTAL (UG/L) (34696)	1,2,3-TRI-CHLORO BENZENE WAT, WH REC (UG/L) (77613)	FREON-113 WATER UNFLTRD REC (UG/L) (77652)	BENZENE 135-TRI METHYL WATER UNFLTRD REC (UG/L) (77226)	BROMO-BENZENE WATER, WHOLE, TOTAL (UG/L) (81555)	PARA-CHLORO-META CRESOL TOTAL (UG/L) (34452)	2-CHLORO-PHENOL TOTAL (UG/L) (34586)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L) (34601)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L) (34621)
DEC												
07...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<30.0	<5.00	<5.00	<20.0
MAY												
03...	--	<5.00	<5.00	E.025	--	--	--	--	<30.0	<5.00	<5.00	<20.0
AUG												
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	2,4-DI-METHYL-PHENOL TOTAL (UG/L) (34606)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L) (34657)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L) (34616)	2-NITRO-PHENOL TOTAL (UG/L) (34591)	4-NITRO-PHENOL TOTAL (UG/L) (34646)	PENTA-CHLORO-PHENOL TOTAL (UG/L) (39032)	PHENOL (C6H-5OH) TOTAL (UG/L) (34694)	ACE-NAPHTH-ENE TOTAL (UG/L) (34205)	ACE-NAPHTH-YLENE TOTAL (UG/L) (34200)	ANTHRA-CENE TOTAL (UG/L) (34220)	BENZI-DINE TOTAL (UG/L) (39120)	BENZ(A) ANTHRA-CENE WATER UNFLTRD REC (UG/L) (34526)
DEC												
07...	<5.00	<30.0	<20.0	<5.00	<30.0	<30.0	<5.00	<5.00	<5.00	<5.00	<40.0	<10.0
MAY												
03...	<5.00	<30.0	<20.0	E.192	E.650	<30.0	<5.00	<5.00	<5.00	<5.00	<40.0	<10.0
AUG												
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BENZO B FLUOR-AN-THENE TOTAL (UG/L) (34230)	BENZO K FLUOR-AN-THENE TOTAL (UG/L) (34242)	BENZO-A-PYRENE TOTAL (UG/L) (34247)	BENZO-[GHI]-PERY-LENE TOTAL (UG/L) (34521)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L) (34292)	BIS(2-CHLORO-ETHOXY) METHANE TOTAL (UG/L) (34278)	BIS(2-CHLORO-ETHYL) ETHER UNFLTRD RECOVER (UG/L) (34273)	BIS(2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L) (34283)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L) (34636)	2-CHLORO-NAPH-THALENE TOTAL (UG/L) (34581)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L) (34641)
DEC											
07...	<10.0	<10.0	<10.0	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
MAY											
03...	<10.0	<10.0	<10.0	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
AUG											
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--

DATE	CHRY-SENE TOTAL (UG/L) (34320)	1,2,5,6-DIBENZ-ANTHRA-CENE TOTAL (UG/L) (34556)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L) (39110)	3,3'-DI-CHLORO-BENZI-DINE TOTAL (UG/L) (34631)	DIETHYL PHTHAL-ATE TOTAL (UG/L) (34336)	DI-METHYL PHTHAL-ATE TOTAL (UG/L) (34341)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L) (34611)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L) (34626)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L) (34596)	BIS(2-ETHYL HEXYL) PHTHAL-ATE TOTAL (UG/L) (39100)	FLUOR-ENE TOTAL (UG/L) (34381)
DEC											
07...	<10.0	<10.0	<5.00	<20.0	<5.00	<5.00	<5.00	<5.00	<10.0	<5.00	<5.00
MAY											
03...	<10.0	<10.0	<5.00	<20.0	<5.00	<5.00	<5.00	<5.00	<10.0	<5.00	<5.00
AUG											
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	FLUOR-ANTHENE TOTAL (UG/L) (34376)	HEXA-CHLORO-BENZENE TOTAL (UG/L) (39700)	CYCLOPENTADIEN HEXA-CHLORO-UNFLTRD RECOVER (UG/L) (34386)	ETHANE HEXA-CHLORO-WATER UNFLTRD RECOVER (UG/L) (34396)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L) (34403)	ISO-PHORONE TOTAL (UG/L) (34408)	BENZENE NITRO-WATER UNFLTRD RECOVER (UG/L) (34447)	N-NITRO-SODI-METHYL-AMINE TOTAL (UG/L) (34438)	N-NITRO-SODI-PHENYL-AMINE TOTAL (UG/L) (34433)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L) (34428)	PHENAN-THRENE TOTAL (UG/L) (34461)
DEC											
07...	<5.00	<5.00	<20.0	<5.00	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
MAY											
03...	<5.00	<5.00	<20.0	<5.00	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	E.003
AUG											
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--

DATE	PYRENE TOTAL (UG/L) (34469)	1,2-DI-PHENYL-HYDRA-ZINE WATER TOT.REC (UG/L) (82626)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	ALUM-INUM BOT MAT <63U WS FIELD PERCENT (34790)	ANTI-MONY BOT MAT <63U WS FIELD (UG/G) (34795)	ARSENIC BOT MAT <63U WS FIELD (UG/G) (34800)	BARIUM BOT MAT <63U WS FIELD (UG/G) (34805)	BERYL-LIUM BOT MAT <63U WS FIELD (UG/G) (34810)	BISMUTH BOT MAT <180UWS FIELD (UG/G) (34816)
DEC											
07...	<5.00	<5.00	17	19	--	--	--	--	--	--	--
MAY											
03...	<5.00	<5.00	11	75	--	--	--	--	--	--	--
AUG											
10...	--	--	4.4	34	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	79	3.9	.5	4.4	190	1	<1

DATE	CADMIUM BOT MAT <63U WS FIELD (UG/G) (34825)	CALCIUM BOT MAT <63U WS FIELD PERCENT (34830)	CERIUM BOT MAT <63U WS FIELD (UG/G) (34835)	COBALT BOT MAT <63U WS FIELD (UG/G) (34840)	CHRO-MIUM BOT MAT <63U WS FIELD (UG/G) (34845)	COPPER BOT MAT <63U WS FIELD (UG/G) (34850)	EURO-PIUM BOT MAT <63U WS FIELD (UG/G) (34855)	GALLIUM BOT MAT <63U WS FIELD (UG/G) (34860)	GOLD BOT MAT <63U WS FIELD (UG/G) (34870)	HOLMIUM BOT MAT <63U WS FIELD (UG/G) (34875)	IRON BOT MAT <63U WS FIELD PERCENT (34880)
DEC											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	.1	15	42	43	5	12	<1	8	<1	<1	1.9

DATE	LANTHA-NUM BOT MAT <63U WS FIELD (UG/G) (34885)	LEAD BOT MAT <63U WS FIELD (UG/G) (34890)	LITHIUM BOT MAT <63U WS FIELD (UG/G) (34895)	MAGNE-SIUM BOT MAT <63U WS FIELD PERCENT (34900)	MANGA-NESE BOT MAT <63U WS FIELD (UG/G) (34905)	MERCURY BOT MAT <63U WS FIELD (UG/G) (34910)	MOLYB-DENUM BOT MAT <63U WS FIELD (UG/G) (34915)	NEODYM-IUM BOT MAT <63U WS FIELD (UG/G) (34920)	NICKEL BOT MAT <63U WS FIELD (UG/G) (34925)	NIOBIUM BOT MAT <63U WS FIELD (UG/G) (34930)	PHOS-PHORUS BOT MAT <63U WS FIELD PERCENT (34935)
DEC											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	22	13	23	.75	310	.02	<1	17	15	9	.059

DATE	POTAS-SIUM BOT MAT <63U WS FIELD PERCENT (34940)	SCAN-DIUM BOT MAT <63U WS FIELD (UG/G) (34945)	SELE-NIUM BOT MAT <63U WS FIELD (UG/G) (34950)	SILVER BOT MAT <63U WS FIELD (UG/G) (34955)	SODIUM BOT MAT <63U WS FIELD PERCENT (34960)	STRON-TIUM BOT MAT <63U WS FIELD (UG/G) (34965)	SULFUR BOT MAT <63U WS FIELD PERCENT (34970)	TANTA-LUM BOT MAT <63U WS FIELD (UG/G) (34975)	THORIUM BOT MAT <63U WS FIELD (UG/G) (34980)	TIN BOT MAT <63U WS FIELD (UG/G) (34985)	URANIUM BOT MAT <63U WS FIELD (UG/G) (35000)
DEC											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	1.1	7	1.0	28	.26	240	.06	1	6	2	1.8

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	VANADIUM BOT MAT <63U WS FIELD (UG/G) (35005)	YTTRIUM BOT MAT <63U WS FIELD (UG/G) (35010)	YTTERBIUM BOT MAT <63U WS FIELD (UG/G) (35015)	ZINC BOT MAT <63U WS FIELD (UG/G) (35020)	CARBON, ORGANIC SED, BM WS,<63U DW, REC (PERCENT) (49266)	CARBON, ORG + INORG, SED, BM WS,<63U DW, REC PERCENT (49267)	CARBON, INORG, SED, BM WS,<63U DW, REC (PERCENT) (49269)	CARBON, INORG, SED, BM DW, REC WS,<2MM (G/KG) (49270)	CARBON, ORGANIC SED, BM DW, REC WS,<2MM (G/KG) (49271)	CARBON, ORG + INORG SED, BM DW, REC WS,<2MM (G/KG) (49272)	TITANIUM, SED, BM WS,<63U DRY WGT REC PERCENT (49274)
DEC											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	60	14	1	53	2.22	7.05	4.83	50.0	34.0	84.0	.210

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	520	514	517	433	407	423	436	432	434	487	482	485
2	520	515	517	430	396	417	439	433	435	489	486	487
3	519	514	517	397	387	390	443	436	440	489	485	487
4	520	515	518	394	387	390	446	442	444	494	489	491
5	521	515	518	396	391	394	445	440	443	496	491	493
6	521	496	505	395	393	394	449	442	445	502	495	498
7	505	467	488	396	393	394	450	444	446	507	500	504
8	516	484	507	402	396	400	449	443	446	509	505	507
9	515	505	509	404	401	402	452	446	448	509	503	506
10	516	503	509	406	403	405	458	451	455	506	501	504
11	521	515	517	405	402	404	459	454	457	507	504	505
12	523	517	520	410	405	408	456	447	450	508	503	505
13	526	521	523	411	409	410	449	443	445	515	508	512
14	525	519	522	411	404	408	449	444	445	518	515	515
15	527	519	523	412	406	408	452	447	449	517	514	516
16	531	524	527	407	403	405	453	448	450	518	515	516
17	531	416	491	403	401	402	456	452	453	519	515	516
18	436	144	250	406	403	404	460	453	456	521	516	519
19	357	233	299	409	405	407	463	457	458	525	520	523
20	416	357	390	411	407	409	464	459	460	527	523	524
21	440	416	429	409	407	407	463	459	461	528	524	525
22	448	439	445	413	409	412	464	459	462	530	526	527
23	454	447	451	418	413	415	465	460	462	530	527	528
24	455	453	454	421	417	420	469	460	464	532	524	529
25	458	454	456	425	420	423	477	469	473	532	528	529
26	465	458	461	426	423	425	479	474	477	533	529	530
27	470	465	468	429	423	426	483	477	480	536	531	533
28	467	459	464	431	425	428	485	480	482	539	535	536
29	459	444	451	434	429	431	485	480	482	540	536	538
30	444	436	439	436	431	433	483	478	481	539	535	537
31	437	432	435	---	---	---	485	481	483	540	535	537
MONTH	531	144	472	436	387	410	485	432	457	540	482	515

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	542	538	540	572	566	569	572	565	569	566	562	564
2	544	537	540	572	567	570	569	552	561	565	553	564
3	543	538	540	573	569	572	554	547	551	568	564	566
4	549	541	545	573	569	571	548	518	538	571	567	568
5	554	536	551	575	571	574	518	504	510	574	568	571
6	553	545	548	575	571	574	505	500	502	571	560	564
7	548	543	545	576	571	574	505	500	502	562	556	559
8	546	542	544	575	572	574	504	500	502	558	553	556
9	547	542	544	575	572	574	505	501	503	554	545	550
10	548	541	545	577	571	575	513	505	510	545	514	527
11	550	544	547	577	574	576	514	509	511	514	508	511
12	550	543	548	578	557	575	520	509	516	520	511	515
13	549	542	547	575	563	570	529	519	525	531	518	525
14	552	547	551	576	572	574	539	528	534	534	529	531
15	557	547	554	576	571	574	545	538	543	530	525	527
16	562	555	560	575	570	572	543	539	541	527	519	523
17	563	559	560	573	568	571	549	539	545	519	496	509
18	563	558	562	573	568	571	554	549	552	499	479	490
19	565	561	563	569	561	566	554	550	552	495	482	489
20	566	561	564	563	548	557	555	548	553	500	492	497
21	565	561	563	565	561	563	556	552	554	502	498	501
22	565	561	563	565	561	563	557	553	555	507	500	504
23	566	562	564	565	560	563	557	554	556	511	503	508
24	566	561	564	566	561	563	558	553	555	521	509	515
25	567	563	566	563	559	561	554	537	545	531	519	526
26	569	565	567	563	559	561	545	518	533	534	528	531
27	570	566	568	564	545	560	554	542	551	535	530	533
28	570	565	568	546	499	537	555	551	553	534	530	532
29	---	---	---	550	495	531	559	551	556	535	526	531
30	---	---	---	552	545	548	564	554	560	537	531	534
31	---	---	---	566	552	559	---	---	---	537	532	534
MONTH	570	536	554	578	495	566	572	500	538	574	479	531

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	537	531	534	496	488	493	530	522	526	533	525	530
2	537	531	534	505	492	498	530	523	527	532	524	529
3	538	531	535	507	497	502	531	522	527	531	523	527
4	539	533	536	516	503	510	531	522	527	531	523	528
5	539	533	537	528	515	521	532	523	528	---	---	e531
6	541	535	538	539	526	531	534	524	529	---	---	e530
7	540	532	536	538	532	535	535	526	531	---	---	e532
8	535	530	533	534	529	531	536	528	532	---	---	e529
9	534	527	531	531	526	529	537	529	533	---	---	e530
10	532	527	530	533	527	530	536	524	530	532	531	531
11	532	527	530	539	528	531	531	524	528	533	530	531
12	532	526	530	538	528	531	531	523	527	531	529	530
13	530	524	528	537	530	533	529	521	526	530	509	519
14	530	521	527	538	532	535	528	521	525	513	505	509
15	521	417	497	548	532	536	530	521	526	508	458	488
16	472	395	448	543	533	537	531	522	527	511	495	505
17	458	358	401	543	534	537	532	522	527	512	503	508
18	462	451	457	542	532	536	532	522	527	517	508	512
19	511	462	491	540	533	536	533	522	528	519	511	515
20	518	496	511	538	526	532	534	525	530	519	512	516
21	516	479	498	529	523	526	534	526	531	519	512	516
22	504	469	491	529	523	526	534	526	530	518	511	515
23	512	468	491	529	524	527	534	528	531	518	511	515
24	505	470	492	528	522	526	535	529	532	518	511	515
25	496	479	486	527	520	524	538	531	534	518	512	515
26	506	481	495	527	520	524	539	532	535	517	511	515
27	508	486	497	528	521	525	538	531	535	518	512	515
28	487	471	480	528	521	525	537	529	533	519	513	516
29	482	471	475	528	521	525	535	527	532	519	513	516
30	492	482	489	529	521	525	535	528	531	518	512	516
31	---	---	---	529	522	526	532	524	528	---	---	---
MONTH	541	358	505	548	488	526	539	521	529	---	---	519

e Estimated

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.7	7.6	7.6	7.9	7.8	7.9	8.2	8.2	8.2	8.2	8.2	8.2
2	7.7	7.6	7.7	8.0	7.9	7.9	8.2	8.2	8.2	8.2	8.2	8.2
3	7.7	7.7	7.7	8.0	8.0	8.0	8.2	8.2	8.2	8.3	8.2	8.2
4	7.7	7.7	7.7	8.0	8.0	8.0	8.2	8.2	8.2	8.3	8.2	8.2
5	7.7	7.7	7.7	8.0	8.0	8.0	8.2	8.2	8.2	8.2	8.1	8.2
6	7.7	7.7	7.7	8.1	8.0	8.0	8.2	8.2	8.2	8.2	8.1	8.2
7	7.7	7.6	7.7	8.1	8.0	8.0	8.2	8.2	8.2	8.2	8.1	8.1
8	7.7	7.6	7.7	8.1	8.0	8.0	8.3	8.2	8.2	8.2	8.1	8.1
9	7.7	7.7	7.7	8.1	8.1	8.1	8.2	8.2	8.2	8.2	8.1	8.2
10	7.8	7.7	7.7	8.1	8.0	8.1	8.2	8.2	8.2	8.2	8.2	8.2
11	7.8	7.7	7.7	8.1	8.1	8.1	8.3	8.2	8.2	8.2	8.2	8.2
12	7.8	7.7	7.7	8.1	8.1	8.1	8.3	8.2	8.3	8.2	8.1	8.2
13	7.8	7.7	7.8	8.1	8.1	8.1	8.3	8.2	8.2	8.2	8.1	8.2
14	7.8	7.8	7.8	8.1	8.1	8.1	8.2	8.2	8.2	8.2	8.2	8.2
15	7.8	7.8	7.8	8.1	8.1	8.1	8.2	8.2	8.2	8.2	8.2	8.2
16	7.8	7.8	7.8	8.2	8.1	8.1	8.3	8.2	8.2	8.2	8.1	8.1
17	7.8	7.8	7.8	8.2	8.1	8.1	8.3	8.2	8.2	8.1	8.1	8.1
18	7.8	7.6	7.7	8.2	8.1	8.2	8.2	8.2	8.2	8.1	8.1	8.1
19	7.7	7.6	7.7	8.2	8.1	8.2	8.3	8.2	8.2	8.1	8.1	8.1
20	7.7	7.7	7.7	8.2	8.1	8.2	8.2	8.2	8.2	8.1	8.1	8.1
21	7.8	7.7	7.7	8.2	8.2	8.2	8.2	8.2	8.2	8.1	8.1	8.1
22	7.8	7.7	7.8	8.2	8.2	8.2	8.3	8.2	8.2	8.1	8.1	8.1
23	7.8	7.8	7.8	8.2	8.2	8.2	8.3	8.2	8.3	8.2	8.1	8.1
24	7.8	7.8	7.8	8.2	8.1	8.2	8.3	8.2	8.2	8.1	8.1	8.1
25	7.8	7.8	7.8	8.2	8.1	8.2	8.2	8.2	8.2	8.1	8.1	8.1
26	7.8	7.8	7.8	8.2	8.1	8.2	8.2	8.2	8.2	8.1	8.1	8.1
27	7.8	7.8	7.8	8.2	8.1	8.2	8.3	8.2	8.2	8.1	8.0	8.0
28	7.8	7.8	7.8	8.2	8.1	8.2	8.2	8.2	8.2	8.0	8.0	8.0
29	7.8	7.8	7.8	8.2	8.2	8.2	8.2	8.2	8.2	8.0	8.0	8.0
30	7.9	7.8	7.8	8.2	8.1	8.2	8.2	8.2	8.2	8.1	8.0	8.1
31	7.9	7.8	7.9	---	---	---	8.2	8.2	8.2	8.1	8.0	8.0
MONTH	7.9	7.6	7.7	8.2	7.8	8.1	8.3	8.2	8.2	8.3	8.0	8.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.1	8.0	8.0	8.0	8.0	8.0	7.9	7.9	7.9	7.8	7.7	7.7
2	8.1	8.0	8.0	8.0	7.9	7.9	8.0	7.9	7.9	7.8	7.7	7.8
3	8.1	8.0	8.1	7.9	7.9	7.9	8.0	7.9	8.0	7.8	7.8	7.8
4	8.1	8.0	8.1	8.0	7.9	7.9	8.0	8.0	8.0	7.8	7.8	7.8
5	8.1	8.0	8.1	7.9	7.9	7.9	8.0	7.8	7.9	7.8	7.8	7.8
6	8.1	8.0	8.1	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.8	7.9
7	8.1	8.0	8.1	7.9	7.9	7.9	7.9	7.8	7.9	7.9	7.9	7.9
8	8.0	7.9	8.0	8.0	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
9	8.0	7.9	8.0	8.0	7.9	8.0	7.9	7.8	7.9	7.9	7.8	7.9
10	8.0	7.9	8.0	8.0	7.9	7.9	7.9	7.8	7.9	7.9	7.8	7.8
11	8.0	7.9	8.0	8.0	7.9	8.0	7.9	7.8	7.9	7.9	7.8	7.8
12	8.1	8.0	8.0	8.0	7.9	8.0	7.9	7.8	7.8	7.9	7.8	7.9
13	8.1	8.0	8.1	8.0	7.9	7.9	7.9	7.8	7.9	7.9	7.8	7.9
14	8.1	8.0	8.1	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
15	8.1	8.0	8.1	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
16	8.1	8.0	8.1	8.0	7.9	8.0	7.9	7.8	7.9	8.0	7.9	7.9
17	8.1	8.0	8.1	8.0	7.9	7.9	7.9	7.8	7.9	8.0	7.9	7.9
18	8.1	8.1	8.1	8.0	7.9	7.9	7.9	7.8	7.9	8.0	7.9	7.9
19	8.1	8.0	8.0	8.0	7.9	7.9	7.9	7.8	7.9	8.0	7.9	7.9
20	8.0	7.9	8.0	8.0	7.9	7.9	7.9	7.8	7.9	7.9	7.9	7.9
21	8.0	8.0	8.0	8.0	7.9	8.0	7.9	7.8	7.8	7.9	7.9	7.9
22	8.0	8.0	8.0	8.0	7.9	8.0	7.9	7.8	7.8	7.9	7.8	7.9
23	8.0	8.0	8.0	8.0	7.9	8.0	7.8	7.8	7.8	7.8	7.6	7.7
24	8.0	8.0	8.0	7.9	7.8	7.9	7.9	7.8	7.8	7.7	7.6	7.6
25	8.0	8.0	8.0	7.9	7.8	7.9	7.8	7.8	7.8	7.7	7.6	7.7
26	8.0	8.0	8.0	7.9	7.9	7.9	7.9	7.8	7.8	7.7	7.6	7.7
27	8.0	8.0	8.0	7.9	7.8	7.9	7.8	7.7	7.8	7.7	7.6	7.7
28	8.0	8.0	8.0	7.9	7.9	7.9	7.7	7.7	7.7	7.7	7.7	7.7
29	---	---	---	7.9	7.8	7.9	7.7	7.7	7.7	7.7	7.6	7.7
30	---	---	---	7.9	7.8	7.9	7.7	7.7	7.7	7.7	7.7	7.7
31	---	---	---	7.9	7.9	7.9	---	---	---	7.7	7.7	7.7
MONTH	8.1	7.9	8.0	8.0	7.8	7.9	8.0	7.7	7.9	8.0	7.6	7.8

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.7	7.7	7.7	7.9	7.8	7.8	7.9	7.8	7.9	8.0	7.9	7.9
2	7.8	7.7	7.7	7.9	7.8	7.8	7.9	7.9	7.9	8.0	7.9	7.9
3	7.8	7.7	7.7	7.9	7.8	7.9	7.9	7.9	7.9	8.0	7.9	7.9
4	7.8	7.7	7.7	7.9	7.8	7.9	7.9	7.9	7.9	8.0	7.9	7.9
5	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.9	7.9	---	---	---
6	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.9	7.9	---	---	---
7	7.9	7.8	7.8	7.9	7.9	7.9	8.0	7.9	7.9	---	---	---
8	7.8	7.8	7.8	7.9	7.9	7.9	8.0	7.8	7.9	---	---	---
9	7.8	7.8	7.8	7.9	7.8	7.9	7.9	7.8	7.8	---	---	---
10	7.8	7.8	7.8	7.8	7.8	7.8	7.9	7.8	7.8	---	---	---
11	7.8	7.8	7.8	7.8	7.8	7.8	7.9	7.8	7.9	7.9	7.8	7.9
12	7.8	7.8	7.8	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.9	7.9
13	7.9	7.8	7.8	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.8	7.9
14	7.9	7.8	7.8	7.9	7.8	7.9	7.9	7.9	7.9	7.9	7.9	7.9
15	7.9	7.8	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.8	7.8
16	7.8	7.7	7.8	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.8	7.9
17	7.8	7.6	7.7	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
18	7.8	7.6	7.7	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
19	7.7	7.6	7.7	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
20	7.8	7.7	7.8	7.9	7.8	7.9	8.0	7.9	7.9	7.9	7.9	7.9
21	7.8	7.8	7.8	7.9	7.9	7.9	8.0	7.9	7.9	7.9	7.9	7.9
22	7.8	7.8	7.8	7.9	7.9	7.9	8.0	7.9	7.9	8.0	7.9	7.9
23	7.8	7.7	7.8	7.9	7.9	7.9	8.0	7.9	7.9	8.0	7.9	7.9
24	7.8	7.7	7.7	7.9	7.9	7.9	8.0	7.9	7.9	8.0	7.9	7.9
25	7.9	7.8	7.8	7.9	7.9	7.9	8.0	7.9	7.9	8.0	7.9	7.9
26	7.9	7.8	7.9	7.9	7.9	7.9	8.0	7.9	8.0	8.0	7.9	7.9
27	7.9	7.9	7.9	7.9	7.9	7.9	8.0	7.9	7.9	8.0	7.9	7.9
28	7.9	7.9	7.9	8.0	7.9	7.9	7.9	7.9	7.9	8.0	7.9	7.9
29	7.9	7.8	7.9	8.0	7.8	7.9	7.9	7.9	7.9	8.0	7.9	7.9
30	7.9	7.8	7.8	7.9	7.8	7.9	7.9	7.9	7.9	8.0	7.9	7.9
31	---	---	---	7.9	7.8	7.9	7.9	7.9	7.9	---	---	---
MONTH	7.9	7.6	7.8	8.0	7.8	7.9	8.0	7.8	7.9	---	---	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	26.7	26.1	26.3	22.6	21.9	22.2	20.1	19.4	19.6	15.7	14.8	15.2
2	26.7	26.1	26.4	21.9	20.6	21.1	20.0	19.4	19.7	15.6	14.6	15.1
3	26.8	26.2	26.4	21.4	20.3	20.8	20.5	19.8	20.3	14.6	13.2	13.8
4	26.9	26.3	26.5	21.4	20.7	20.9	20.9	20.5	20.7	13.2	11.8	12.4
5	26.8	26.4	26.6	20.7	18.9	19.5	20.8	20.5	20.7	11.8	10.8	11.1
6	26.5	24.2	25.1	18.9	18.1	18.3	21.0	20.6	20.8	11.7	10.9	11.3
7	24.2	22.5	23.2	18.7	17.9	18.2	20.6	19.5	20.3	12.6	11.5	12.0
8	23.0	22.1	22.5	19.6	18.7	19.2	19.5	17.7	18.5	13.9	12.6	13.3
9	22.6	21.7	22.1	20.2	19.4	19.7	17.7	16.5	17.1	13.8	13.2	13.4
10	22.3	21.3	21.7	20.2	19.6	20.0	16.5	16.0	16.2	13.2	12.6	12.9
11	22.2	21.1	21.6	19.6	18.6	18.8	16.0	15.3	15.6	13.1	12.3	12.7
12	22.7	21.3	21.9	18.6	18.1	18.3	15.4	14.9	15.1	13.4	12.6	13.0
13	23.0	21.9	22.4	18.7	18.4	18.5	15.3	14.6	14.9	14.0	12.7	13.4
14	22.8	22.2	22.4	18.6	18.4	18.5	15.6	14.6	15.0	13.8	13.2	13.5
15	22.5	21.8	22.1	18.8	18.1	18.5	15.4	14.5	14.9	13.7	12.9	13.3
16	23.0	22.0	22.5	19.1	18.1	18.6	15.3	14.2	14.7	13.8	12.7	13.3
17	23.5	22.8	23.2	19.2	18.2	18.7	15.1	14.3	14.7	14.2	12.9	13.6
18	23.5	21.8	22.4	20.2	18.7	19.4	15.2	14.3	14.8	14.1	13.1	13.7
19	21.8	20.7	21.1	20.3	19.6	19.9	15.7	14.6	15.1	14.5	13.2	13.9
20	20.9	20.5	20.7	20.2	19.5	19.9	16.0	15.2	15.6	15.3	14.0	14.7
21	20.9	20.7	20.8	19.5	18.8	19.1	17.4	16.0	16.7	16.3	14.8	15.6
22	20.8	20.5	20.7	19.0	18.2	18.7	17.0	14.6	15.6	16.3	15.5	15.8
23	20.7	19.8	20.1	19.7	18.8	19.2	14.6	12.8	13.7	15.5	14.5	15.1
24	19.9	19.1	19.6	19.6	19.0	19.3	12.8	11.2	11.9	15.4	14.1	15.0
25	20.3	19.5	19.9	19.9	19.1	19.5	11.3	10.8	11.1	15.7	14.1	15.0
26	21.0	20.2	20.6	20.0	19.3	19.7	11.7	10.6	11.1	16.3	15.1	15.8
27	21.9	21.0	21.4	20.4	19.7	20.1	12.7	11.1	11.8	16.4	15.3	15.9
28	22.5	21.7	22.0	20.4	20.0	20.2	13.6	12.1	12.7	17.4	16.1	16.8
29	22.8	22.1	22.4	20.6	20.1	20.4	14.4	12.8	13.5	18.0	17.3	17.6
30	22.8	22.3	22.6	20.6	20.1	20.5	14.6	13.2	13.9	17.5	16.2	16.7
31	22.6	22.3	22.5	---	---	---	15.1	14.0	14.5	16.5	15.4	16.1
MONTH	26.9	19.1	22.6	22.6	17.9	19.5	21.0	10.6	15.8	18.0	10.8	14.2

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16.5	15.3	15.9	18.7	17.8	18.4	19.3	18.8	19.0	23.2	22.3	22.9
2	16.5	15.7	16.2	19.1	18.3	18.8	20.0	19.3	19.6	22.3	22.0	22.2
3	16.5	15.7	16.1	19.0	18.0	18.5	21.1	19.9	20.5	22.4	22.0	22.2
4	16.9	15.5	16.2	18.0	16.8	17.3	21.3	20.3	20.8	23.5	22.4	22.9
5	17.6	16.5	17.0	18.6	17.5	18.2	21.8	20.8	21.3	23.6	23.1	23.3
6	18.5	17.4	17.9	19.4	18.5	19.0	21.4	19.9	20.7	23.1	22.4	22.9
7	19.1	18.0	18.6	19.4	18.1	18.6	21.6	20.5	21.1	23.1	21.6	22.3
8	19.5	18.4	19.0	19.6	18.2	18.8	21.9	20.9	21.4	22.7	21.7	22.2
9	20.2	19.0	19.6	19.1	18.3	18.8	22.5	21.3	21.9	23.1	22.7	22.9
10	20.7	19.5	20.1	19.5	19.0	19.3	23.0	22.2	22.6	23.2	22.3	22.7
11	20.6	19.0	20.1	20.2	19.4	19.8	22.9	21.8	22.5	22.6	21.8	22.2
12	19.0	17.0	17.6	20.8	20.2	20.5	22.9	22.3	22.5	23.4	22.5	22.9
13	17.0	15.5	16.2	20.5	18.8	19.7	22.8	22.3	22.6	23.6	23.1	23.3
14	16.4	14.8	15.6	18.8	17.6	18.1	22.8	22.3	22.6	24.1	23.3	23.7
15	16.2	14.7	15.6	17.6	16.9	17.3	22.4	20.9	21.7	24.5	23.7	24.1
16	16.4	15.5	16.0	17.7	17.0	17.4	20.9	19.4	20.2	24.8	24.0	24.4
17	16.4	15.5	16.0	18.4	17.6	17.9	19.4	18.6	19.0	25.0	24.4	24.7
18	16.5	15.1	15.9	18.6	18.3	18.4	19.2	18.5	18.9	24.8	24.0	24.4
19	16.6	15.3	15.9	18.4	17.9	18.2	19.9	19.0	19.5	24.6	23.7	24.2
20	17.0	15.9	16.5	18.5	17.5	18.1	20.6	19.8	20.2	24.7	24.0	24.4
21	16.9	15.9	16.4	18.5	17.8	18.2	20.9	20.4	20.7	24.9	24.3	24.6
22	16.4	15.0	15.7	18.9	18.1	18.5	21.6	20.8	21.2	25.2	24.5	24.8
23	16.6	15.5	16.1	19.8	18.9	19.3	22.6	21.6	22.2	25.4	24.8	25.1
24	17.3	16.1	16.6	20.2	19.8	20.0	22.9	22.6	22.8	25.2	24.8	25.1
25	17.9	16.7	17.3	20.3	19.5	19.9	23.1	22.7	22.9	25.4	25.0	25.2
26	18.4	17.7	18.0	19.5	19.0	19.1	23.2	22.5	23.0	25.5	25.1	25.3
27	19.5	18.3	18.9	19.1	18.3	18.7	23.7	22.9	23.3	25.4	24.8	25.1
28	19.2	18.1	18.6	19.1	17.9	18.6	24.0	23.4	23.7	25.7	25.2	25.5
29	---	---	---	19.1	18.5	18.8	23.9	23.6	23.8	25.7	25.1	25.4
30	---	---	---	19.1	18.5	18.8	23.8	23.2	23.6	26.2	25.4	25.9
31	---	---	---	19.1	18.6	18.8	---	---	---	26.8	26.0	26.4
MONTH	20.7	14.7	17.1	20.8	16.8	18.7	24.0	18.5	21.5	26.8	21.6	24.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.2	26.4	26.8	27.8	27.3	27.5	28.3	27.7	28.0	27.7	27.0	27.3
2	27.3	26.7	27.0	27.8	27.4	27.6	28.5	27.6	28.0	27.7	26.9	27.2
3	27.2	26.6	26.9	27.7	27.5	27.6	28.4	27.5	27.9	27.8	27.0	27.3
4	27.1	26.5	26.8	27.5	27.0	27.3	28.4	27.6	27.9	27.9	27.2	27.5
5	27.2	26.7	26.9	27.2	26.6	26.9	28.2	27.4	27.8	---	---	---
6	27.2	26.8	27.0	27.3	26.7	27.0	28.3	27.5	27.9	---	---	---
7	27.2	26.8	27.0	27.5	27.0	27.2	28.4	27.5	27.9	---	---	---
8	27.3	26.9	27.0	27.6	27.2	27.4	28.5	27.7	28.0	---	---	---
9	27.3	26.8	27.0	27.7	27.3	27.5	28.6	27.8	28.1	---	---	---
10	27.3	26.9	27.1	27.6	27.3	27.4	28.7	27.8	28.2	---	---	---
11	27.6	27.1	27.3	27.5	27.0	27.3	28.8	27.8	28.2	27.1	26.3	26.6
12	27.7	27.1	27.4	27.3	26.9	27.0	28.8	27.9	28.3	27.2	26.4	26.7
13	27.5	26.9	27.2	27.6	27.1	27.3	28.9	28.0	28.4	26.9	26.0	26.5
14	27.1	26.5	26.9	27.6	27.2	27.4	28.9	27.9	28.3	26.3	25.8	26.0
15	26.8	25.5	26.1	27.5	27.0	27.3	28.4	27.6	28.0	26.3	25.6	25.9
16	25.7	25.1	25.4	27.5	27.0	27.2	28.6	27.7	28.1	26.1	25.1	25.6
17	25.6	24.8	25.2	27.2	26.8	27.1	28.4	27.6	27.9	25.5	24.6	25.0
18	25.9	25.4	25.6	27.1	26.7	26.8	28.5	27.5	27.9	25.5	24.4	24.9
19	26.4	25.7	26.0	27.2	26.7	26.9	28.4	27.5	27.9	25.6	24.4	24.9
20	26.2	25.6	25.9	27.1	26.7	26.9	28.4	27.4	27.8	25.7	24.4	25.0
21	25.7	25.1	25.3	27.1	26.4	26.7	28.4	27.4	27.8	25.5	24.5	25.0
22	25.8	24.9	25.3	27.0	26.4	26.7	28.0	27.3	27.6	24.5	23.4	24.1
23	26.3	25.4	25.8	27.4	26.8	27.0	27.4	26.6	27.1	23.4	22.2	22.7
24	26.7	26.0	26.3	27.3	26.8	27.0	26.9	26.4	26.6	23.0	21.8	22.4
25	26.9	26.2	26.6	27.2	26.7	26.9	27.3	26.6	26.9	23.6	22.3	22.9
26	27.0	26.3	26.7	27.6	26.8	27.2	27.8	26.9	27.3	24.4	23.1	23.7
27	27.1	26.7	26.9	27.6	27.2	27.4	28.0	27.2	27.5	24.7	23.7	24.1
28	27.6	26.8	27.2	27.6	27.2	27.4	28.3	27.3	27.7	25.0	23.9	24.4
29	27.6	27.0	27.3	27.9	27.3	27.6	28.2	27.4	27.7	24.6	22.9	23.9
30	27.7	27.0	27.3	28.2	27.4	27.8	27.9	27.2	27.5	22.9	21.8	22.3
31	---	---	---	28.5	27.6	28.0	27.8	27.1	27.4	---	---	---
MONTH	27.7	24.8	26.6	28.5	26.4	27.2	28.9	26.4	27.8	---	---	---

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.4	7.0	7.1	7.7	7.4	7.5	9.0	8.3	8.6	10.5	9.8	10.1
2	7.1	6.7	7.0	8.0	7.6	7.9	8.9	8.3	8.6	10.6	9.7	10.1
3	7.1	6.7	6.9	8.3	7.9	8.1	8.5	8.0	8.2	11.4	10.1	10.8
4	7.1	6.7	6.9	8.3	7.9	8.1	8.5	7.9	8.1	12.3	11.1	11.7
5	6.9	6.5	6.7	9.0	8.1	8.6	8.4	7.9	8.1	13.0	11.9	12.5
6	7.1	6.5	6.9	9.3	9.0	9.2	8.3	7.8	8.0	12.6	12.2	12.4
7	7.3	6.7	7.0	9.5	9.2	9.4	8.3	7.8	8.1	12.2	11.5	11.9
8	7.9	7.1	7.6	9.3	8.9	9.1	9.2	8.2	8.8	11.5	10.8	11.2
9	8.1	7.7	7.9	9.1	8.7	8.9	9.4	8.9	9.2	11.5	10.5	11.0
10	8.2	7.8	7.9	9.1	8.6	8.8	9.7	9.2	9.4	11.8	11.1	11.4
11	8.4	8.0	8.1	9.3	8.8	9.0	10.0	9.4	9.7	11.9	11.3	11.6
12	8.5	8.0	8.2	9.3	9.0	9.2	10.6	9.7	10.1	11.6	11.1	11.4
13	8.5	8.0	8.2	9.2	9.0	9.1	10.8	10.0	10.4	11.5	10.9	11.2
14	8.3	7.8	8.0	9.2	9.0	9.1	10.6	10.2	10.4	11.6	10.8	11.2
15	8.2	7.8	8.0	9.3	9.0	9.2	10.7	10.2	10.4	11.7	11.0	11.3
16	8.1	7.5	7.8	9.3	9.1	9.2	10.8	10.3	10.6	11.7	11.0	11.3
17	7.7	7.3	7.5	9.3	9.1	9.3	10.9	10.4	10.6	11.4	10.9	11.2
18	8.4	7.2	7.9	9.3	8.7	9.2	10.6	10.1	10.4	11.6	11.0	11.3
19	8.9	8.3	8.7	9.1	8.6	9.0	10.9	10.0	10.4	11.3	10.9	11.1
20	8.9	8.5	8.7	9.2	8.6	9.0	10.4	9.8	10.1	11.0	10.5	10.7
21	8.7	8.5	8.6	9.5	9.1	9.3	10.1	9.4	9.7	10.5	10.0	10.3
22	8.7	8.5	8.6	9.6	9.2	9.4	10.4	9.3	10.0	10.3	9.6	10.0
23	8.7	8.4	8.6	9.3	9.0	9.2	11.4	10.4	11.0	10.6	9.9	10.3
24	8.7	8.4	8.6	9.4	9.0	9.2	12.8	11.4	12.1	10.7	10.1	10.4
25	8.5	8.2	8.4	9.3	8.7	9.0	13.0	12.3	12.6	10.9	10.1	10.5
26	8.2	7.9	8.1	9.3	8.5	8.9	12.9	12.2	12.5	10.5	9.9	10.2
27	7.9	7.6	7.8	8.9	8.3	8.6	12.5	11.5	12.1	10.6	9.8	10.2
28	7.8	7.5	7.6	8.8	8.2	8.5	12.0	11.1	11.6	10.1	9.4	9.7
29	7.7	7.5	7.6	8.8	8.1	8.4	11.4	10.6	11.1	9.6	8.8	9.2
30	7.7	7.4	7.5	8.6	8.1	8.3	11.4	10.6	10.9	10.1	9.1	9.6
31	7.7	7.4	7.5	---	---	---	11.0	10.2	10.6	10.5	9.5	9.9
MONTH	8.9	6.5	7.8	9.6	7.4	8.9	13.0	7.8	10.1	13.0	8.8	10.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.5	9.5	10.0	9.6	8.8	9.2	9.3	8.6	9.0	7.8	7.4	7.6
2	10.5	9.4	10.0	9.4	8.6	9.0	9.5	8.6	9.1	7.7	7.6	7.6
3	10.4	9.5	10.0	9.6	8.6	9.2	9.3	8.7	9.0	7.8	7.4	7.7
4	10.5	9.5	10.0	9.8	9.0	9.5	9.1	8.5	8.7	7.8	7.3	7.5
5	9.9	9.4	9.6	9.6	8.9	9.3	8.8	7.9	8.5	7.8	7.5	7.6
6	9.6	9.0	9.3	9.5	8.7	9.1	9.2	8.4	8.9	8.5	7.6	8.1
7	9.5	8.7	9.1	9.1	8.6	8.8	9.0	8.3	8.6	9.0	8.2	8.6
8	9.1	8.3	8.7	9.5	8.6	9.0	9.0	8.0	8.5	8.9	8.2	8.5
9	8.9	8.1	8.5	9.8	8.9	9.4	8.8	8.0	8.4	8.4	7.9	8.2
10	8.8	7.9	8.4	9.5	8.5	8.9	8.5	7.3	8.0	8.2	7.8	8.1
11	8.3	7.6	8.0	9.1	8.4	8.7	8.5	7.3	8.0	8.6	8.1	8.3
12	10.0	8.3	9.3	8.7	8.0	8.4	8.1	7.3	7.7	8.6	8.0	8.3
13	10.7	9.5	10.2	9.1	7.8	8.5	8.0	7.3	7.7	8.4	8.0	8.2
14	11.1	10.0	10.6	9.8	8.8	9.3	8.3	7.3	7.8	8.5	7.9	8.2
15	11.1	10.2	10.7	10.4	9.4	9.9	8.9	7.6	8.3	8.4	7.7	8.1
16	10.8	9.9	10.3	11.1	9.4	10.3	9.5	8.4	9.0	8.5	7.6	8.1
17	11.0	9.9	10.5	10.6	9.6	10.1	9.9	9.2	9.6	8.2	7.7	8.0
18	11.1	10.0	10.6	9.9	9.0	9.4	9.9	9.3	9.7	8.5	7.9	8.2
19	11.1	9.9	10.6	10.0	9.1	9.6	9.8	9.2	9.6	8.3	7.5	8.0
20	10.6	9.7	10.2	10.4	9.1	9.8	9.7	9.1	9.4	8.2	7.3	7.8
21	10.6	9.7	10.3	10.5	9.3	10.0	9.3	8.5	8.9	8.3	7.5	7.9
22	11.1	10.0	10.6	10.4	9.3	10.0	8.9	8.3	8.6	8.2	7.5	7.9
23	10.8	9.9	10.4	10.1	9.1	9.5	8.5	7.9	8.3	7.9	7.2	7.6
24	10.6	9.9	10.3	9.4	8.7	9.0	8.2	7.6	7.9	8.2	7.2	7.6
25	10.2	9.6	9.9	9.4	8.5	9.0	7.8	7.3	7.5	8.3	7.2	7.8
26	9.8	9.0	9.3	9.7	8.9	9.4	7.7	6.9	7.2	7.9	6.9	7.6
27	9.3	8.8	9.1	9.6	8.8	9.1	7.7	7.2	7.5	8.2	7.3	7.6
28	9.6	8.8	9.2	9.9	9.2	9.5	7.7	7.2	7.4	7.8	6.8	7.3
29	---	---	---	9.8	8.8	9.3	7.7	7.2	7.4	7.6	6.8	7.2
30	---	---	---	9.8	8.8	9.3	7.8	7.3	7.5	7.3	6.7	6.9
31	---	---	---	9.5	8.8	9.1	---	---	---	8.0	6.6	7.2
MONTH	11.1	7.6	9.8	11.1	7.8	9.3	9.9	6.9	8.4	9.0	6.6	7.8

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.6	6.8	7.2	7.7	7.2	7.4	6.4	5.5	6.2	7.4	6.7	7.0
2	7.6	6.8	7.2	7.6	7.2	7.3	6.7	5.5	6.3	7.2	6.7	6.9
3	7.6	7.0	7.3	7.4	7.1	7.2	6.8	5.5	6.5	7.1	6.6	6.8
4	7.5	7.0	7.2	7.3	7.0	7.2	6.8	5.6	6.5	7.0	6.4	6.6
5	7.6	6.7	7.1	7.5	6.9	7.3	7.3	5.8	6.8	---	---	---
6	7.5	6.7	7.1	7.8	7.2	7.4	7.0	5.7	6.5	---	---	---
7	7.3	6.9	7.1	7.7	7.1	7.3	6.8	5.7	6.3	---	---	---
8	7.2	6.6	6.9	7.4	6.9	7.2	6.9	5.8	6.4	---	---	---
9	7.5	6.9	7.1	7.2	6.6	6.9	6.9	5.7	6.5	---	---	---
10	7.2	6.7	7.0	7.1	6.4	6.8	6.8	5.6	6.1	---	---	---
11	7.2	6.6	6.9	7.1	6.5	6.9	6.8	5.7	6.4	7.6	6.1	7.3
12	7.2	6.8	6.9	7.3	6.7	6.9	6.6	5.6	5.9	7.6	6.4	7.3
13	7.2	6.7	6.9	7.5	6.8	7.1	6.9	5.9	6.6	7.3	6.7	7.0
14	7.2	6.6	6.8	7.6	7.0	7.2	6.9	6.4	6.6	7.0	6.6	6.8
15	7.3	6.5	6.9	7.5	7.0	7.2	6.8	6.3	6.5	6.8	6.2	6.6
16	7.3	6.5	6.9	7.7	7.2	7.4	6.8	6.3	6.5	6.7	6.4	6.6
17	7.0	6.5	6.7	7.6	7.1	7.2	6.8	6.3	6.5	6.7	6.4	6.5
18	7.0	6.6	6.9	7.7	7.2	7.3	7.1	6.5	6.7	6.7	6.4	6.5
19	7.1	6.8	7.0	7.8	7.3	7.5	6.9	6.4	6.6	6.7	6.3	6.5
20	7.4	7.0	7.2	7.6	7.2	7.4	7.0	6.4	6.6	6.7	6.3	6.5
21	7.5	7.1	7.3	7.4	6.9	7.2	7.0	6.4	6.6	6.8	6.5	6.6
22	7.4	6.9	7.2	7.4	6.8	7.1	6.8	6.3	6.5	7.0	6.6	6.8
23	7.1	6.6	6.9	7.3	6.8	7.0	6.5	6.2	6.3	7.2	6.8	7.0
24	6.9	6.3	6.6	7.1	6.7	6.9	7.0	6.2	6.6	7.4	7.0	7.2
25	7.4	6.5	7.0	7.1	6.8	6.9	6.9	6.4	6.6	7.4	7.0	7.1
26	7.6	7.0	7.3	7.0	6.7	6.8	7.2	6.5	6.8	7.2	6.9	7.1
27	7.9	7.2	7.5	6.9	6.6	6.8	7.2	6.6	6.8	7.2	7.0	7.1
28	8.3	7.5	8.0	6.9	5.8	6.6	7.0	6.5	6.7	7.2	6.9	7.0
29	8.2	7.3	7.6	6.9	5.8	6.5	7.0	6.4	6.6	7.5	6.9	7.2
30	7.8	7.3	7.5	6.7	5.8	6.5	7.0	6.4	6.6	7.8	7.2	7.6
31	---	---	---	6.6	6.3	6.4	7.2	6.6	6.9	---	---	---
MONTH	8.3	6.3	7.1	7.8	5.8	7.1	7.3	5.5	6.5	---	---	---

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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 mi^2, of which 634 mi^2 is above dam forming Medina Lake.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--Jan 1981 to Sep 1995, May 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 589.86 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in water year 1981, at least 10% of contributing drainage area has been regulated by Medina Lake (station 08179500, normal storage 254,000 acre-ft) and by Medina Diversion Lake. A large part of the streamflow is lost into the Edwards and associated limestones where the Balcones Fault crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. There are several small diversions below Medina Diversion Dam.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	366	411	214	113	87	91	73	64	89	68	61
2	44	422	397	209	112	86	121	75	62	86	65	61
3	43	487	379	203	114	84	131	75	60	85	64	60
4	42	511	368	194	113	85	131	75	58	86	63	60
5	41	520	363	186	115	86	130	74	57	91	65	60
6	67	539	352	182	115	87	131	89	60	87	63	61
7	58	545	344	180	115	87	128	104	61	85	63	68
8	46	549	337	180	115	86	130	97	60	85	64	63
9	42	544	316	178	114	86	129	83	58	88	64	62
10	42	536	298	182	115	86	107	90	60	85	64	61
11	44	530	304	171	108	86	105	89	59	88	63	60
12	44	503	315	167	103	87	100	84	59	81	63	58
13	43	492	322	164	102	98	92	83	59	81	63	57
14	45	544	316	162	99	87	91	95	60	80	66	64
15	46	582	307	160	97	85	88	111	88	78	63	57
16	46	588	298	154	97	87	86	112	193	76	61	56
17	1220	577	291	151	96	90	86	112	104	76	61	55
18	7380	572	285	150	95	89	86	144	73	76	61	54
19	3530	566	278	148	94	99	85	114	68	75	61	54
20	920	561	276	144	94	98	85	90	75	77	60	53
21	593	559	273	142	94	92	84	82	116	77	60	51
22	487	532	269	139	93	90	83	79	194	74	60	50
23	419	511	266	138	93	89	81	78	106	73	62	51
24	374	493	245	134	94	88	80	78	94	72	68	52
25	341	476	238	131	94	87	93	77	126	72	67	52
26	318	465	228	129	93	87	112	75	180	71	64	53
27	299	455	224	127	92	91	88	74	132	71	63	52
28	294	443	222	126	89	145	81	72	124	70	63	52
29	298	432	220	124	---	114	77	71	118	70	62	51
30	304	419	217	124	---	97	75	67	96	70	63	50
31	311	---	215	121	---	92	---	65	---	68	62	---
TOTAL	17826	15319	9174	4914	2868	2838	2987	2687	2724	2443	1959	1699
MEAN	575	511	296	159	102	91.5	99.6	86.7	90.8	78.8	63.2	56.6
MAX	7380	588	411	214	115	145	131	144	194	91	68	68
MIN	41	366	215	121	89	84	75	65	57	68	60	50
AC-FT	35360	30390	18200	9750	5690	5630	5920	5330	5400	4850	3890	3370

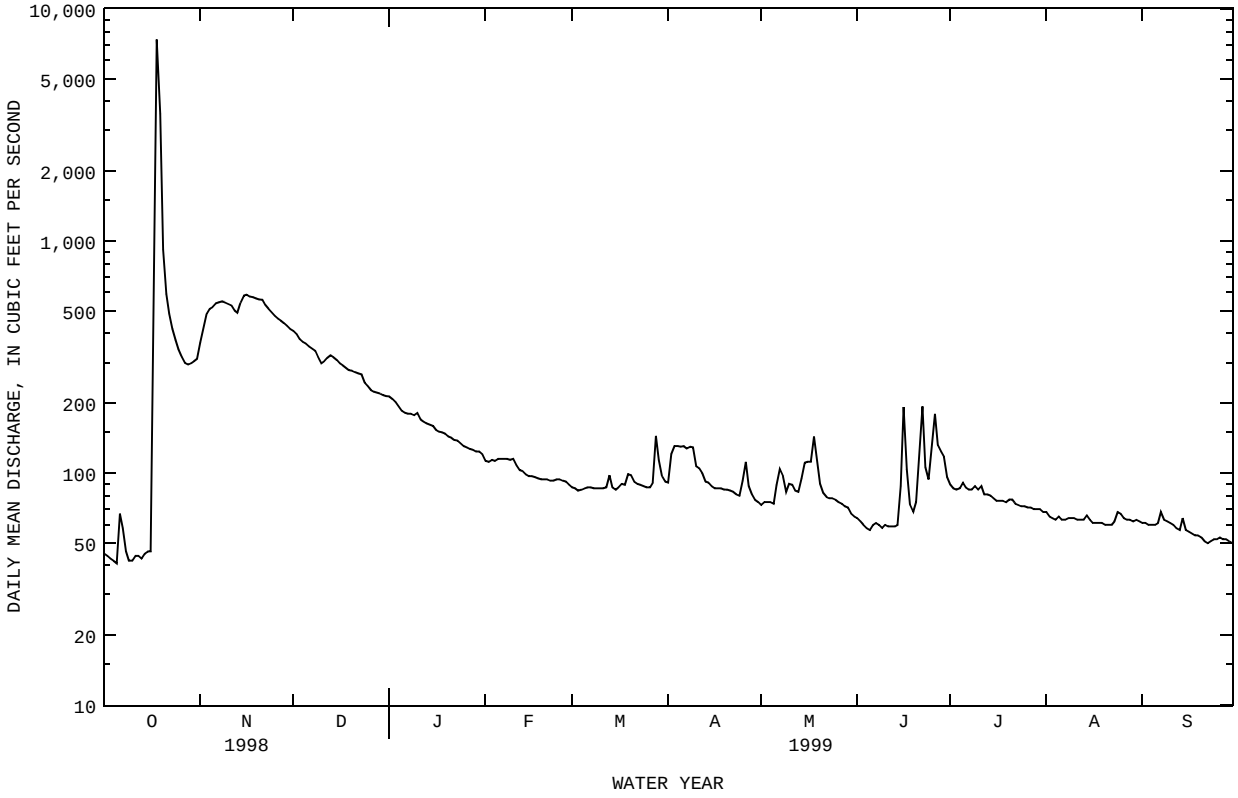
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1999h, BY WATER YEAR (WY)

MEAN	133	99.0	120	142	220	223	152	252	698	184	75.1	60.2
MAX	575	511	432	698	2333	2097	1302	1636	5726	765	280	165
(WY)	1999	1999	1992	1992	1992	1992	1992	1992	1987	1987	1992	1992
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 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1981 - 1999h	
ANNUAL TOTAL	75561		67438			
ANNUAL MEAN	207		185		183	
HIGHEST ANNUAL MEAN					954	1992
LOWEST ANNUAL MEAN					38.1	1989
HIGHEST DAILY MEAN	7380	Oct 18	7380	Oct 18	22300	Jun 5 1987
LOWEST DAILY MEAN	37	Jul 31	41	Oct 5	14	Jan 11 1985
ANNUAL SEVEN-DAY MINIMUM	38	Jul 28	44	Oct 8	16	Jan 7 1985
INSTANTANEOUS PEAK FLOW			16300	Oct 18	c36800	May 30 1987
INSTANTANEOUS PEAK STAGE			17.39	Oct 18	20.58	May 30 1987
ANNUAL RUNOFF (AC-FT)	149900		133800		132500	
10 PERCENT EXCEEDS	492		414		301	
50 PERCENT EXCEEDS	85		90		54	
90 PERCENT EXCEEDS	45		59		32	

h See PERIOD OF RECORD paragraph.
c From rating curve extended above current meter measurment of 24,400 ft^3/s.

08180700 MEDINA RIVER NEAR MACDONA, TX--Continued



08180700 MEDINA RIVER NEAR MACDONA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jul 1998 to current year.
BIOCHEMICAL DATA: Jul 1998 to current year.
BACTERIA DATA: Jul 1998 to current year.
PESTICIDE DATA: Jul 1998 to current year.
SEDIMENT DATA: Jul 1998 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)
DEC												
07...	1340	344	492	7.9	20.5	15	.95	7.9	89	170	160	100
MAY												
04...	0930	74	660	7.7	23.0	5	14	7.4	89	K140	820	E20
AUG												
11...	1200	64	608	8.0	28.0	23	6.0	6.8	86	150	74	--
11...	1215	--	--	--	--	--	--	--	--	--	--	--
11...	1230	--	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
DEC												
07...	<1.0	<1.0	<1.0	2.8	<1.0	1.1	1.1	<1.0	3.1	<1.0	<1.0	2.1
MAY												
04...	<1.0	1.1	<1.0	1.6	<1.0	<1.0	1.2	<1.0	4.3	<1.0	<1.0	<1.0
AUG												
11...	<1.0	<1.0	<1.0	6.5	<1.0	2.0	1.2	<1.0	3.1	<1.0	<1.0	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	BORON, DIS-SOLVED (UG/L AS B) (01020)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)
DEC												
07...	<1.0	<1.0	35	2	14	1	2.0	<10	87	.18	10	0
MAY												
04...	<1.0	<1.0	54	<1	17	1	2.5	<10	167	.23	15	0
AUG												
11...	<1.0	<1.0	51	<1	17	<1	2.5	<10	163	.19	12	0
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	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)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
DEC												
07...	227	186	39	7	296	13	14	492	65	<10	<.050	.027
MAY												
04...	285	234	52	11	413	28	28	578	78	<10	.028	.054
AUG												
11...	265	217	49	10	349	24	25	586	78	<10	<.004	<.020
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

08180700 MEDINA RIVER NEAR MACDONA, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)
DEC												
07...	1.96	.013	.16	.16	<.050	<.010	--	--	--	--	<.0030	<.0020
MAY												
04...	5.71	.022	.26	<.10	.012	.018	--	--	--	--	<.0030	<.0020
AUG												
11...	5.81	<.010	.22	.13	.007	.021	--	--	--	--	<.0030	<.0020
11...	--	--	--	--	--	--	48.6	9.20	51.4	1.00	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	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)	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)
DEC												
07...	<.002	.011	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0040	<.0020	E.0250	.007
MAY												
04...	<.002	.123	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0040	<.0020	E.103	<.002
AUG												
11...	<.002	.017	<.0010	<.0020	<.0020	<.0030	<.0030	E.0026	<.0040	<.0020	E.0554	<.002
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	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)
DEC												
07...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
MAY												
04...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.006	<.004	<.0040
AUG												
11...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.007	<.004	<.0040
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	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)	PROP-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)
DEC												
07...	<.0030	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030	<.0050
MAY												
04...	<.0030	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030	E.0030
AUG												
11...	<.0030	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030	<.0050
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

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)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	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)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	P,P' DDE DISSOLV (UG/L) (34653)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)
DEC												
07...	<.0100	<.0070	<.0130	95.9	<.0020	<.0010	<.0020	<.0020	79.2	<.0060	<.0050	99.3
MAY												
04...	<.0100	<.0070	<.0130	124	<.0020	<.0010	<.0020	<.0020	104	<.0060	<.0050	110
AUG												
11...	<.0100	<.0070	<.0130	--	<.0020	<.0010	<.0020	<.0020	100	<.0060	<.0050	110
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

08180700 MEDINA RIVER NEAR MACDONA, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	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)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	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)	BDMC, SURROG, WATER, UNFLTRD REC PERCENT (99835)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)
DEC												
07...	<.0350	<.150	<.240	<.0210	<.0140	<.420	<.0350	<.550	<.100	<.0210	85.0	<.0140
MAY												
04...	<.0350	<.150	<.240	<.0210	<.0140	<.420	<.0350	<2.30	<.100	<.0210	67.0	<.0140
AUG												
11...	<.0400	<.110	<.100	<.0600	<.110	<.420	<.0900	<7.40	<.100	<.0210	95.6	<.0350
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BRO-MACIL, WATER, DISS, REC (UG/L) (04029)	BRO-MOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CHLOR-AMBEN, WATER, FLTRD, GF 0.7U REC (UG/L) (49307)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	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)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)
DEC												
07...	<.0350	<.0350	<.0080	<.120	<.420	<.480	<.230	<.0170	<.0350	<1.20	<.0320	<.0350
MAY												
04...	<.0350	<.0350	<.0080	<.120	<.420	<.480	<.230	<.0170	<.0350	<1.20	<.0320	<.0350
AUG												
11...	<.0600	<.0400	<.0700	<.290	<.140	<.480	<.230	<.0390	<.0430	<.0700	<.0320	<.0600
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	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)	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												
07...	<.0200	<.0130	<.0350	<.0180	<.170	<.140	<.0260	<.240	<.0150	<.0240	<.310	<.0180
MAY												
04...	.0400	<.0130	<.0350	<.0180	<.170	<.140	<.0260	<.0170	<.0150	<.0240	<.310	<.0180
AUG												
11...	<.415	<.0700	<.0600	<.0900	<.170	<.130	<.0260	<.0400	<.0700	<.0420	<.310	<.0600
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	ALPHA BHC TOTAL (UG/L) (39337)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	LINDANE TOTAL (UG/L) (39340)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	ALDRIN, TOTAL (UG/L) (39330)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
DEC												
07...	<.0500	<.0350	<.0350	<.250	<.030	<.030	<.030	<.090	<.030	<.040	<.800	<.100
MAY												
04...	<.0500	<.500	<.0350	<.250	<.030	<.030	<.030	<.090	<.030	<.040	<.800	<.100
AUG												
11...	<.0500	<.0350	<.0800	<.250	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DI-ELDRIN TOTAL (UG/L) (39380)	P,P' DDE, TOTAL (UG/L) (39320)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDO-SULFAN II TOTAL (UG/L) (34356)	P,P' DDD, TOTAL (UG/L) (39310)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	TOX-APHENE, TOTAL (UG/L) (39400)
DEC												
07...	<.100	<.100	<.020	<.040	<.060	<.040	<.100	<.200	<.600	<.100	<.100	<2.00
MAY												
04...	<.100	<.100	<.020	<.040	<.060	<.040	<.100	<.200	<.600	<.100	<.100	<2.00
AUG												
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	DI-BROMO-METHANE WATER WHOLE RECOVER (UG/L) (30217)	BENZENE TOTAL (UG/L) (34030)	BROMO-FORM TOTAL (UG/L) (32104)	CARBON TETRA-CHLO-RIDE TOTAL (UG/L) (32102)	CHLORO-BENZENE TOTAL (UG/L) (34301)
DEC												
07...	<1.00	<.100	<.100	<.100	<.100	<.100	<.100	<.200	<.200	<.200	<.200	<.200
MAY												
04...	<1.00	<.100	<.100	<.100	<.100	<.100	<.100	--	--	--	--	--
AUG												
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CHLORO-DI-BROMO-METHANE TOTAL (UG/L) (32105)	CHLORO-ETHANE TOTAL (UG/L) (34311)	CHLORO-FORM TOTAL (UG/L) (32106)	BROMO-DI-CHLORO-METHANE TOTAL (UG/L) (32101)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L) (34668)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L) (34496)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L) (32103)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L) (34501)	TRANS-1,2-DI-CHLORO-ETHENE TOTAL (UG/L) (34546)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L) (34541)	ETHYL-BENZENE TOTAL (UG/L) (34371)	METHYL-BROMIDE TOTAL (UG/L) (34413)
DEC												
07...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
MAY												
04...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL ENE CHLO-RIDE TOTAL (UG/L) (34423)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L) (34516)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L) (34475)	TOLUENE TOTAL (UG/L) (34010)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L) (34506)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L) (34511)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L) (39180)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L) (34488)	VINYL CHLO-RIDE TOTAL (UG/L) (39175)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34566)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34571)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L) (77651)
DEC												
07...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
MAY												
04...	--	--	--	--	--	--	--	--	--	<5.00	<5.00	--
AUG												
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL-CHLO-RIDE TOTAL (UG/L) (34418)	BENZENE O-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34536)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34704)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34699)	STYRENE TOTAL (UG/L) (77128)	XYLENE WATER UNFLTRD REC (UG/L) (81551)	DIBROMO CHLORO-PROPANE WATER WHOLE TOT.REC (UG/L) (82625)	1,1-DI CHLORO-PRO-PENE, WAT, WH TOTAL (UG/L) (77168)	2,2-DI CHLORO-PRO-PANE WAT, WH TOTAL (UG/L) (77170)	1,3-DI-CHLORO-PROPANE WAT. WH TOTAL (UG/L) (77173)	O-CHLORO-TOLUENE WATER WHOLE TOTAL (UG/L) (77275)	TOLUENE P-CHLOR WATER UNFLTRD REC (UG/L) (77277)
DEC												
07...	<.200	<.200	<.200	<.200	<.200	<.200	<1.00	<.200	<.200	<.200	<.200	<.200
MAY												
04...	--	<5.00	--	--	--	--	--	--	--	--	--	--
AUG												
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	123-TRI CHLORO-PROPANE WATER WHOLE TOTAL (UG/L) (77443)	ETHANE, 1112-TETRA-CHLORO-WAT UNF REC (UG/L) (77562)	ACRYLO-NITRILE TOTAL (UG/L) (34215)	METHYL TERT-BUTYL ETHER WAT UNF REC (UG/L) (78032)	METHANE BROMO CHLORO-WAT UNFLTRD REC (UG/L) (77297)	CIS-1,2-DI-CHLORO-ETHENE WATER TOTAL (UG/L) (77093)	ISO-PROPYL-BENZENE WATER WHOLE REC (UG/L) (77223)	BENZENE N-PROPY WATER UNFLTRD REC (UG/L) (77224)	BENZENE TERT-BUTYL-WATER UNFLTRD REC (UG/L) (77353)	BENZENE 124-TRI METHYL UNFILT RECOVER (UG/L) (77222)	BENZENE SEC BUTYL-WATER UNFLTRD REC (UG/L) (77350)	P-ISO-PROPYL-TOLUENE WATER WHOLE REC (UG/L) (77356)
DEC												
07...	<.200	<.200	<2.50	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
MAY												
04...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

08180700 MEDINA RIVER NEAR MACDONA, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	BENZENE WATER UNFLTRD REC (UG/L) (77342)	BENZENE N-BUTYL 1,2,4-TRI-CHLORO-WAT UNF REC (UG/L) (34551)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L) (39702)	NAPHTH-ALENE TOTAL (UG/L) (34696)	1,2,3-TRI-CHLORO BENZENE WAT, WH REC (UG/L) (77613)	FREON-113 WATER UNFLTRD REC (UG/L) (77652)	BENZENE 135-TRI METHYL WATER UNFLTRD REC (UG/L) (77226)	BROMO-BENZENE WATER, WHOLE, TOTAL (UG/L) (81555)	PARA-CHLORO-META CRESOL TOTAL (UG/L) (34452)	2-CHLORO-PHENOL TOTAL (UG/L) (34586)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L) (34601)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L) (34621)
DEC												
07...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<30.0	<5.00	<5.00	<20.0
MAY												
04...	--	<5.00	<5.00	<5.00	--	--	--	--	<30.0	<5.00	<5.00	<20.0
AUG												
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	2,4-DI-METHYL-PHENOL TOTAL (UG/L) (34606)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L) (34657)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L) (34616)	2-NITRO-PHENOL TOTAL (UG/L) (34591)	4-NITRO-PHENOL TOTAL (UG/L) (34646)	PENTA-CHLORO-PHENOL TOTAL (UG/L) (39032)	PHENOL (C6H-5OH) TOTAL (UG/L) (34694)	ACE-NAPHTH-ENE TOTAL (UG/L) (34205)	ACE-NAPHTH-YLENE TOTAL (UG/L) (34200)	ANTHRA-CENE TOTAL (UG/L) (34220)	BENZI-DINE TOTAL (UG/L) (39120)	BENZ(A) ANTHRA-CENE WATER UNFLTRD REC (UG/L) (34526)
DEC												
07...	<5.00	<30.0	<20.0	<5.00	<30.0	<30.0	<5.00	<5.00	<5.00	<5.00	<40.0	<10.0
MAY												
04...	<5.00	<30.0	<20.0	<5.00	E.891	<30.0	<5.00	<5.00	<5.00	<5.00	<40.0	<10.0
AUG												
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BENZO B FLUOR-AN-THENE TOTAL (UG/L) (34230)	BENZO K FLUOR-AN-THENE TOTAL (UG/L) (34242)	BENZO-A-PYRENE TOTAL (UG/L) (34247)	BENZO-[GHI]-PERY-LENE TOTAL (UG/L) (34521)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L) (34292)	BIS(2-CHLORO-ETHOXY) METHANE TOTAL (UG/L) (34278)	BIS(2-CHLORO-ETHYL) ETHER UNFLTRD RECOVER (UG/L) (34273)	BIS(2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L) (34283)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L) (34636)	2-CHLORO-NAPH-THALENE TOTAL (UG/L) (34581)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L) (34641)
DEC											
07...	<10.0	<10.0	<10.0	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
MAY											
04...	<10.0	<10.0	<10.0	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--

DATE	CHRY-SENE TOTAL (UG/L) (34320)	1,2,5,6-DIBENZ-ANTHRA-CENE TOTAL (UG/L) (34556)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L) (39110)	3,3'-DI-CHLORO-BENZI-DINE TOTAL (UG/L) (34631)	DIETHYL PHTHAL-ATE TOTAL (UG/L) (34336)	DI-METHYL PHTHAL-ATE TOTAL (UG/L) (34341)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L) (34611)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L) (34626)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L) (34596)	BIS(2-ETHYL HEXYL) PHTHAL-ATE TOTAL (UG/L) (39100)	FLUOR-ENE TOTAL (UG/L) (34381)
DEC											
07...	<10.0	<10.0	<5.00	<20.0	<5.00	<5.00	<5.00	<5.00	<10.0	<5.00	<5.00
MAY											
04...	<10.0	<10.0	<5.00	<20.0	<5.00	<5.00	<5.00	<5.00	<10.0	<5.00	<5.00
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--

DATE	FLUOR-ANTHENE TOTAL (UG/L) (34376)	HEXA-CHLORO-BENZENE TOTAL (UG/L) (39700)	CYCLOPE NTADIEN HEXA-CHLORO-UNFLTRD RECOVER (UG/L) (34386)	ETHANE HEXA-CHLORO-WATER UNFLTRD RECOVER (UG/L) (34396)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L) (34403)	ISO-PHORONE TOTAL (UG/L) (34408)	BENZENE NITRO-WATER UNFLTRD RECOVER (UG/L) (34447)	N-NITRO-SODI-METHYL-AMINE TOTAL (UG/L) (34438)	N-NITRO-SODI-PHENYL-AMINE TOTAL (UG/L) (34433)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L) (34428)	PHENAN-THRENE TOTAL (UG/L) (34461)
DEC											
07...	<5.00	<5.00	<20.0	<5.00	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
MAY											
04...	<5.00	<5.00	<20.0	<5.00	<10.0	E.029	<5.00	<5.00	<5.00	<5.00	E.004
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--

08180700 MEDINA RIVER NEAR MACDONA, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	PYRENE TOTAL (UG/L) (34469)	1,2-DI-PHENYL-HYDRA-ZINE WATER TOT.REC (UG/L) (82626)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	ALUM-INUM BOT MAT <63U WS FIELD PERCENT (34790)	ANTI-MONY BOT MAT <63U WS FIELD (UG/G) (34795)	ARSENIC BOT MAT <63U WS FIELD (UG/G) (34800)	BARIUM BOT MAT <63U WS FIELD (UG/G) (34805)	BERYL-LIUM BOT MAT <63U WS FIELD (UG/G) (34810)	BISMUTH BOT MAT <180UWS FIELD (UG/G) (34816)
DEC											
07...	<5.00	<5.00	24	26	--	--	--	--	--	--	--
MAY											
04...	<5.00	<5.00	27	133	--	--	--	--	--	--	--
AUG											
11...	--	--	3.1	18	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	63	3.8	.4	5.2	200	1	<1

DATE	CADMIUM BOT MAT <63U WS FIELD (UG/G) (34825)	CALCIUM BOT MAT <63U WS FIELD PERCENT (34830)	CERIUM BOT MAT <63U WS FIELD (UG/G) (34835)	COBALT BOT MAT <63U WS FIELD (UG/G) (34840)	CHRO-MIUM BOT MAT <63U WS FIELD (UG/G) (34845)	COPPER BOT MAT <63U WS FIELD (UG/G) (34850)	EURO-PIUM BOT MAT <63U WS FIELD (UG/G) (34855)	GALLIUM BOT MAT <63U WS FIELD (UG/G) (34860)	GOLD BOT MAT <63U WS FIELD (UG/G) (34870)	HOLMIUM BOT MAT <63U WS FIELD (UG/G) (34875)	IRON BOT MAT <63U WS FIELD PERCENT (34880)
DEC											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	.1	15	45	44	5	11	<1	9	<1	<1	1.9

DATE	LANTHA-NUM BOT MAT <63U WS FIELD (UG/G) (34885)	LEAD BOT MAT <63U WS FIELD (UG/G) (34890)	LITHIUM BOT MAT <63U WS FIELD (UG/G) (34895)	MAGNE-SIUM BOT MAT <63U WS FIELD PERCENT (34900)	MANGA-NESE BOT MAT <63U WS FIELD (UG/G) (34905)	MERCURY BOT MAT <63U WS FIELD (UG/G) (34910)	MOLYB-DENUM BOT MAT <63U WS FIELD (UG/G) (34915)	NEODYM-IUM BOT MAT <63U WS FIELD (UG/G) (34920)	NICKEL BOT MAT <63U WS FIELD (UG/G) (34925)	NIOBIUM BOT MAT <63U WS FIELD (UG/G) (34930)	PHOS-PHORUS BOT MAT <63U WS FIELD PERCENT (34935)
DEC											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	24	12	22	.74	410	<.02	<1	18	13	9	.071

DATE	POTAS-SIUM BOT MAT <63U WS FIELD PERCENT (34940)	SCAN-DIUM BOT MAT <63U WS FIELD (UG/G) (34945)	SELE-NIUM BOT MAT <63U WS FIELD (UG/G) (34950)	SILVER BOT MAT <63U WS FIELD (UG/G) (34955)	SODIUM BOT MAT <63U WS FIELD PERCENT (34960)	STRON-TIUM BOT MAT <63U WS FIELD (UG/G) (34965)	SULFUR BOT MAT <63U WS FIELD PERCENT (34970)	TANTA-LUM BOT MAT <63U WS FIELD (UG/G) (34975)	THORIUM BOT MAT <63U WS FIELD (UG/G) (34980)	TIN BOT MAT <63U WS FIELD (UG/G) (34985)	URANIUM BOT MAT <63U WS FIELD (UG/G) (35000)
DEC											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	1.0	6	.8	.3	.20	260	<.05	<1	7	2	1.8

DATE	VANA-DIUM BOT MAT <63U WS FIELD (UG/G) (35005)	YTTRIUM BOT MAT <63U WS FIELD (UG/G) (35010)	YTTER-BIUM BOT MAT <63U WS FIELD (UG/G) (35015)	ZINC BOT MAT <63U WS FIELD (UG/G) (35020)	CARBON, ORGANIC SED, BM WS,<63U DW, REC (PER-CENT) (49266)	CARBON, ORG + INORG, SED, BM WS,<63U DW, REC PERCENT (49267)	CARBON, INORG, SED, BM WS,<63U DW, REC (PER-CENT) (49269)	CARBON, INORG, SED, BM WS,<2MM DW, REC (G/KG) (49270)	CARBON, ORGANIC SED, BM WS,<2MM DW, REC (G/KG) (49271)	CARBON, ORG + INORG SED, BM WS,<2MM DW, REC (G/KG) (49272)	TITA-NIUM, SED, BM WS,<63U DRY WGT REC PERCENT (49274)
DEC											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	51	15	2	47	2.09	6.85	4.76	57.0	21.0	78.0	.210

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 mi^2, of which 634 mi^2 is above dam forming Medina Lake.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1970 to Sep 1995, Sep 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 493.56 ft above sea level. Prior to Jun 16, 1993, at site 300 ft upstream 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 1971, at least 10% of contributing drainage area has been regulated by Medina Lake (station 08179500, normal storage 254,000 acre-ft) and by Medina Diversion Lake. A large part of the streamflow is lost into the Edwards and associated limestones where the Balcones Fault crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. There are several small diversions below Medina Diversion Dam.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	361	436	229	150	e115	112	91	76	100	66	58
2	52	433	431	228	142	e114	121	92	75	93	65	57
3	55	463	412	221	143	e112	139	98	75	90	63	57
4	53	503	393	213	143	e113	140	96	74	91	61	56
5	52	512	384	206	143	e115	141	94	72	95	63	57
6	83	532	374	201	143	e115	139	92	73	98	62	57
7	91	546	365	198	143	e115	139	110	74	92	62	61
8	72	552	356	198	144	e114	138	113	76	89	61	63
9	61	554	346	195	144	124	140	100	73	88	61	63
10	57	542	327	199	145	127	132	100	73	89	60	59
11	56	535	323	192	143	116	118	102	72	96	59	59
12	55	511	329	189	136	120	119	101	69	89	58	57
13	54	492	338	186	135	127	109	98	70	85	57	56
14	54	573	334	184	128	115	107	96	71	83	59	57
15	55	606	328	183	126	108	105	115	103	80	57	60
16	55	604	319	180	127	107	101	119	219	78	56	56
17	2690	604	311	175	126	106	100	119	174	78	56	54
18	8270	600	306	172	126	105	100	152	116	79	56	53
19	6930	592	299	172	122	106	100	149	97	79	56	53
20	1880	584	298	167	122	112	99	121	110	80	55	52
21	834	582	295	167	121	107	99	101	165	87	54	51
22	605	562	288	166	121	104	97	93	234	81	55	48
23	490	538	288	166	118	103	96	93	147	76	58	48
24	424	520	267	163	116	103	95	95	118	75	63	48
25	379	498	259	160	119	103	103	91	121	73	63	49
26	348	485	250	157	119	102	130	88	176	72	61	49
27	324	474	244	157	117	106	125	87	153	71	59	47
28	314	461	241	156	117	168	104	85	139	70	58	45
29	312	453	239	156	---	162	97	83	131	68	59	45
30	313	443	235	155	---	130	94	82	116	68	60	44
31	314	---	233	155	---	117	---	79	---	67	59	---
TOTAL	25385	15715	9848	5646	3679	3591	3439	3135	3342	2560	1842	1619
MEAN	819	524	318	182	131	116	115	101	111	82.6	59.4	54.0
MAX	8270	606	436	229	150	168	141	152	234	100	66	63
MIN	52	361	233	155	116	102	94	79	69	67	54	44
AC-FT	50350	31170	19530	11200	7300	7120	6820	6220	6630	5080	3650	3210

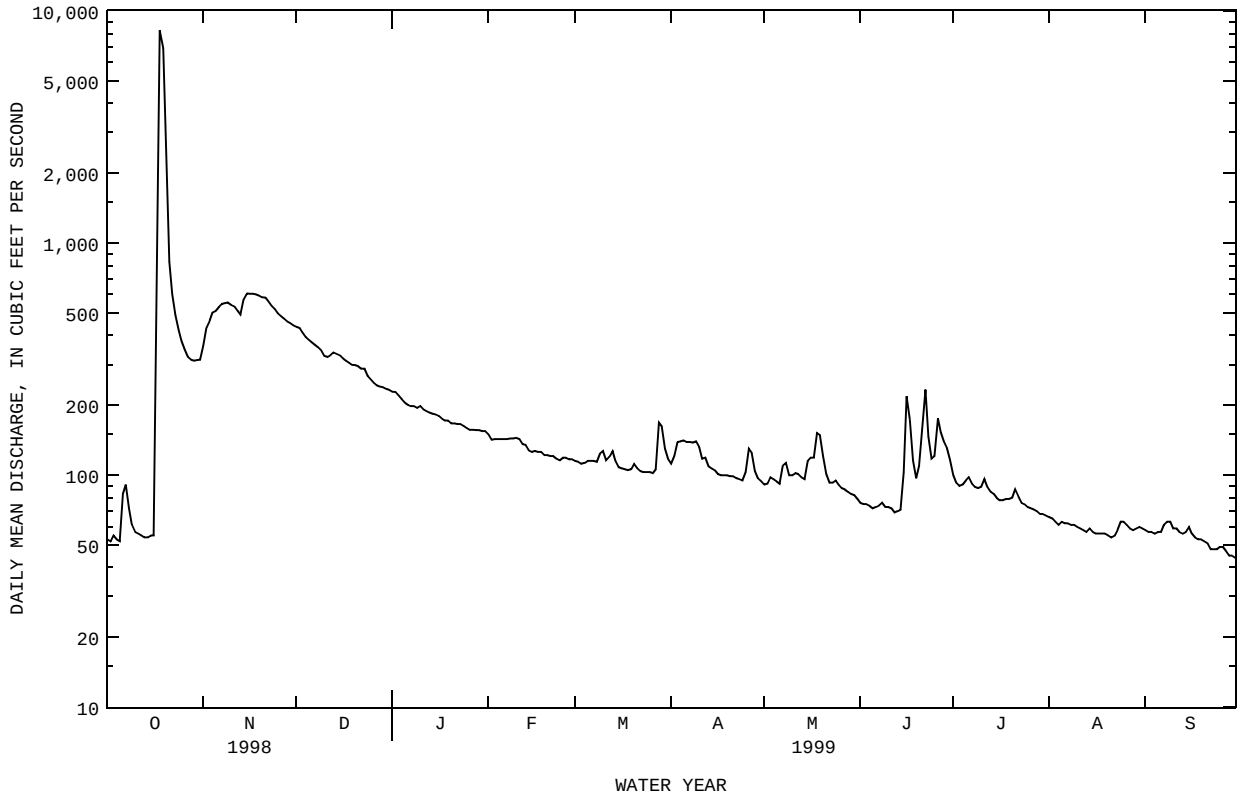
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1999h, BY WATER YEAR (WY)

MEAN	210	170	150	170	250	233	206	287	615	280	167	131
MAX	1284	648	549	751	2449	2326	1480	1663	6432	2875	1222	868
(WY)	1974	1977	1977	1992	1992	1992	1992	1992	1987	1973	1978	1973
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 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1971 - 1999h	
ANNUAL TOTAL	85170		79801			
ANNUAL MEAN	233		219		237	
HIGHEST ANNUAL MEAN					1033	1992
LOWEST ANNUAL MEAN					40.0	1984
HIGHEST DAILY MEAN	8270	Oct 18	8270	Oct 18	24800	Jul 17 1973
LOWEST DAILY MEAN	37	Jul 31	44	Sep 30	16	Sep 19 1984
ANNUAL SEVEN-DAY MINIMUM	38	Jul 28	47	Sep 24	19	Sep 17 1984
INSTANTANEOUS PEAK FLOW			13500	Oct 18	c30500	Jul 17 1973
INSTANTANEOUS PEAK STAGE			22.70	Oct 18	29.39	Jul 17 1973
ANNUAL RUNOFF (AC-FT)	168900		158300		172000	
10 PERCENT EXCEEDS	507		434		473	
50 PERCENT EXCEEDS	94		114		77	
90 PERCENT EXCEEDS	50		57		41	

e Estimated
h See PERIOD OF RECORD paragraph.
c From rating curve extended above current meter measurement of 30,100 ft^3/s.

08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued



08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jul 1998 to current year.
BIOCHEMICAL DATA: Jul 1998 to current year.
BACTERIA DATA: Jul 1998 to current year.
PESTICIDE DATA: Jul 1998 to current year.
SEDIMENT DATA: Jul 1998 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)
DEC												
08...	1130	356	555	7.9	18.5	10	6.7	8.9	95	220	74	110
MAY												
04...	1150	96	772	7.9	23.0	10	34	7.5	90	K270	720	K60
AUG												
12...	0915	59	608	8.0	28.0	22	12	6.8	86	150	74	120
12...	0930	--	--	--	--	--	--	--	--	--	--	--
12...	0935	--	--	--	--	--	--	--	--	--	--	--
12...	0945	--	--	--	--	--	--	--	--	--	--	--
12...	0950	--	--	--	--	--	--	--	--	--	--	--
12...	0955	--	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
DEC												
08...	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	1.3	<1.0	4.0	<1.0	<1.0	2.0
MAY												
04...	<1.0	1.2	<1.0	1.4	<1.0	<1.0	1.9	<1.0	3.9	<1.0	<1.0	<1.0
AUG												
12...	4.7	1.1	<1.0	3.4	<1.0	2.7	1.8	<1.0	<1.0	<1.0	<1.0	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	BORON, DIS-SOLVED (UG/L AS B) (01020)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)
DEC												
08...	<1.0	<1.0	39	1	15	1	2.3	<10	108	.20	10	0
MAY												
04...	<1.0	<1.0	57	1	19	1	3.6	<10	215	.29	15	0
AUG												
12...	<1.0	<1.0	57	1	19	<1	3.3	<10	219	.23	11	0
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--

08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	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)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	STRONTIUM, DIS-SOLVED (UG/L AS SR) (01080)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
DEC												
08...	232	190	47	9	335	18	20	532	70	<10	E.030	.025
MAY												
04...	301	246	71	14	489	42	50	662	83	<10	.243	.056
AUG												
12...	265	217	70	13	435	36	43	671	83	<10	.106	<.020
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOSPHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS DIS-SOLVED (MG/L AS P) (00666)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)
DEC												
08...	2.01	.032	.20	.17	<.050	<.010	--	--	--	--	<.0030	<.0020
MAY												
04...	4.89	.170	.44	.24	.195	.011	--	--	--	--	<.0030	<.0020
AUG												
12...	4.83	.052	.16	1.4	.062	<.010	--	--	--	--	<.0030	<.0020
12...	--	--	--	--	--	--	379.2	78.8	394.0	1.20	--	--
12...	--	--	--	--	--	--	196.6	46.6	204.3	.670	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZINPHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLORPYRIFOS DIS-SOLVED (UG/L) (38933)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON, DIS-SOLVED (UG/L) (39572)
DEC												
08...	<.002	.012	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0040	<.0020	E.0223	E.004
MAY												
04...	<.002	.136	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0040	<.0020	E.0892	.006
AUG												
12...	<.002	.019	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0040	<.0020	E.0709	<.002
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	DIELDRIN DIS-SOLVED (UG/L) (39381)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALATHION, DIS-SOLVED (UG/L) (39532)	METOLACHLOR WATER DISSOLV (UG/L) (39415)	METRIBUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)
DEC												
08...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
MAY												
04...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.006	<.004	<.0040
AUG												
12...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.007	<.004	<.0040
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--

08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	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)	PROP-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)
DEC												
08...	<.0030	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030	<.0050
MAY												
04...	<.0030	<.004	<.0060	<.0040	<.0040	<.0020	E.0031	<.0070	<.0040	<.0130	<.0030	E.0036
AUG												
12...	<.0030	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030	<.0050
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
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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)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	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)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	P,P' DDE DISSOLV (UG/L) (34653)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)
DEC												
08...	<.0100	<.0070	<.0130	91.4	<.0020	<.0010	<.0020	<.0020	77.9	<.0060	<.0050	95.3
MAY												
04...	<.0100	<.0070	<.0130	122	<.0020	<.0010	<.0020	<.0020	105	<.0060	<.0050	100
AUG												
12...	<.0100	<.0070	<.0130	--	<.0020	<.0010	<.0020	<.0020	100	<.0060	<.0050	103
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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)	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)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	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)	BDMC, SURROG, WATER, UNFLTRD REC PERCENT (99835)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)
DEC												
08...	<.0350	<.150	<.240	<.0210	<.0140	<.420	<.0350	<.550	<.100	<.0210	83.0	<.0140
MAY												
04...	<.0350	<.150	<.240	<.0210	<.0140	<.420	<.0350	<1.40	<.100	<.0210	91.0	<.0140
AUG												
12...	<.0400	<.110	<.100	<.0600	<.110	<.420	<.0900	<6.10	<.100	<.0800	95.2	<.0350
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DATE	BRO-MACIL, WATER, DISS, REC (UG/L) (04029)	BRO-MOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CHLOR-AMBEN, WATER, FLTRD, GF 0.7U REC (UG/L) (49307)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	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)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)
DEC												
08...	<.0350	<.0350	<.0080	<.120	<.420	<.480	<.230	<.0170	<.0350	<1.20	<.0320	<.0350
MAY												
04...	<.0350	<.0350	<.0080	<.120	<.420	<.480	<.230	<.0170	<.0350	<1.20	<.0320	<.0350
AUG												
12...	<.0600	<.0400	<.0700	<.290	<.140	<.480	<.230	<.0390	<.0430	<.0700	<.0320	<.0600
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08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	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)	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												
08...	<.0200	<.0130	<.0350	<.0180	<.170	<.140	<.0260	<.0170	<.0150	<.0240	<.310	<.0180
MAY												
04...	.0600	<.0130	<.0350	<.0180	<.170	<.140	<.0260	<.0170	<.0150	<.0240	<.310	<.0180
AUG												
12...	<.275	<.0700	<.0600	<.0900	<.170	<.130	<.0260	<.0400	<.0700	<.0700	<.310	<.0180
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DATE	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	ALPHA BHC TOTAL (UG/L) (39337)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	LINDANE TOTAL (UG/L) (39340)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	ALDRIN, TOTAL (UG/L) (39330)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
DEC												
08...	<.0500	<.0350	<.0350	<.250	<.030	<.030	<.030	<.090	<.030	<.040	<.800	<.100
MAY												
04...	<.0500	<.0350	<.0350	<.250	<.030	<.030	<.030	<.090	<.030	<.040	<.800	<.100
AUG												
12...	<.0500	<.0350	<.0800	<.250	--	--	--	--	--	--	--	--
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DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DI-ELDRIN TOTAL (UG/L) (39380)	P,P' DDE, TOTAL (UG/L) (39320)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDO-SULFAN II TOTAL (UG/L) (34356)	P,P' DDD, TOTAL (UG/L) (39310)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	TOX-APHENE, TOTAL (UG/L) (39400)
DEC												
08...	<.100	<.100	<.020	<.040	<.060	<.040	<.100	<.200	<.600	<.100	<.100	<2.00
MAY												
04...	<.100	<.100	<.020	<.040	<.060	<.040	<.100	<.200	<.600	<.100	<.100	<2.00
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DATE	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	DI-BROMO-METHANE WATER WHOLE RECOVER (UG/L) (30217)	BENZENE TOTAL (UG/L) (34030)	BROMO-FORM TOTAL (UG/L) (32104)	CARBON TETRA-CHLO-RIDE TOTAL (UG/L) (32102)	CHLORO-BENZENE TOTAL (UG/L) (34301)
DEC												
08...	<1.00	<.100	<.100	<.100	<.100	<.100	<.100	<.200	<.200	<.200	<.200	<.200
MAY												
04...	<1.00	<.100	<.100	<.100	<.100	<.100	<.100	--	--	--	--	--
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08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	CHLORO-DI-BROMO-METHANE TOTAL (UG/L) (32105)	CHLORO-ETHANE TOTAL (UG/L) (34311)	CHLORO-FORM TOTAL (UG/L) (32106)	BROMO-DI-CHLORO-METHANE TOTAL (UG/L) (32101)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L) (34668)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L) (34496)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L) (32103)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L) (34501)	TRANS-1,2-DI-CHLORO-ETHENE TOTAL (UG/L) (34546)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L) (34541)	ETHYL-BENZENE TOTAL (UG/L) (34371)	METHYL-BROMIDE TOTAL (UG/L) (34413)
DEC												
08...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
MAY												
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DATE	METHYL ENE CHLO-RIDE TOTAL (UG/L) (34423)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L) (34516)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L) (34475)	TOLUENE TOTAL (UG/L) (34010)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L) (34506)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L) (34511)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L) (39180)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L) (34488)	VINYL CHLO-RIDE TOTAL (UG/L) (39175)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34566)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34571)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L) (77651)
DEC												
08...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
MAY												
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DATE	METHYL-CHLO-RIDE TOTAL (UG/L) (34418)	BENZENE O-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34536)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34704)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34699)	STYRENE TOTAL (UG/L) (77128)	XYLENE WATER UNFLTRD REC (UG/L) (81551)	DIBROMO CHLORO-PROPANE WATER WHOLE TOT.REC (UG/L) (82625)	1,1-DI CHLORO-PRO-PENE, WAT, WH TOTAL (UG/L) (77168)	2,2-DI CHLORO-PRO-PANE WAT, WH TOTAL (UG/L) (77170)	1,3-DI-CHLORO-PROPANE WAT. WH TOTAL (UG/L) (77173)	O-CHLORO-TOLUENE WATER WHOLE TOTAL (UG/L) (77275)	TOLUENE P-CHLOR WATER UNFLTRD REC (UG/L) (77277)
DEC												
08...	<.200	<.200	<.200	<.200	<.200	<.200	<1.00	<.200	<.200	<.200	<.200	<.200
MAY												
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DATE	123-TRI CHLORO-PROPANE WATER WHOLE TOTAL (UG/L) (77443)	ETHANE, 1112-TETRA-CHLORO-WAT UNF REC (UG/L) (77562)	ACRYLO-NITRILE TOTAL (UG/L) (34215)	METHYL TERT-BUTYL ETHER WAT UNF REC (UG/L) (78032)	METHANE BROMO CHLORO-WAT UNFLTRD REC (UG/L) (77297)	CIS-1,2-DI-CHLORO-ETHENE WATER TOTAL (UG/L) (77093)	ISO-PROPYL-BENZENE WATER WHOLE REC (UG/L) (77223)	BENZENE N-PROPY WATER UNFLTRD REC (UG/L) (77224)	BENZENE TERT-BUTYL-WATER UNFLTRD REC (UG/L) (77353)	BENZENE 124-TRI METHYL UNFILT RECOVER (UG/L) (77222)	BENZENE SEC BUTYL-WATER UNFLTRD REC (UG/L) (77350)	P-ISO-PROPYL-TOLUENE WATER WHOLE REC (UG/L) (77356)
DEC												
08...	<.200	<.200	<2.50	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
MAY												
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08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	BENZENE WATER UNFLTRD REC (UG/L) (77342)	BENZENE N-BUTYL 1,2,4-TRI-CHLORO-BUT-ADIENE WAT UNF REC (UG/L) (34551)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L) (39702)	NAPHTH-ALENE TOTAL (UG/L) (34696)	1,2,3-TRI-CHLORO BENZENE WAT, WH REC (UG/L) (77613)	FREON-113 WATER UNFLTRD REC (UG/L) (77652)	BENZENE 135-TRI METHYL WATER UNFLTRD REC (UG/L) (77226)	BROMO-BENZENE WATER, WHOLE, TOTAL (UG/L) (81555)	PARA-CHLORO-META CRESOL TOTAL (UG/L) (34452)	2-CHLORO-PHENOL TOTAL (UG/L) (34586)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L) (34601)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L) (34621)
DEC												
08...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<30.0	<5.00	<5.00	<20.0
MAY												
04...	--	<5.00	<5.00	E.023	--	--	--	--	<30.0	<5.00	<5.00	<20.0
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DATE	2,4-DI-METHYL-PHENOL TOTAL (UG/L) (34606)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L) (34657)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L) (34616)	2-NITRO-PHENOL TOTAL (UG/L) (34591)	4-NITRO-PHENOL TOTAL (UG/L) (34646)	PENTA-CHLORO-PHENOL TOTAL (UG/L) (39032)	PHENOL (C6H-5OH) TOTAL (UG/L) (34694)	ACE-NAPHTH-ENE TOTAL (UG/L) (34205)	ACE-NAPHTH-YLENE TOTAL (UG/L) (34200)	ANTHRA-CENE TOTAL (UG/L) (34220)	BENZI-DINE TOTAL (UG/L) (39120)	BENZ(A) ANTHRA-CENE WATER UNFLTRD REC (UG/L) (34526)
DEC												
08...	<5.00	<30.0	<20.0	<5.00	<30.0	<30.0	<5.00	<5.00	<5.00	<5.00	<40.0	<10.0
MAY												
04...	<5.00	<30.0	<20.0	<5.00	E.596	<30.0	<5.00	<5.00	<5.00	<5.00	<40.0	<10.0
AUG												
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12...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BENZO B FLUOR-AN-THENE TOTAL (UG/L) (34230)	BENZO K FLUOR-AN-THENE TOTAL (UG/L) (34242)	BENZO-A-PYRENE TOTAL (UG/L) (34247)	BENZO-[GHI]-PERY-LENE TOTAL (UG/L) (34521)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L) (34292)	BIS(2-CHLORO-ETHOXY) METHANE TOTAL (UG/L) (34278)	BIS(2-CHLORO-ETHYL) ETHER UNFLTRD RECOVER (UG/L) (34273)	BIS(2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L) (34283)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L) (34636)	2-CHLORO-NAPH-THALENE TOTAL (UG/L) (34581)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L) (34641)
DEC											
08...	<10.0	<10.0	<10.0	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
MAY											
04...	<10.0	<10.0	<10.0	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--

DATE	CHRY-SENE TOTAL (UG/L) (34320)	1,2,5,6-DIBENZ-ANTHRA-CENE TOTAL (UG/L) (34556)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L) (39110)	3,3'-DI-CHLORO-BENZI-DINE TOTAL (UG/L) (34631)	DIETHYL PHTHAL-ATE TOTAL (UG/L) (34336)	DI-METHYL PHTHAL-ATE TOTAL (UG/L) (34341)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L) (34611)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L) (34626)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L) (34596)	BIS(2-ETHYL HEXYL) PHTHAL-ATE TOTAL (UG/L) (39100)	FLUOR-ENE TOTAL (UG/L) (34381)
DEC											
08...	<10.0	<10.0	<5.00	<20.0	<5.00	<5.00	<5.00	<5.00	<10.0	<5.00	<5.00
MAY											
04...	<10.0	<10.0	<5.00	<20.0	<5.00	<5.00	<5.00	<5.00	<10.0	<5.00	<5.00
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--

08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	FLUOR-ANTHENE TOTAL (UG/L) (34376)	HEXA-CHLORO-BENZENE TOTAL (UG/L) (39700)	CYCLOPENTADIEN HEXA-CHLORO-UNFLTRD RECOVER (UG/L) (34386)	ETHANE HEXA-CHLORO-WATER UNFLTRD RECOVER (UG/L) (34396)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L) (34403)	ISO-PHORONE TOTAL (UG/L) (34408)	BENZENE NITRO-WATER UNFLTRD RECOVER (UG/L) (34447)	N-NITRO-SODI-METHYL-AMINE TOTAL (UG/L) (34438)	N-NITRO-SODI-PHENYL-AMINE TOTAL (UG/L) (34433)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L) (34428)	PHENAN-THRENE TOTAL (UG/L) (34461)
DEC											
08...	<5.00	<5.00	<20.0	<5.00	<10.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
MAY											
04...	<5.00	<5.00	<20.0	<5.00	<10.0	E.023	<5.00	<5.00	<5.00	<5.00	E.004
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--

DATE	PYRENE TOTAL (UG/L) (34469)	1,2-DI-PHENYL-HYDRA-ZINE WATER TOT.REC (UG/L) (82626)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	ALUM-INUM BOT MAT <63U WS FIELD PERCENT (34790)	ANTI-MONY BOT MAT <63U WS FIELD (UG/G) (34795)	ARSENIC BOT MAT <63U WS FIELD (UG/G) (34800)	BARIUM BOT MAT <63U WS FIELD (UG/G) (34805)	BERYL-LIUM BOT MAT <63U WS FIELD (UG/G) (34810)	BISMUTH BOT MAT <180UWS FIELD (UG/G) (34816)
DEC											
08...	<5.00	<5.00	67	70	--	--	--	--	--	--	--
MAY											
04...	<5.00	<5.00	36	138	--	--	--	--	--	--	--
AUG											
12...	--	--	9.3	59	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	62	3.7	.5	4.5	230	1	<1
12...	--	--	--	--	67	3.6	.4	4.4	230	1	<1
12...	--	--	--	--	75	3.6	.4	4.6	220	1	<1

DATE	CADMIUM BOT MAT <63U WS FIELD (UG/G) (34825)	CALCIUM BOT MAT <63U WS FIELD PERCENT (34830)	CERIUM BOT MAT <63U WS FIELD (UG/G) (34835)	COBALT BOT MAT <63U WS FIELD (UG/G) (34840)	CHRO-MIUM BOT MAT <63U WS FIELD (UG/G) (34845)	COPPER BOT MAT <63U WS FIELD (UG/G) (34850)	EURO-PIUM BOT MAT <63U WS FIELD (UG/G) (34855)	GALLIUM BOT MAT <63U WS FIELD (UG/G) (34860)	GOLD BOT MAT <63U WS FIELD (UG/G) (34870)	HOLMIUM BOT MAT <63U WS FIELD (UG/G) (34875)	IRON BOT MAT <63U WS FIELD PERCENT (34880)
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	.2	14	49	45	5	11	<1	8	<1	<1	1.9
12...	.1	14	49	45	5	12	<1	8	<1	<1	1.9
12...	.1	15	48	45	5	12	<1	8	<1	<1	1.9

DATE	LANTHA-NUM BOT MAT <63U WS FIELD (UG/G) (34885)	LEAD BOT MAT <63U WS FIELD (UG/G) (34890)	LITHIUM BOT MAT <63U WS FIELD (UG/G) (34895)	MAGNE-SIUM BOT MAT <63U WS FIELD PERCENT (34900)	MANGA-NESE BOT MAT <63U WS FIELD (UG/G) (34905)	MERCURY BOT MAT <63U WS FIELD (UG/G) (34910)	MOLYB-DENUM BOT MAT <63U WS FIELD (UG/G) (34915)	NEODYM-IUM BOT MAT <63U WS FIELD (UG/G) (34920)	NICKEL BOT MAT <63U WS FIELD (UG/G) (34925)	NIOBIUM BOT MAT <63U WS FIELD (UG/G) (34930)	PHOS-PHORUS BOT MAT <63U WS FIELD PERCENT (34935)
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	26	14	22	.70	340	.02	<1	20	14	10	.059
12...	26	14	22	.70	380	.02	<1	20	14	9	.061
12...	23	14	21	.71	410	.02	<1	20	14	10	.064

08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	POTAS-SIUM BOT MAT <63U WS FIELD PERCENT (34940)	SCAN-DIUM BOT MAT <63U WS FIELD (UG/G) (34945)	SELE-NIUM BOT MAT <63U WS FIELD (UG/G) (34950)	SILVER BOT MAT <63U WS FIELD (UG/G) (34955)	SODIUM BOT MAT <63U WS FIELD PERCENT (34960)	STRON-TIUM BOT MAT <63U WS FIELD (UG/G) (34965)	SULFUR BOT MAT <63U WS FIELD PERCENT (34970)	TANTA-LUM BOT MAT <63U WS FIELD (UG/G) (34975)	THORIUM BOT MAT <63U WS FIELD (UG/G) (34980)	TIN BOT MAT <63U WS FIELD (UG/G) (34985)	URANIUM BOT MAT <63U WS FIELD (UG/G) (35000)
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	1.1	6	.5	.2	.25	230	<.05	1	7	2	2.0
12...	1.0	6	.5	.2	.22	240	.05	<1	7	2	1.9
12...	1.0	6	.6	.2	.22	250	<.05	<1	7	2	1.8

DATE	VANA-DIUM BOT MAT <63U WS FIELD (UG/G) (35005)	YTTRIUM BOT MAT <63U WS FIELD (UG/G) (35010)	YTTER-BIUM BOT MAT <63U WS FIELD (UG/G) (35015)	ZINC BOT MAT <63U WS FIELD (UG/G) (35020)	CARBON, ORGANIC SED, BM WS,<63U DW, REC (PER-CENT) (49266)	CARBON, ORG + INORG, SED, BM WS,<63U DW, REC PERCENT (49267)	CARBON, INORG, SED, BM WS,<63U DW, REC (PER-CENT) (49269)	CARBON, INORG, SED, BM WS,<2MM DW, REC (G/KG) (49270)	CARBON, ORGANIC SED, BM WS,<2MM DW, REC (G/KG) (49271)	CARBON, ORG + INORG SED, BM WS,<2MM DW, REC (G/KG) (49272)	TITA-NIUM, SED, BM WS,<63U DRY WGT REC PERCENT (49274)
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	52	16	2	48	1.22	5.78	4.56	52.0	13.0	65.0	.220
12...	52	16	2	51	1.45	6.10	4.65	49.0	18.0	67.0	.230
12...	50	16	2	50	1.62	6.40	4.78	49.0	24.0	73.0	.210

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 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WRD TX-73-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 1,014.82 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. 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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1923, 13.7 ft in 1927, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 140 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 17	0845	498	3.66	Oct 18	0115	c12,600	a15.21
Oct 17	1315	4,360	7.78				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	e26	e2.5	e.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	e21	e2.2	e.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	e18	e2.0	e.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	e17	e1.8	e.00	.00	.00	.00	.00	.00	2.2	.00	.00
5	.00	e20	e1.6	e.00	.00	.00	.00	.00	.00	.05	.00	.00
6	.13	e18	e1.3	e.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	e19	e1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	e18	e.90	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	e18	e.80	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	e17	e1.0	.00	.00	.00	.00	4.5	.00	.00	.00	.00
11	.00	e15	e.90	.00	.00	.00	.00	.00	.00	11	.00	.00
12	.00	e14	e.80	.00	.00	.00	.00	.00	2.2	.81	.00	.00
13	.00	e15	e.65	.00	.00	.00	.00	.00	1.1	.00	.00	.00
14	.00	e50	e.55	.00	.00	.00	.00	.00	3.3	.00	.00	.00
15	.00	e40	e.45	.00	.00	.00	.00	.00	1.6	.00	.00	.00
16	.00	e35	e.42	.00	.00	.00	.00	.00	.06	.00	.00	.00
17	726	e32	e.36	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	1350	e28	e.33	.00	.00	4.3	.00	.00	.00	.00	.00	.00
19	249	e25	e.28	.00	.00	.78	.00	.00	2.0	1.9	.00	.00
20	164	e20	e.15	.00	.00	.00	.00	.00	14	.22	.00	.00
21	109	e18	e.07	.00	.00	.00	.00	.00	12	.01	.00	.00
22	75	e16	.00	.00	.00	.00	.00	.00	4.3	.00	.00	.00
23	57	e14	e.10	.00	.00	.00	.00	.00	.33	.00	.00	.00
24	44	e12	e.16	.00	.00	.00	.00	.00	.00	.00	e1.8	.00
25	33	e9.0	e.16	.00	.00	.00	1.2	.00	.00	.00	.00	.00
26	26	e7.5	e.13	.00	.00	.00	1.1	.00	.00	.00	.00	.00
27	20	e6.0	e.07	.00	.00	3.8	.03	.00	.00	.00	.00	.00
28	16	e4.5	e.02	.00	.00	1.8	.00	.00	.00	.00	.00	.00
29	13	e3.5	e.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	11	e3.0	e.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	8.1	---	e.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	2901.23	559.5	20.70	0.00	0.00	10.68	2.33	4.50	40.89	16.19	1.80	0.00
MEAN	93.6	18.6	.67	.000	.000	.34	.078	.15	1.36	.52	.058	.000
MAX	1350	50	2.5	.00	.00	4.3	1.2	4.5	14	11	1.8	.00
MIN	.00	3.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	5750	1110	41	.00	.00	21	4.6	8.9	81	32	3.6	.00
CFSM	6.24	1.24	.04	.00	.00	.02	.01	.01	.09	.03	.00	.00
IN.	7.20	1.39	.05	.00	.00	.03	.01	.01	.10	.04	.00	.00

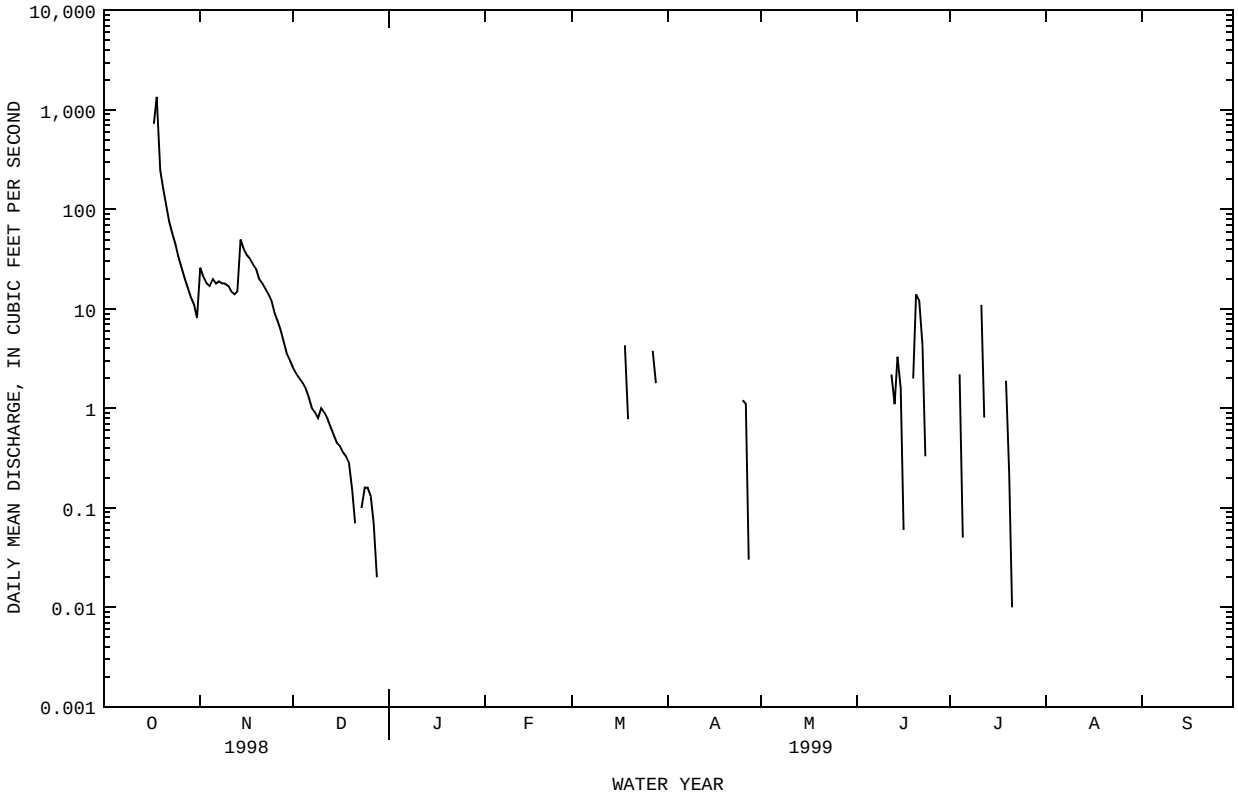
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	7.39	2.48	3.87	1.84	3.64	3.79	3.27	7.15	15.5	3.92	.88	1.68
MAX	93.6	18.6	79.0	31.0	66.3	32.3	40.0	66.6	142	84.4	13.5	36.1
(WY)	1999	1999	1992	1992	1992	1985	1973	1992	1987	1973	1971	1973
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1979	1971	1971	1969	1971	1971	1983	1989	1980	1969	1968	1969

08181400 HELOTES CREEK AT HELOTES, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1968 - 1999	
ANNUAL TOTAL	4133.29		3557.82			
ANNUAL MEAN	11.3		9.75		4.67	
HIGHEST ANNUAL MEAN					28.3	1992
LOWEST ANNUAL MEAN					.003	1984
HIGHEST DAILY MEAN	1350	Oct 18	1350	Oct 18	1350	Oct 18 1998
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Jun 30 1968
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 7	.00	Oct 7	.00	Jul 4 1968
INSTANTANEOUS PEAK FLOW			c12600	Oct 18	c12600	Oct 18 1998
INSTANTANEOUS PEAK STAGE			a15.21	Oct 18	a15.21	Oct 18 1998
ANNUAL RUNOFF (AC-FT)	8200		7060		3380	
ANNUAL RUNOFF (CFSM)	.75		.65		.31	
ANNUAL RUNOFF (INCHES)	10.25		8.82		4.23	
10 PERCENT EXCEEDS	17		13		6.7	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
c From rating curve extended above current-meter discharge measurement of 4,960 ft^3/s.
a From floodmark.



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.
BACTERIA DATA: May 1969 to current year.
PESTICIDE DATA: May 1969 to Jun 1981, Oct 1984 to current year.
SEDIMENT DATA: Oct 1968 to Sep 1973.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
17...	1015	397	222	8.1	--	--	--	16	4.2	--	--
JUN											
21...	1130	41	72	--	23.5	7.7	93	31	4.2	11000	K25000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT											
17...	98	9	32	4.1	3.6	.2	7	2.3	89	10	6.7
JUN											
21...	39	1	14	.73	.49	.0	3	1.5	38	.96	.67

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, 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)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT											
17...	137	228	99	.576	<.020	2.8	.28	2.2	.272	<.050	25
JUN											
21...	60	42	74	.065	<.020	.76	.20	.69	.142	.063	7.5

DATE	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)
OCT											
17...	<.010	<4	<1	2	<10	<1	5	5	10	<.10	6
JUN											
21...	<.010	<4	1	2	<4.0	<1	2	3	9	<.10	1

DATE	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)
OCT										
17...	<1	<1	30	<.040	<.100	<.030	<.100	<1.00	<.100	<.100
JUN										
21...	<1	<1	E20	<.040	<.100	<.030	<.100	<1.00	<.100	<.100

08181400 HELOTES CREEK AT HELOTES, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
OCT										
17...	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
JUN										
21...	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	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)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT										
17...	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100
JUN										
21...	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100

08181440 INGRAM ROAD OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX

LOCATION.--Lat 29°26'25", long 98°39'26", Bexar County, Hydrologic Unit 12100302, 445 ft south of the intersection of Ingram Road and Richland Hills Drive on the east side of the northbound lane of Ingram Road.

DRAINAGE AREA.-- 0.0218 mi^2.

PERIOD OF RECORD.-- Chemical data: Dec 1993 to current year. Biochemical data: Dec 1993 to current year. Pesticide data: Dec 1993 to current year.

REMARKS.--Water-quality samples and associated discharge data were collected for selected storm events from storm sewer systems draining urban basins. This study is in cooperation with the city of San Antonio to fulfill requirements (by EPA) for the Texas Department of Transportation in applying for a National Pollution Discharge Elimination System (NPDES) storm-water discharge permit.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	PRECIP-ITATION TOTAL INCHES/ STORM (82381)	ELAPSED TIME OF STORM (HOURS) (00135)	STORM WATER FLOW (MGD) (81395)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT												
06-06	0105	1.4	6.6	1.6	64	58	6.4	7.6	20.0	--	2.3	--
06...	0114	--	--	--	--	--	--	--	--	<10	--	6400
MAY												
18-19	2330	.20	1.9	.81	38	71	7.4	7.9	--	--	5.6	--
18...	2341	--	--	--	--	--	--	--	--	36	--	K10000
AUG												
04...	1606	--	--	--	--	--	--	--	--	71	--	>600000
AUG												
04-04	1615	.66	1.3	2.7	153	114	6.7	7.3	--	--	5.5	--

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
06-06	--	21	45	38	8.0	.23	.74	7	.1	1.4	1.5	.72
06...	8100	--	--	--	--	--	--	--	--	--	--	--
MAY												
18-19	--	24	108	36	9.3	.23	1.1	9	.1	1.2	2.5	1.3
18...	8900	--	--	--	--	--	--	--	--	--	--	--
AUG												
04...	7800	--	--	--	--	--	--	--	--	--	--	--
AUG												
04-04	--	42	55	77	16	.43	1.4	7	.1	2.1	.11	1.3

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)	ANTI-MONY UNFLTRD TOT REC EPA-CON TRACT (UG/L) (99897)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	CYANIDE UNFLTRD TOT REC EPA-CON-TRACT (MG/L) (99896)	CYANIDE TOTAL (MG/L AS CN) (00720)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
OCT												
06-06	.66	.183	.092	--	<1	<10	<1	<1	3	--	--	4
06...	--	--	--	<10.0	--	--	--	--	--	<10.0	<.010	--
MAY												
18-19	1.1	.161	.058	--	2	<4.0	<1	3	4	--	--	7
18...	--	--	--	<10.0	--	--	--	--	--	<10.0	<.010	--
AUG												
04...	--	--	--	<10.0	--	--	--	--	--	<10.0	<.010	--
AUG												
04-04	1.3	.274	<.050	--	1	<4.0	<1	3	10	--	--	9

08181440 INGRAM ROAD OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER UNFLTRD TOT REC EPA-CON-TRACT (UG/L) (99895)	THAL-LIUM, TOTAL (UG/L AS TL) (01059)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	PHENOLS TOTAL (UG/L) (32730)	ACRYLO-NITRILE TOTAL (UG/L) (34215)	BENZENE TOTAL (UG/L) (34030)
OCT												
06-06	<.10	2	<1	<1	--	--	40	--	--	--	--	--
06...	--	--	--	--	<1.00	<10	--	7.6	1	<1	<5.00	<.200
MAY												
18-19	<.10	2	<1	<1	--	--	60	--	--	--	--	--
18...	--	--	--	--	<.500	<10	--	8.7	2	<4	<2.50	<.200
AUG												
04...	--	--	--	--	<1.00	<10	--	20	3	6	<25.0	<2.00
AUG												
04-04	.13	3	<1	<1	--	--	90	--	--	--	--	--

DATE	BROMO-BENZENE WATER, WHOLE, TOTAL (UG/L) (81555)	METHANE BROMO CHLORO-WAT UNFLTRD REC (UG/L) (77297)	BROMO-FORM TOTAL (UG/L) (32104)	BENZENE N-BUTYL WATER UNFLTRD REC (UG/L) (77342)	BENZENE SEC BUTYL-WATER UNFLTRD REC (UG/L) (77350)	BENZENE TERT-BUTYL-WATER UNFLTRD REC (UG/L) (77353)	CARBON TETRA-CHLO-RIDE TOTAL (UG/L) (32102)	CHLORO-BENZENE TOTAL (UG/L) (34301)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L) (32105)	CHLORO-ETHANE TOTAL (UG/L) (34311)	CHLORO-FORM TOTAL (UG/L) (32106)	METHYL-CHLO-RIDE TOTAL (UG/L) (34418)
OCT												
06-06	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400
MAY												
18-19	--	--	--	--	--	--	--	--	--	--	--	--
18...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
AUG												
04...	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
AUG												
04-04	--	--	--	--	--	--	--	--	--	--	--	--

DATE	O-CHLORO-TOLUENE WATER WHOLE TOTAL (UG/L) (77275)	TOLUENE P-CHLOR WATER UNFLTRD REC (UG/L) (77277)	DIBROMO CHLORO-PROPANE WATER WHOLE TOT.REC (UG/L) (82625)	DI-BROMO-METHANE WATER WHOLE RECOVER (UG/L) (30217)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L) (77651)	BROMO-DI-CHLORO-METHANE TOTAL (UG/L) (32101)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L) (34501)	1,1-DI CHLORO-PRO-PENE, WAT, WH TOTAL (UG/L) (77168)	BENZENE O-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34536)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34566)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34571)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L) (34668)
OCT												
06-06	--	--	--	--	--	--	--	--	<.400	<.400	<.400	--
06...	<.400	<.400	<2.00	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400
MAY												
18-19	--	--	--	--	--	--	--	--	<.200	<.200	<.200	--
18...	<.200	<.200	<1.00	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
AUG												
04...	<2.00	<2.00	<10.0	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
AUG												
04-04	--	--	--	--	--	--	--	--	<2.00	<2.00	<2.00	--

DATE	1,1-DI-CHLORO-ETHANE TOTAL (UG/L) (34496)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L) (32103)	1,2-DI-PHENYL-HYDRA-ZINE WATER TOT.REC (UG/L) (82626)	CIS-1,2-DI-CHLORO-ETHENE WATER TOTAL (UG/L) (77093)	TRANS-1,2-DI-CHLORO-ETHENE TOTAL (UG/L) (34546)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L) (34541)	1,3-DI-CHLORO-PROPANE WAT. WH TOTAL (UG/L) (77173)	2,2-DI CHLORO-PRO-PANE WAT, WH TOTAL (UG/L) (77170)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34704)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34699)	ETHYL-BENZENE TOTAL (UG/L) (34371)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L) (39702)
OCT												
06-06	--	--	<5.00	--	--	--	--	--	--	--	--	<.400
06...	<.400	<.400	--	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400
MAY												
18-19	--	--	<5.00	--	--	--	--	--	--	--	--	<.200
18...	<.200	<.200	--	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
AUG												
04...	<2.00	<2.00	--	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
AUG												
04-04	--	--	<5.00	--	--	--	--	--	--	--	--	<2.00

08181440 INGRAM ROAD OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	ISO-PROPYL-BENZENE WATER WHOLE REC (UG/L) (77223)	P-ISO-PROPYL-TOLUENE WATER WHOLE REC (UG/L) (77356)	METHYL-BROMIDE TOTAL (UG/L) (34413)	METHYL ENE CHLO-RIDE TOTAL (UG/L) (34423)	METHYL TERT-BUTYL ETHER WAT UNF REC (UG/L) (78032)	NAPHTH-ALENE TOTAL (UG/L) (34696)	BENZENE N-PROPY WATER UNFLTRD REC (UG/L) (77224)	STYRENE TOTAL (UG/L) (77128)	ETHANE, 1112-TETRA-CHLORO-WAT UNF REC (UG/L) (77562)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L) (34516)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L) (34475)	TOLUENE TOTAL (UG/L) (34010)
OCT												
06-06	--	--	--	--	--	<.400	--	--	--	--	--	--
06...	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400
MAY												
18-19	--	--	--	--	--	<.200	--	--	--	--	--	--
18...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	.194
AUG												
04...	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
AUG												
04-04	--	--	--	--	--	<2.00	--	--	--	--	--	--

DATE	1,2,3-TRI-CHLORO BENZENE WAT, WH REC (UG/L) (77613)	BENZENE 1,2,4-TRI-CHLORO-WAT UNF REC (UG/L) (34551)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L) (34506)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L) (34511)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L) (39180)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L) (34488)	123-TRI CHLORO-PROPANE WATER WHOLE TOTAL (UG/L) (77443)	FREON-113 WATER UNFLTRD REC (UG/L) (77652)	BENZENE 124-TRI METHYL UNFILT RECOVER (UG/L) (77222)	BENZENE 135-TRI METHYL WATER UNFLTRD REC (UG/L) (77226)	VINYL CHLO-RIDE TOTAL (UG/L) (39175)	XYLENE WATER UNFLTRD REC (UG/L) (81551)
OCT												
06-06	--	<.400	--	--	--	--	--	--	--	--	--	--
06...	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400	<.400
MAY												
18-19	--	<.200	--	--	--	--	--	--	--	--	--	--
18...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
AUG												
04...	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
AUG												
04-04	--	<2.00	--	--	--	--	--	--	--	--	--	--

DATE	ACE-NAPHTH-ENE TOTAL (UG/L) (34205)	ACE-NAPHTH-YLENE TOTAL (UG/L) (34200)	ANTHRA-CENE TOTAL (UG/L) (34220)	BENZI-DINE TOTAL (UG/L) (39120)	BENZ(A) ANTHRA-CENE WATER UNFLTRD REC (UG/L) (34526)	BENZO-A-PYRENE TOTAL (UG/L) (34247)	BENZO B FLUOR-AN-THENE TOTAL (UG/L) (34230)	BENZO K FLUOR-AN-THENE TOTAL (UG/L) (34242)	BENZO-[GHI]-PERY-LENE TOTAL (UG/L) (34521)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L) (34636)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L) (34292)	BIS(2-CHLORO-ETHOXY) METHANE TOTAL (UG/L) (34278)
OCT												
06-06	<5.00	<5.00	<5.00	<40.0	E.293	E.389	E.644	<10.0	E.349	<5.00	<5.00	<5.00
06...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
18-19	E.014	E.016	E.063	<40.0	E.536	E.798	E.992	E.675	E.533	<5.00	<5.00	<5.00
18...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
04...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
04-04	<5.00	<5.00	E.045	<40.0	E.374	E.566	E.877	E.476	E.380	<5.00	<5.00	<5.00

DATE	BIS(2-CHLORO-ETHYL) ETHER UNFLTRD RECOVER (UG/L) (34273)	BIS(2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L) (34283)	PARA-CHLORO-META CRESOL TOTAL (UG/L) (34452)	2-CHLORO-NAPH-THALENE TOTAL (UG/L) (34581)	2-CHLORO-PHENOL TOTAL (UG/L) (34586)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L) (34641)	CHRY-SENE TOTAL (UG/L) (34320)	1,2,5,6-DIBENZ-ANTHRA-CENE TOTAL (UG/L) (34556)	3,3'-DI-CHLORO-BENZI-DINE TOTAL (UG/L) (34631)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L) (34601)	DIETHYL PHTHAL-ATE TOTAL (UG/L) (34336)
OCT											
06-06	<5.00	<5.00	<30.0	<5.00	<5.00	<5.00	E.596	<10.0	<20.0	<5.00	<5.00
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
18-19	<5.00	<5.00	<30.0	<5.00	<5.00	<5.00	E.913	E.184	<20.0	<5.00	<5.00
18...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04-04	<5.00	<5.00	<30.0	<5.00	<5.00	<5.00	E.789	<10.0	<20.0	<5.00	<5.00

08181440 INGRAM ROAD OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	DI-METHYL PHTHAL-ATE TOTAL (UG/L) (34341)	2,4-DI-METHYL-PHENOL TOTAL (UG/L) (34606)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L) (39110)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L) (34657)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L) (34616)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L) (34611)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L) (34626)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L) (34596)	BIS(2-ETHYL HEXYL) PHTHAL-ATE TOTAL (UG/L) (39100)	FLUOR-ANTHENE TOTAL (UG/L) (34376)	FLUOR-ENE TOTAL (UG/L) (34381)
OCT											
06-06	<5.00	<5.00	<5.00	<30.0	<20.0	<5.00	<5.00	<10.0	E1.18	E.940	<5.00
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
18-19	<5.00	<5.00	<5.00	<30.0	<20.0	<5.00	<5.00	<10.0	<5.00	E1.49	E.032
18...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04-04	<5.00	<5.00	<5.00	<30.0	<20.0	<5.00	<5.00	<10.0	E3.20	E1.15	E.024

DATE	HEXA-CHLORO-BENZENE TOTAL (UG/L) (39700)	CYCLOPENTADIEN HEXA-CHLORO-UNFLTRD RECOVER (UG/L) (34386)	ETHANE HEXA-CHLORO-WATER UNFLTRD RECOVER (UG/L) (34396)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L) (34403)	ISO-PHORONE TOTAL (UG/L) (34408)	BENZENE NITRO-WATER UNFLTRD RECOVER (UG/L) (34447)	N-NITRO-SODI-METHYL-AMINE TOTAL (UG/L) (34438)	2-NITRO-PHENOL TOTAL (UG/L) (34591)	4-NITRO-PHENOL TOTAL (UG/L) (34646)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L) (34428)	N-NITRO-SODI-PHENYL-AMINE TOTAL (UG/L) (34433)
OCT											
06-06	<5.00	<20.0	<5.00	E.404	<5.00	<5.00	<5.00	<5.00	E2.67	<5.00	<5.00
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
18-19	<5.00	<20.0	<5.00	E.844	E.044	<5.00	<5.00	<5.00	E2.13	<5.00	<5.00
18...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04-04	<5.00	<20.0	<5.00	E.638	E.072	<5.00	<5.00	<5.00	<30.0	<5.00	E.036

DATE	PENTA-CHLORO-PHENOL TOTAL (UG/L) (39032)	PHENAN-THRENE TOTAL (UG/L) (34461)	PHENOL (C6H-5OH) TOTAL (UG/L) (34694)	PYRENE TOTAL (UG/L) (34469)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L) (34621)	ALDRIN, TOTAL (UG/L) (39330)	P,P' DDT, TOTAL (UG/L) (39300)	ALPHA BHC TOTAL (UG/L) (39337)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	LINDANE TOTAL (UG/L) (39340)
OCT											
06-06	<30.0	E.502	<5.00	E.752	<20.0	<.040	<.100	<.030	<.030	<.090	<.030
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
18-19	<30.0	E.637	<5.00	E1.19	<20.0	<.040	<.100	<.030	<.030	<.090	<.030
18...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04-04	<30.0	E.412	<5.00	<5.00	<20.0	<.040	<.100	<.030	<.030	<.090	<.030

DATE	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ENDO-SULFAN II TOTAL (UG/L) (34356)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)
OCT											
06-06	<.100	<.100	<.100	<.100	<.040	<.020	<.100	<.040	<.600	<.060	<.200
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
18-19	<.100	<.100	<.100	<.100	<.040	<.020	<.100	<.040	<.600	<.060	<.200
18...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04-04	<.100	<.100	<.100	<.100	<.040	<.020	<.100	<.040	<.600	<.060	<.200

08181440 INGRAM ROAD OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	TOX-APHENE, TOTAL (UG/L) (39400)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	DI-AZINON, TOTAL (UG/L) (39570)
OCT											
06-06	<.030	<.800	<2.00	<.100	<1.00	<.100	<.100	<.100	<.100	<.100	<.050
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
18-19	<.030	<.800	<2.00	<.100	<1.00	<.100	<.100	<.100	<.100	<.100	<.050
18...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04-04	<.030	<.800	<2.00	<.100	<1.00	<.100	<.100	<.100	<.100	<.100	<.050

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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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is 573.49 ft above sea level. Satellite telemeter at station.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 17	1630	31,600	26.01	Oct 18	0930	93,300	a29.31

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	155	16	10	9.4	11	10	6.9	3.5	13	6.9	2.6
2	4.8	170	16	10	9.8	12	10	7.2	3.7	12	6.8	2.5
3	4.8	59	15	9.3	9.6	12	10	8.0	3.8	12	6.7	2.3
4	4.5	38	15	9.6	10	11	9.7	7.4	3.8	35	11	2.3
5	4.6	59	14	10	11	12	9.6	6.7	3.4	33	17	2.6
6	121	e42	14	10	11	12	9.5	6.1	3.2	16	7.5	2.8
7	23	e35	13	11	10	12	9.6	5.9	3.2	13	2.8	3.0
8	9.4	e28	13	10	11	12	9.7	5.8	3.3	13	2.5	6.1
9	6.4	e26	13	9.1	11	12	9.6	5.7	3.2	11	2.5	4.3
10	5.4	24	18	9.3	12	12	8.8	38	2.9	54	2.4	3.0
11	5.1	21	15	9.5	13	12	8.6	9.9	2.9	60	2.4	2.6
12	4.9	21	14	9.4	12	12	8.6	7.4	2.7	35	2.4	2.4
13	4.9	29	12	8.9	11	20	9.3	6.1	4.5	24	2.6	2.3
14	5.3	131	11	9.1	11	7.8	9.3	5.5	3.4	26	2.6	2.6
15	5.5	60	11	9.0	11	7.0	8.7	5.3	326	15	2.5	2.4
16	5.4	41	11	8.8	11	7.3	8.4	5.0	239	11	2.5	2.3
17	7230	31	11	8.7	11	7.9	8.3	4.8	54	9.5	2.4	2.3
18	e19800	25	11	8.5	11	7.3	8.2	60	29	9.9	2.4	2.4
19	e1030	24	10	8.2	11	12	8.2	15	21	9.2	2.4	2.4
20	418	22	9.8	8.9	11	13	8.3	8.9	136	9.6	2.4	2.3
21	131	21	10	9.0	11	9.3	7.9	e8.1	236	11	2.3	2.3
22	73	19	10	8.8	12	8.5	7.4	e7.9	356	17	2.3	2.3
23	55	18	10	8.5	11	7.5	8.3	e7.6	121	10	6.1	2.5
24	46	18	10	9.1	12	7.2	8.2	e6.0	67	8.1	5.0	2.4
25	41	16	9.9	8.6	12	6.8	36	5.7	54	7.8	2.8	2.7
26	38	16	9.8	9.0	12	6.5	59	5.4	30	7.5	2.6	2.5
27	33	15	9.8	8.9	11	19	21	5.7	19	7.8	2.6	2.4
28	28	15	10	9.1	e11	150	11	5.3	17	7.7	2.4	2.4
29	25	16	13	9.7	---	24	8.7	11	15	7.7	2.5	2.6
30	23	e15	11	9.3	---	11	7.8	3.9	14	7.5	2.6	2.6
31	21	---	10	8.9	---	10	---	3.7	---	7.3	2.6	---
TOTAL	29212.1	1210	376.3	286.2	309.8	484.1	357.7	295.9	1781.5	520.6	124.5	80.2
MEAN	942	40.3	12.1	9.23	11.1	15.6	11.9	9.55	59.4	16.8	4.02	2.67
MAX	19800	170	18	11	13	150	59	60	356	60	17	6.1
MIN	4.5	15	9.8	8.2	9.4	6.5	7.4	3.7	2.7	7.3	2.3	2.3
AC-FT	57940	2400	746	568	614	960	709	587	3530	1030	247	159

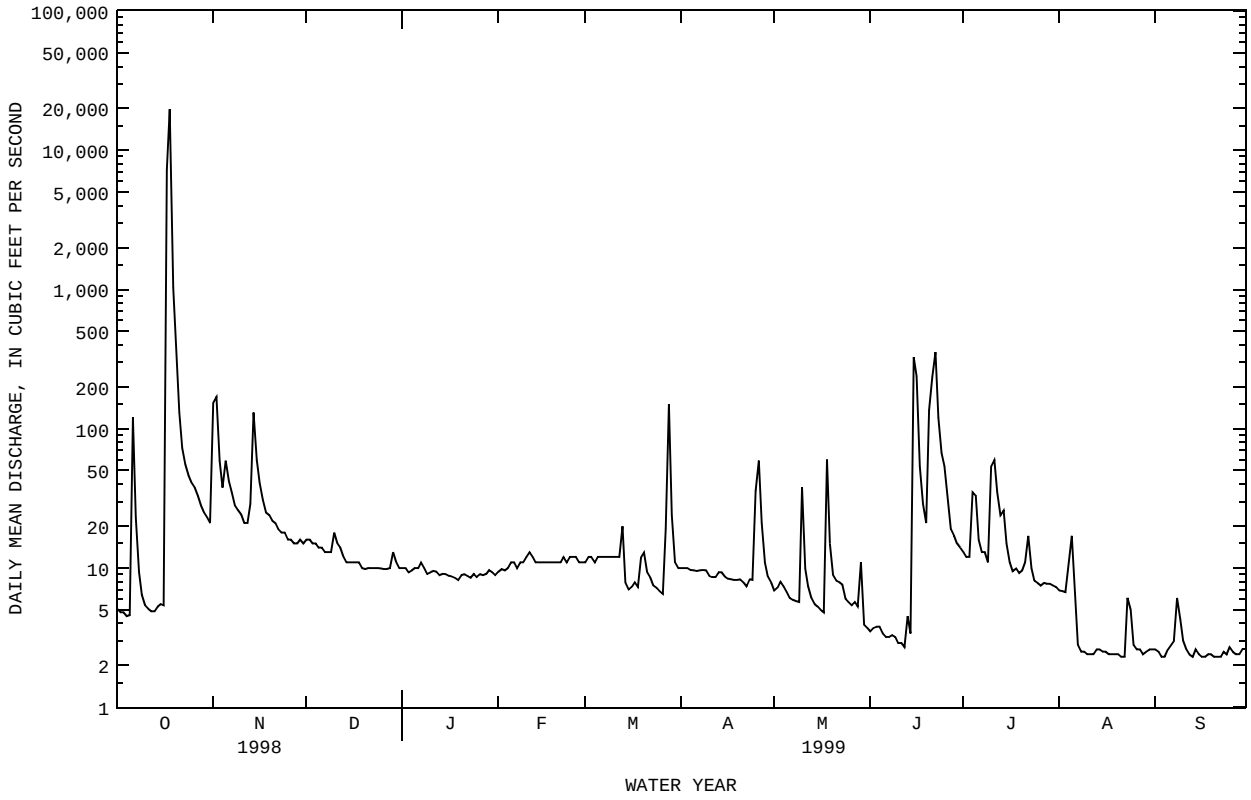
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1999, BY WATER YEAR (WY)

MEAN	84.0	12.9	48.5	19.3	39.5	30.1	21.1	65.3	146	21.0	12.2	13.4
MAX	942	40.3	575	116	355	192	82.6	356	824	144	69.6	38.3
(WY)	1999	1999	1992	1992	1992	1992	1991	1992	1987	1990	1998	1988
MIN	2.80	3.95	4.62	3.76	5.93	5.11	3.69	2.14	2.72	2.56	1.94	1.97
(WY)	1997	1992	1990	1997	1989	1996	1995	1996	1996	1989	1989	1989

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1985 - 1999	
ANNUAL TOTAL	37071.8		35038.9			
ANNUAL MEAN	102		96.0		42.7	
HIGHEST ANNUAL MEAN					156	1992
LOWEST ANNUAL MEAN					6.22	1996
HIGHEST DAILY MEAN	19800	Oct 18	19800	Oct 18	19800	Oct 18 1998
LOWEST DAILY MEAN	1.9	Jun 22	2.3	Aug 21	.52	Sep 15 1997
ANNUAL SEVEN-DAY MINIMUM	2.1	Jun 18	2.3	Sep 16	.78	Aug 1 1996
INSTANTANEOUS PEAK FLOW			i93300	Oct 17	i93300	Oct 17 1998
INSTANTANEOUS PEAK STAGE			a29.31	Oct 17	a29.31	Oct 17 1998
ANNUAL RUNOFF (AC-FT)	73530		69500		30960	
10 PERCENT EXCEEDS	41		35		37	
50 PERCENT EXCEEDS	7.3		9.7		7.9	
90 PERCENT EXCEEDS	3.2		2.6		2.9	

e Estimated
i From indirect measurement of peak flow.
a From floodmark.

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued



08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jul 1984 to current year.
BIOCHEMICAL DATA: Jul 1984 to Oct 1997.
PESTICIDE DATA: Aug 1995 to Oct 1997.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Sep 1984 to current year.
PH: Apr 1989 to current year.
WATER TEMPERATURE: Sep 1984 to current year.
DISSOLVED OXYGEN: Apr 1989 to current year.

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

REMARKS.--Interruptions in the record were caused by malfunctions of the instrument. 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. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,260 microsiemens, Nov 19, 1988, Jun 29, 1995; minimum, 39 microsiemens, Jan 18, 1991.
PH: Maximum, 8.5 units, Mar 29, 1990, Oct 6, 17, 1998; minimum, 6.7 units, Jun 30, 1991.
WATER TEMPERATURE: Maximum, 32.5°C, Jul 16, 17, 1989; minimum, 4.0°C, Dec 24, 1989.
DISSOLVED OXYGEN: Maximum, 19.8 mg/L, Oct 13, 14, 1989; minimum, 1.2 mg/L, on several days in water years 1990, 1993, 1996, and 1997.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 891 microsiemens, Apr 24-25; minimum, 91 microsiemens, Oct 17.
PH: Maximum, 8.5 units, Oct 6, 17; minimum, 6.8 units, Apr 30, May 1-2.
WATER TEMPERATURE: Maximum, 30.5°C, Aug 12; minimum, 10.3°C, Dec 26.
DISSOLVED OXYGEN: Maximum, 16.7 mg/L, Jun 13; minimum, 3.5 mg/L, Apr 2.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	735	728	732	---	---	e560	853	834	842	776	763	769
2	760	733	739	---	---	e340	854	835	844	763	734	745
3	771	760	767	---	---	e550	844	835	841	745	735	739
4	766	744	754	---	---	e670	840	826	830	748	737	743
5	744	734	739	---	---	e755	---	---	e832	743	734	738
6	737	96	337	---	---	e760	---	---	e834	749	739	744
7	336	231	275	---	---	e770	---	---	e838	744	737	740
8	497	336	414	---	---	e770	846	827	840	775	744	756
9	597	497	561	---	---	e780	828	814	822	783	772	776
10	669	597	643	776	768	771	829	806	815	799	770	786
11	708	667	684	789	776	781	829	709	769	777	747	764
12	739	705	728	802	789	797	809	749	785	774	747	758
13	732	707	721	801	671	776	804	749	777	756	736	747
14	708	703	706	701	296	430	803	793	796	749	718	728
15	709	688	697	712	409	617	817	795	802	733	716	725
16	700	682	687	629	563	582	831	817	828	727	709	718
17	712	91	345	696	603	652	827	808	814	734	717	726
18	---	---	e160	734	696	722	810	799	803	741	734	737
19	---	---	e250	783	733	758	805	791	796	734	714	722
20	---	---	e320	795	782	791	810	797	804	721	711	715
21	---	---	e380	790	774	784	804	798	802	730	721	725
22	---	---	e420	797	784	793	801	785	790	740	729	734
23	---	---	e480	800	794	798	785	780	783	745	727	733
24	---	---	e610	798	791	794	801	783	790	748	729	741
25	---	---	e610	837	793	825	804	788	799	729	717	722
26	---	---	e670	841	816	835	788	778	783	740	724	734
27	---	---	e690	841	835	838	788	774	783	742	731	737
28	---	---	e700	840	832	836	776	767	771	735	725	731
29	---	---	e730	837	833	834	780	757	771	748	733	744
30	---	---	e740	---	---	e835	770	758	765	747	736	742
31	---	---	e740	---	---	---	783	770	779	737	723	728
MONTH	---	---	582	---	---	727	---	---	804	799	709	740

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	746	728	737	783	773	778	698	629	676	761	686	723
2	746	738	743	780	772	776	669	629	640	800	761	781
3	744	736	740	782	772	777	735	669	706	811	796	802
4	747	737	742	---	---	e790	752	735	746	816	775	797
5	750	742	746	826	819	823	762	745	753	822	809	815
6	746	740	743	825	807	817	772	758	765	843	822	830
7	757	740	750	819	808	811	779	765	773	848	838	842
8	757	748	753	816	808	811	789	776	783	857	846	852
9	751	742	747	818	806	813	802	788	795	855	845	849
10	748	743	745	809	802	807	836	798	815	845	223	549
11	750	743	746	803	801	803	864	836	850	---	---	e805
12	760	745	755	808	779	804	872	852	858	---	---	e840
13	760	750	756	808	588	757	853	844	849	---	---	e850
14	751	747	748	753	524	619	845	838	841	---	---	e780
15	748	741	745	810	753	799	848	842	846	---	---	e640
16	758	743	752	807	779	789	848	843	846	---	---	e400
17	763	751	758	783	772	777	849	839	845	---	---	e290
18	756	743	750	773	724	746	863	842	853	---	---	e430
19	748	737	743	759	725	741	870	853	863	---	---	e705
20	755	738	748	760	645	697	869	858	864	---	---	e750
21	761	750	756	731	674	719	868	865	866	---	---	e805
22	755	746	751	799	727	770	868	858	863	---	---	e810
23	755	746	751	812	798	808	866	855	859	---	---	e810
24	779	751	767	820	812	815	891	865	879	---	---	e805
25	788	773	780	813	807	811	891	343	704	---	---	e800
26	---	---	e780	847	793	831	791	296	566	---	---	e790
27	---	---	e778	847	158	832	551	451	530	---	---	e640
28	---	---	e776	617	175	310	541	519	534	---	---	e490
29	---	---	---	713	374	588	605	541	569	---	---	e360
30	---	---	---	728	696	715	686	605	652	---	---	e600
31	---	---	---	696	668	679	---	---	---	---	---	e690
MONTH	---	---	753	---	---	755	891	296	766	---	---	707

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e680	754	723	742	775	751	761	735	727	731
2	687	658	671	747	726	734	777	750	761	746	735	739
3	707	657	677	740	724	731	763	744	754	751	742	747
4	744	707	725	750	179	650	759	724	745	753	745	750
5	738	718	729	618	212	536	727	445	608	748	734	741
6	764	726	743	528	498	512	690	448	586	744	732	737
7	805	758	780	657	528	591	727	690	718	758	744	751
8	857	805	829	751	657	714	726	721	724	752	713	741
9	853	832	842	773	749	758	725	710	717	713	549	662
10	834	816	824	768	130	690	715	708	713	655	548	610
11	835	810	820	515	144	398	714	704	709	658	600	632
12	846	815	827	468	126	372	710	700	706	600	581	591
13	827	786	799	469	432	462	717	703	708	626	592	608
14	839	303	802	618	406	485	742	716	728	666	626	647
15	799	102	293	742	618	692	771	742	756	691	666	678
16	271	202	227	762	737	748	787	771	776	716	691	703
17	388	271	333	752	729	739	791	784	788	724	715	720
18	486	388	450	729	708	719	790	755	774	717	701	710
19	542	486	519	713	705	708	756	735	746	701	694	697
20	535	163	382	730	698	715	749	739	743	698	695	697
21	286	185	251	701	672	693	749	734	744	702	698	700
22	282	218	239	720	675	694	746	740	742	709	699	704
23	340	277	314	736	709	720	749	730	742	716	708	712
24	413	340	374	756	726	739	737	601	681	719	711	715
25	482	338	431	765	746	754	646	634	641	712	703	708
26	573	338	502	756	735	746	639	577	604	706	679	693
27	631	573	601	745	727	736	593	572	579	700	688	692
28	676	629	651	741	722	732	626	593	606	716	700	707
29	687	665	675	748	722	734	653	626	638	717	706	714
30	753	685	709	781	742	759	699	653	673	712	703	709
31	---	---	---	774	755	764	731	699	717	---	---	---
MONTH	---	---	590	781	126	670	791	445	706	758	548	698

e Estimated

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.0	7.9	7.9	---	---	---	7.6	7.6	7.6	7.7	7.6	7.6
2	8.0	7.9	7.9	---	---	---	7.6	7.6	7.6	7.8	7.6	7.7
3	8.0	7.9	7.9	---	---	---	7.6	7.6	7.6	7.8	7.6	7.7
4	8.0	7.9	7.9	---	---	---	7.7	7.6	7.6	7.8	7.6	7.7
5	8.0	7.9	7.9	---	---	---	---	---	---	7.8	7.6	7.7
6	8.5	7.8	7.9	---	---	---	---	---	---	7.8	7.6	7.7
7	7.8	7.6	7.7	---	---	---	---	---	---	7.8	7.6	7.7
8	7.7	7.6	7.6	---	---	---	7.7	7.7	7.7	7.8	7.6	7.7
9	7.8	7.7	7.7	---	---	---	7.7	7.7	7.7	7.7	7.5	7.6
10	7.8	7.7	7.8	7.5	7.4	7.4	7.7	7.7	7.7	7.7	7.4	7.6
11	7.8	7.8	7.8	7.5	7.5	7.5	7.7	7.6	7.6	7.7	7.5	7.6
12	7.9	7.8	7.8	7.5	7.5	7.5	7.7	7.6	7.7	7.8	7.5	7.6
13	7.9	7.8	7.8	7.6	7.5	7.5	7.7	7.6	7.7	7.7	7.5	7.6
14	7.9	7.8	7.8	7.7	7.4	7.5	7.7	7.6	7.6	7.8	7.5	7.7
15	7.9	7.8	7.9	7.7	7.5	7.6	7.7	7.6	7.6	7.7	7.5	7.6
16	7.9	7.8	7.9	7.6	7.5	7.5	7.7	7.6	7.6	7.6	7.4	7.5
17	8.5	7.9	8.2	7.6	7.5	7.6	7.7	7.6	7.7	7.6	7.4	7.5
18	---	---	---	7.6	7.5	7.5	7.7	7.7	7.7	7.6	7.4	7.5
19	---	---	---	7.6	7.5	7.5	7.7	7.7	7.7	7.6	7.4	7.5
20	---	---	---	7.6	7.6	7.6	7.7	7.7	7.7	7.6	7.4	7.5
21	---	---	---	7.6	7.6	7.6	7.7	7.6	7.7	7.6	7.4	7.5
22	---	---	---	7.6	7.6	7.6	7.7	7.7	7.7	7.6	7.4	7.5
23	---	---	---	7.6	7.6	7.6	7.7	7.7	7.7	7.6	7.5	7.5
24	---	---	---	7.7	7.6	7.6	7.8	7.7	7.7	7.6	7.4	7.5
25	---	---	---	7.7	7.6	7.6	7.8	7.7	7.7	7.7	7.5	7.6
26	---	---	---	7.7	7.6	7.6	7.8	7.7	7.7	7.7	7.5	7.6
27	---	---	---	7.7	7.6	7.6	7.7	7.6	7.6	7.6	7.5	7.6
28	---	---	---	7.7	7.6	7.7	7.7	7.6	7.6	7.6	7.5	7.5
29	---	---	---	7.7	7.7	7.7	7.8	7.6	7.7	7.6	7.5	7.5
30	---	---	---	---	---	---	7.8	7.6	7.7	7.6	7.5	7.6
31	---	---	---	---	---	---	7.7	7.6	7.7	7.6	7.5	7.6
MONTH	---	---	---	---	---	---	---	---	---	7.8	7.4	7.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.7	7.5	7.6	7.7	7.6	7.6	7.2	7.2	7.2	6.9	6.8	6.8
2	7.7	7.5	7.6	7.7	7.6	7.6	7.3	7.1	7.2	7.0	6.8	6.9
3	7.7	7.5	7.6	7.7	7.2	7.6	7.3	7.2	7.3	7.2	7.0	7.1
4	7.7	7.5	7.6	---	---	---	7.3	7.3	7.3	7.2	7.0	7.1
5	7.6	7.5	7.6	7.7	7.5	7.6	7.4	7.3	7.3	7.2	7.1	7.1
6	7.7	7.5	7.6	7.7	7.5	7.6	7.4	7.3	7.4	7.2	7.1	7.1
7	7.7	7.5	7.6	7.6	7.5	7.6	7.5	7.3	7.4	7.2	7.1	7.1
8	7.6	7.5	7.6	7.6	7.5	7.6	7.5	7.4	7.4	7.2	7.1	7.2
9	7.7	7.5	7.6	7.7	7.6	7.6	7.5	7.4	7.5	7.2	7.1	7.2
10	7.7	7.5	7.6	7.7	7.5	7.6	7.5	7.3	7.4	7.5	7.2	7.3
11	7.6	7.5	7.6	7.7	7.5	7.6	7.4	7.3	7.4	---	---	---
12	7.7	7.6	7.7	7.6	7.4	7.5	7.4	7.3	7.3	---	---	---
13	7.7	7.6	7.7	7.7	7.4	7.6	7.4	7.3	7.3	---	---	---
14	7.7	7.6	7.7	7.5	7.2	7.4	7.4	7.3	7.4	---	---	---
15	7.8	7.6	7.7	7.6	7.4	7.5	7.4	7.3	7.4	---	---	---
16	7.7	7.6	7.7	7.6	7.5	7.5	7.3	7.2	7.3	---	---	---
17	7.8	7.6	7.7	7.6	7.5	7.5	7.3	7.2	7.3	---	---	---
18	7.8	7.6	7.7	7.6	7.4	7.5	7.3	7.2	7.3	---	---	---
19	7.8	7.6	7.7	7.6	7.4	7.5	7.3	7.2	7.3	---	---	---
20	7.7	7.6	7.7	7.6	7.5	7.6	7.4	7.3	7.3	---	---	---
21	7.8	7.6	7.7	7.6	7.4	7.5	7.3	7.2	7.3	---	---	---
22	7.8	7.6	7.7	7.5	7.3	7.4	7.3	7.2	7.3	---	---	---
23	7.8	7.6	7.7	7.5	7.4	7.5	7.3	7.2	7.3	---	---	---
24	7.8	7.6	7.7	7.5	7.4	7.5	7.3	7.1	7.2	---	---	---
25	7.7	7.6	7.7	7.5	7.4	7.5	7.3	7.0	7.1	---	---	---
26	---	---	---	7.5	7.4	7.5	7.2	7.0	7.1	---	---	---
27	---	---	---	7.6	7.4	7.5	7.1	7.0	7.0	---	---	---
28	---	---	---	7.8	7.4	7.6	7.0	6.9	7.0	---	---	---
29	---	---	---	7.5	7.4	7.5	7.0	6.9	6.9	---	---	---
30	---	---	---	7.5	7.4	7.5	6.9	6.8	6.9	---	---	---
31	---	---	---	7.4	7.2	7.4	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	7.5	6.8	7.3	---	---	---

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	7.6	7.6	7.6	7.7	7.6	7.6	7.7	7.5	7.6
2	7.6	7.3	7.4	7.7	7.6	7.6	7.7	7.6	7.6	7.7	7.6	7.6
3	7.6	7.3	7.4	7.7	7.6	7.6	7.7	7.6	7.6	7.7	7.6	7.6
4	7.7	7.4	7.5	7.7	7.5	7.6	7.7	7.6	7.6	7.7	7.5	7.6
5	7.7	7.4	7.5	7.7	7.5	7.6	7.8	7.3	7.5	7.7	7.5	7.6
6	7.7	7.4	7.5	7.6	7.4	7.5	7.6	7.3	7.5	7.7	7.5	7.6
7	7.7	7.4	7.5	7.6	7.5	7.5	7.6	7.5	7.5	7.7	7.5	7.6
8	7.7	7.5	7.6	7.6	7.5	7.6	7.6	7.5	7.5	7.7	7.5	7.6
9	7.7	7.5	7.6	7.7	7.5	7.6	7.6	7.5	7.5	7.8	7.5	7.7
10	7.7	7.5	7.6	7.8	7.6	7.6	7.6	7.5	7.5	7.6	7.5	7.5
11	7.8	7.5	7.6	7.6	7.3	7.3	7.6	7.5	7.5	7.7	7.5	7.6
12	7.7	7.5	7.6	7.7	7.3	7.4	7.6	7.5	7.5	7.6	7.5	7.5
13	8.0	7.4	7.6	7.5	7.3	7.4	7.6	7.5	7.5	7.6	7.5	7.5
14	8.0	7.6	7.7	7.6	7.4	7.5	7.6	7.4	7.5	7.6	7.5	7.5
15	8.0	7.4	7.6	7.7	7.6	7.6	7.6	7.5	7.5	7.7	7.5	7.6
16	7.5	7.5	7.5	7.7	7.6	7.6	7.6	7.5	7.5	7.7	7.6	7.6
17	7.5	7.4	7.4	7.7	7.6	7.6	7.7	7.5	7.6	7.8	7.6	7.7
18	7.5	7.4	7.5	7.7	7.6	7.6	7.7	7.5	7.6	7.7	7.6	7.6
19	7.5	7.4	7.4	7.7	7.6	7.6	7.7	7.5	7.6	7.8	7.6	7.7
20	7.6	7.4	7.5	7.6	7.5	7.6	7.7	7.5	7.6	7.8	7.6	7.7
21	7.5	7.4	7.4	7.6	7.6	7.6	7.7	7.5	7.6	7.8	7.6	7.7
22	7.5	7.4	7.4	7.7	7.6	7.6	7.6	7.5	7.5	7.8	7.5	7.6
23	7.5	7.4	7.4	7.7	7.6	7.6	7.7	7.2	7.5	7.5	7.4	7.5
24	7.5	7.5	7.5	7.7	7.6	7.6	7.7	7.4	7.6	7.6	7.4	7.5
25	7.6	7.4	7.5	7.7	7.6	7.7	7.5	7.4	7.4	7.5	7.4	7.5
26	7.5	7.3	7.4	7.7	7.6	7.7	7.5	7.4	7.4	7.6	7.4	7.5
27	7.5	7.4	7.4	7.7	7.5	7.6	7.5	7.3	7.4	7.6	7.4	7.5
28	7.6	7.5	7.5	7.7	7.5	7.6	7.5	7.4	7.4	7.6	7.4	7.4
29	7.6	7.6	7.6	7.7	7.5	7.6	7.6	7.4	7.4	7.5	7.3	7.4
30	7.6	7.6	7.6	7.7	7.6	7.6	7.6	7.4	7.5	7.6	7.3	7.4
31	---	---	---	7.7	7.6	7.6	7.7	7.5	7.5	---	---	---
MONTH	---	---	---	7.8	7.3	7.6	7.8	7.2	7.5	7.8	7.3	7.6

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	27.4	25.9	26.6	---	---	---	21.2	20.7	20.9	17.6	16.5	17.0
2	27.5	26.4	26.8	---	---	---	21.9	20.8	21.3	17.6	15.4	16.4
3	27.9	26.4	27.0	---	---	---	22.0	21.4	21.7	15.4	13.1	14.1
4	28.2	26.7	27.3	---	---	---	22.7	21.9	22.4	13.1	11.9	12.5
5	27.7	26.9	27.2	---	---	---	---	---	---	12.3	10.7	11.7
6	27.1	19.2	21.5	---	---	---	---	---	---	14.0	11.7	12.8
7	20.4	18.9	19.6	---	---	---	---	---	---	15.4	13.5	14.4
8	21.3	19.4	20.2	---	---	---	19.3	18.2	18.8	17.1	15.1	16.0
9	21.5	19.7	20.6	---	---	---	18.2	17.2	17.5	16.5	14.4	15.2
10	21.8	20.0	20.9	20.9	19.9	20.4	17.2	16.1	16.6	14.4	12.6	13.5
11	22.2	20.4	21.3	19.9	18.8	19.3	16.1	14.9	15.5	14.4	12.4	13.4
12	23.5	21.5	22.3	19.4	18.8	19.0	15.5	14.5	15.0	16.0	13.8	15.0
13	24.0	22.5	23.1	18.8	18.6	18.7	15.6	14.1	14.9	17.1	15.3	16.1
14	23.8	22.7	23.2	18.6	16.4	17.2	15.6	14.3	15.0	16.5	15.0	15.7
15	23.3	22.1	22.8	19.0	17.2	18.2	15.6	14.3	15.0	15.2	13.4	14.5
16	24.3	23.0	23.6	19.0	17.9	18.5	15.6	14.1	14.9	15.5	13.3	14.5
17	24.2	23.2	24.0	19.3	18.4	18.9	15.8	14.7	15.2	16.5	14.5	15.6
18	24.0	22.6	22.9	20.8	19.2	19.9	16.1	14.9	15.5	16.5	14.9	15.8
19	---	---	---	21.8	20.8	21.2	16.7	15.0	15.9	17.1	15.2	16.1
20	---	---	---	21.8	20.7	21.4	17.4	16.1	16.7	18.1	16.3	17.1
21	---	---	---	20.7	19.7	20.1	19.2	17.4	18.3	19.4	17.4	18.3
22	---	---	---	20.0	19.0	19.6	18.4	14.3	15.9	19.0	17.2	18.2
23	---	---	---	20.5	19.7	20.1	14.3	12.3	12.9	17.2	15.7	16.6
24	---	---	---	21.0	20.0	20.6	12.3	11.6	11.8	16.8	14.8	16.0
25	---	---	---	21.3	20.6	21.0	11.8	11.0	11.4	17.4	15.0	16.3
26	---	---	---	21.6	20.7	21.2	12.1	10.3	11.3	18.5	16.6	17.5
27	---	---	---	22.2	21.3	21.8	13.4	11.1	12.2	18.9	17.0	18.0
28	---	---	---	21.9	21.5	21.7	14.4	12.9	13.7	19.8	18.4	19.0
29	---	---	---	22.5	21.7	22.1	14.7	13.2	14.1	20.5	19.2	19.8
30	---	---	---	---	---	---	15.3	13.9	14.6	19.2	17.3	18.1
31	---	---	---	---	---	---	16.5	15.0	15.7	17.7	15.9	16.9
MONTH	---	---	---	---	---	---	---	---	---	20.5	10.7	15.9

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	17.4	15.9	16.8	20.7	18.5	19.5	20.4	19.4	19.8	24.2	22.8	23.5
2	18.2	16.8	17.5	21.1	19.3	20.3	21.5	20.4	20.9	22.8	22.4	22.6
3	18.7	17.2	17.9	20.7	18.6	19.5	23.5	21.5	22.4	23.5	22.4	22.9
4	18.7	17.3	18.1	---	---	---	22.9	21.7	22.2	25.5	23.3	24.2
5	19.7	18.4	19.0	20.1	18.9	19.4	23.6	21.7	22.6	25.7	23.9	24.8
6	21.1	19.7	20.3	22.0	19.7	20.7	22.6	20.7	21.7	25.1	23.3	24.2
7	22.0	20.3	21.2	21.3	19.3	20.0	23.0	21.5	22.2	24.5	22.7	23.6
8	21.6	20.7	21.1	21.7	19.4	20.4	24.3	22.3	23.2	24.5	22.8	23.6
9	22.5	20.9	21.7	21.0	19.2	20.3	25.2	23.4	24.2	24.9	24.1	24.4
10	22.8	21.4	22.1	21.1	20.3	20.7	25.9	24.2	24.9	24.5	22.2	23.2
11	22.5	19.5	21.4	22.1	20.8	21.4	25.0	23.4	24.3	---	---	---
12	19.5	17.0	18.0	22.4	21.7	22.0	24.5	23.5	23.9	---	---	---
13	17.3	15.0	16.1	22.0	19.3	20.7	24.2	23.2	23.6	---	---	---
14	16.2	14.3	15.5	19.3	17.0	18.2	24.4	22.8	23.7	---	---	---
15	17.3	14.8	16.1	18.3	16.2	17.5	23.8	21.6	22.6	---	---	---
16	17.6	16.5	17.0	18.8	16.5	17.8	21.7	19.7	20.6	---	---	---
17	18.5	16.7	17.7	19.5	18.0	18.7	20.2	18.0	19.1	---	---	---
18	18.6	16.5	17.7	19.9	19.5	19.7	20.4	18.4	19.3	---	---	---
19	18.4	16.7	17.6	19.9	19.2	19.5	21.9	19.5	20.6	---	---	---
20	19.2	17.5	18.2	20.6	18.8	19.6	23.4	21.1	22.1	---	---	---
21	18.5	16.9	17.8	20.7	18.4	19.7	22.9	22.4	22.7	---	---	---
22	17.8	16.1	17.0	20.7	18.5	19.8	24.5	22.5	23.2	---	---	---
23	18.3	16.3	17.3	21.5	19.9	20.7	25.4	23.8	24.5	---	---	---
24	18.9	17.2	18.0	21.7	21.1	21.4	25.3	24.7	25.0	---	---	---
25	20.0	18.4	19.1	21.5	20.5	21.1	24.7	23.2	24.0	---	---	---
26	---	---	---	20.5	19.6	20.0	23.9	22.2	23.3	---	---	---
27	---	---	---	19.9	16.2	19.3	25.1	22.5	23.6	---	---	---
28	---	---	---	18.4	15.8	16.9	25.8	23.6	24.6	---	---	---
29	---	---	---	19.7	17.9	18.8	25.2	24.3	24.9	---	---	---
30	---	---	---	20.3	18.9	19.6	25.0	24.2	24.6	---	---	---
31	---	---	---	19.9	19.0	19.4	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	25.9	18.0	22.8	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	29.6	27.6	28.5	29.7	28.4	28.9	28.8	27.2	27.9
2	29.4	27.5	28.2	29.3	27.5	28.4	29.8	27.8	28.6	29.3	27.2	28.1
3	28.7	27.3	27.8	28.7	27.4	28.1	29.3	27.9	28.5	29.5	27.4	28.2
4	28.7	27.0	27.6	28.2	26.9	27.6	29.4	27.6	28.3	29.2	27.7	28.3
5	29.3	26.9	27.8	28.2	26.8	27.4	29.5	27.5	28.4	29.0	27.5	28.1
6	29.2	27.2	27.9	28.9	26.8	27.7	30.0	27.9	28.9	28.3	27.0	27.5
7	29.0	27.0	27.8	29.0	27.3	28.1	30.0	28.1	29.0	28.0	26.2	26.9
8	29.2	27.0	27.9	29.3	27.1	28.1	30.2	28.3	29.1	27.9	26.4	27.0
9	29.2	27.1	27.9	29.6	27.3	28.4	30.4	28.3	29.2	28.1	26.0	27.0
10	29.2	27.1	27.9	29.2	27.1	28.3	30.1	28.2	29.2	27.9	26.8	27.4
11	29.9	27.3	28.2	28.5	27.1	27.6	30.3	28.4	29.3	28.6	26.6	27.4
12	30.0	27.7	28.5	28.5	26.9	27.7	30.5	28.4	29.3	28.6	26.8	27.5
13	29.1	27.1	28.0	28.3	26.8	27.6	30.3	28.5	29.3	27.5	26.6	27.0
14	28.9	25.5	27.7	29.5	27.3	28.3	30.3	28.2	29.1	27.4	25.6	26.4
15	26.9	23.7	24.9	29.4	27.5	28.4	29.4	27.6	28.5	27.7	25.8	26.6
16	26.1	24.4	25.0	29.1	27.1	28.1	29.5	27.6	28.4	27.3	25.1	26.1
17	26.9	25.8	26.3	28.3	26.9	27.5	29.3	27.6	28.3	26.6	24.3	25.3
18	27.3	25.6	26.4	27.8	26.3	27.0	29.8	27.5	28.5	26.4	24.5	25.3
19	27.3	26.3	26.8	28.2	26.4	27.2	29.7	27.7	28.6	26.8	24.6	25.4
20	27.5	25.0	26.3	27.6	26.6	27.1	29.6	27.5	28.4	26.8	24.5	25.5
21	25.7	24.7	25.3	27.3	26.3	26.8	29.7	27.5	28.4	26.4	24.9	25.5
22	26.5	24.6	25.4	28.4	26.2	27.2	28.6	27.6	28.1	25.5	23.6	24.5
23	28.0	25.5	26.5	29.4	27.0	28.1	27.8	26.8	27.2	24.0	21.7	22.8
24	28.0	27.0	27.6	28.8	26.9	28.0	27.5	26.3	26.9	24.0	21.6	22.6
25	29.2	27.3	27.9	28.6	26.9	27.8	28.8	26.7	27.6	24.1	22.7	23.3
26	28.8	27.2	28.0	29.1	27.4	28.1	29.3	27.3	28.1	25.5	23.4	24.2
27	28.7	27.9	28.3	29.0	27.6	28.2	29.3	27.5	28.3	26.5	24.4	25.2
28	29.8	27.9	28.7	29.2	27.5	28.3	30.1	27.7	28.7	27.0	25.2	25.9
29	29.1	28.2	28.5	29.5	27.6	28.5	29.5	27.7	28.4	26.3	23.7	24.9
30	29.8	27.4	28.5	29.6	27.8	28.7	29.4	27.3	28.2	23.7	21.8	22.7
31	---	---	---	30.0	28.2	29.0	28.7	27.2	27.9	---	---	---
MONTH	---	---	---	30.0	26.2	27.9	30.5	26.3	28.5	29.5	21.6	26.0

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	5.9	4.1	4.8	---	---	---	6.9	6.1	6.1	9.6	6.9	8.1
2	5.8	4.1	4.7	---	---	---	6.9	5.6	6.2	11.5	6.9	8.7
3	6.0	4.0	4.7	---	---	---	6.2	5.5	5.9	12.0	7.5	9.7
4	6.0	3.9	4.7	---	---	---	6.2	5.4	5.8	13.8	8.5	10.8
5	5.5	3.9	4.4	---	---	---	---	---	---	13.9	9.0	11.2
6	8.5	4.1	7.0	---	---	---	---	---	---	13.7	9.0	11.0
7	7.1	6.6	6.9	---	---	---	---	---	---	12.0	8.3	10.1
8	6.8	6.0	6.4	---	---	---	7.2	6.0	6.4	11.6	7.5	9.4
9	6.6	5.8	6.0	---	---	---	7.3	6.2	6.8	12.6	7.3	9.8
10	6.3	5.4	5.7	7.3	6.9	7.1	7.2	6.5	6.9	13.8	7.7	10.5
11	6.2	5.0	5.5	7.6	7.0	7.2	7.3	6.4	6.9	13.8	8.4	11.1
12	6.3	4.6	5.4	7.1	6.9	7.0	8.4	7.2	7.8	13.6	8.2	10.9
13	5.6	4.3	4.9	7.4	7.0	7.1	8.4	7.4	7.8	12.8	7.9	10.4
14	5.6	4.2	4.9	9.1	7.1	8.1	8.8	7.7	8.1	13.2	8.0	10.6
15	6.3	4.8	5.4	7.7	7.2	7.5	9.0	7.6	8.3	12.9	8.4	10.7
16	6.3	4.6	5.3	7.7	7.2	7.5	9.2	7.9	8.4	12.3	8.1	10.3
17	---	---	---	7.4	6.9	7.2	9.2	7.8	8.4	12.0	7.7	9.9
18	---	---	---	7.3	6.7	7.0	8.5	7.6	8.0	10.7	7.0	9.1
19	---	---	---	7.1	6.5	6.7	9.2	7.5	8.1	10.7	7.2	9.1
20	---	---	---	7.3	6.4	6.7	8.5	7.2	7.7	9.8	6.9	8.5
21	---	---	---	7.7	6.7	7.1	8.2	6.9	7.4	10.0	6.3	8.3
22	---	---	---	7.8	6.8	7.2	8.1	6.8	7.5	9.2	6.0	7.8
23	---	---	---	7.3	6.7	7.0	9.4	7.7	8.6	10.1	6.6	8.4
24	---	---	---	7.5	6.5	6.9	10.6	8.4	9.5	10.8	7.2	9.0
25	---	---	---	7.1	6.1	6.6	10.9	9.0	9.9	10.6	7.1	9.0
26	---	---	---	7.0	5.9	6.3	11.5	9.2	10.1	10.2	6.7	8.6
27	---	---	---	6.5	5.6	6.0	11.4	9.0	9.9	10.1	6.4	8.4
28	---	---	---	6.1	5.4	5.7	11.5	8.3	9.6	8.9	6.0	7.4
29	---	---	---	6.2	5.2	5.7	11.6	8.0	9.3	8.1	5.5	6.9
30	---	---	---	---	---	---	12.0	7.9	9.5	9.6	5.9	7.7
31	---	---	---	---	---	---	10.6	7.5	8.9	10.1	6.5	8.4
MONTH	---	---	---	---	---	---	---	---	---	13.9	5.5	9.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.3	6.7	8.6	10.7	7.0	8.6	5.5	3.8	4.7	4.8	3.9	4.5
2	10.7	6.6	8.7	10.6	6.2	8.5	5.7	3.5	4.9	5.1	4.2	4.6
3	10.1	6.5	8.5	10.9	6.3	8.8	6.9	3.8	5.3	5.9	4.7	5.3
4	9.8	6.5	8.2	9.9	6.7	7.6	6.7	4.5	5.4	6.3	4.2	5.2
5	8.8	6.1	7.6	10.0	7.2	8.3	7.8	4.6	5.9	6.6	4.3	5.3
6	8.7	5.6	7.2	10.2	6.3	8.4	8.3	5.3	6.6	6.8	4.3	5.5
7	9.8	5.5	7.6	8.8	6.1	6.9	8.6	4.7	6.8	7.3	4.7	5.8
8	8.4	5.6	6.9	9.2	5.8	7.5	9.0	5.6	7.0	7.9	4.9	6.2
9	8.9	5.3	7.0	10.0	6.2	8.1	9.0	5.3	6.9	6.6	4.9	5.7
10	8.6	5.2	7.0	8.7	5.9	7.2	8.8	5.1	6.7	7.8	5.2	6.1
11	7.3	5.1	6.2	8.4	5.6	7.0	8.7	5.3	6.6	---	---	---
12	10.0	6.2	8.0	7.5	5.2	6.4	6.6	5.2	5.8	---	---	---
13	11.2	7.4	9.3	7.4	4.8	6.5	7.0	4.7	5.7	---	---	---
14	11.8	7.8	9.9	8.8	4.2	6.3	7.7	4.5	6.0	---	---	---
15	12.6	7.9	10.2	10.2	6.1	8.2	8.6	4.7	6.3	---	---	---
16	10.8	7.5	8.8	10.6	6.6	8.6	8.2	5.7	6.9	---	---	---
17	11.7	7.2	9.4	9.1	6.5	7.9	9.3	6.4	7.6	---	---	---
18	12.0	7.3	9.7	7.9	5.5	6.1	9.4	6.7	7.8	---	---	---
19	11.7	7.0	9.5	8.0	5.0	6.5	9.5	6.5	7.8	---	---	---
20	10.9	6.9	9.1	8.5	6.2	7.1	9.2	6.1	7.4	---	---	---
21	12.1	7.2	9.6	8.8	5.1	6.9	7.3	5.4	6.2	---	---	---
22	12.4	7.5	10.0	8.9	4.8	7.0	7.7	5.0	6.0	---	---	---
23	12.5	7.6	10.3	8.2	5.2	6.8	7.6	4.8	6.0	---	---	---
24	11.5	7.3	9.7	6.9	4.8	5.9	6.1	4.5	5.3	---	---	---
25	10.6	6.6	8.8	6.7	4.4	5.5	6.0	4.4	5.1	---	---	---
26	---	---	---	7.0	4.7	5.8	6.7	4.4	5.3	---	---	---
27	---	---	---	10.1	4.3	5.4	6.2	4.9	5.5	---	---	---
28	---	---	---	9.5	6.9	8.7	5.7	3.6	4.8	---	---	---
29	---	---	---	7.5	5.9	6.9	5.0	3.8	4.4	---	---	---
30	---	---	---	6.7	5.2	6.0	5.1	3.7	4.4	---	---	---
31	---	---	---	5.8	4.1	5.3	---	---	---	---	---	---
MONTH	---	---	---	10.9	4.1	7.1	9.5	3.5	6.0	---	---	---

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	7.4	6.1	6.7	7.9	5.5	6.7	9.0	5.9	7.1
2	12.6	6.1	8.8	7.5	6.2	6.8	8.1	5.5	6.7	9.7	6.1	7.4
3	11.5	5.9	8.4	7.7	6.3	6.8	7.8	5.8	6.7	10.1	6.4	7.4
4	12.1	6.2	8.6	7.4	6.3	6.8	8.2	5.9	6.8	9.2	6.1	7.0
5	12.6	5.9	8.8	7.7	6.7	7.0	---	---	---	8.8	5.8	6.7
6	12.1	6.2	8.5	7.0	6.1	6.5	---	---	---	8.6	5.5	6.3
7	11.7	6.4	8.4	6.9	5.7	6.3	8.6	5.1	6.7	8.9	5.5	6.6
8	11.9	6.4	8.5	7.5	6.1	6.7	8.6	5.3	6.7	8.0	5.9	6.8
9	11.2	6.2	8.4	7.8	6.2	6.9	8.5	5.1	6.5	8.2	5.8	6.7
10	11.4	6.7	8.4	7.6	6.0	6.9	8.2	5.1	6.4	7.1	4.6	5.7
11	12.0	6.5	8.5	7.4	5.9	6.5	8.2	5.2	6.4	8.6	5.0	6.2
12	11.9	6.7	8.4	7.4	6.2	6.6	8.4	5.2	6.5	8.9	5.3	6.4
13	16.7	5.8	9.6	7.4	5.8	6.4	8.2	5.2	6.4	6.9	5.2	5.8
14	14.0	6.7	10.5	7.6	6.3	6.8	8.1	4.3	6.0	8.6	5.0	6.4
15	10.0	5.5	8.1	8.0	6.1	6.9	8.5	4.8	6.4	9.6	6.2	7.3
16	9.8	7.5	8.6	8.0	6.2	6.9	8.8	5.4	6.9	10.1	6.2	7.5
17	9.1	7.5	7.9	7.9	6.2	6.8	8.9	5.5	6.9	10.5	6.5	7.9
18	7.6	7.0	7.4	8.2	6.3	7.0	9.1	5.9	7.0	10.5	7.0	8.1
19	7.3	6.6	7.0	8.3	6.4	7.1	9.0	5.5	6.7	11.1	6.8	8.2
20	9.4	7.0	8.3	7.4	5.9	6.6	9.1	5.6	6.7	11.1	7.3	8.8
21	9.5	8.3	8.8	7.7	6.3	6.8	9.2	5.6	6.9	9.0	7.0	8.2
22	9.3	8.0	8.8	8.3	6.0	7.1	---	---	---	9.2	6.7	7.9
23	8.9	8.3	8.8	8.5	5.9	7.0	---	---	---	9.0	5.2	6.9
24	8.5	8.0	8.3	8.6	5.7	7.0	---	---	---	9.0	6.3	7.3
25	8.2	7.4	7.9	9.0	5.8	7.2	---	---	---	8.0	6.2	6.8
26	8.2	6.6	7.2	9.1	5.7	7.3	---	---	---	9.2	5.3	6.8
27	7.3	6.8	7.1	8.8	5.7	7.1	---	---	---	9.2	5.6	7.0
28	7.8	6.9	7.3	8.9	5.6	7.1	---	---	---	6.9	5.5	6.2
29	7.7	6.9	7.3	8.8	5.6	7.2	---	---	---	7.4	4.7	5.9
30	8.0	7.2	7.6	8.8	5.5	7.1	---	---	---	8.5	4.7	6.1
31	---	---	---	8.6	5.4	6.9	8.8	5.6	6.6	---	---	---
MONTH	---	---	---	9.1	5.4	6.9	---	---	---	11.1	4.6	7.0

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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 mi^2, of which 634 mi^2 is above dam forming Medina Lake.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1929 to Dec 1930, Jul 1939 to current year. Oct 1929 to Dec 1930, records below about 50 ft^3/s in connection with seepage investigation (published as "at Losoya"). Published as "near San Antonio" Jul 1939 to Sep 1970.

REVISED RECORDS.--WSP 1562: 1957. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 439.0 ft above sea level (levels by U.S. Army Corps of Engineers). Oct 1929 to Dec 1930, nonrecording gage at Losoya 1.5 mi downstream at different datum. Jul 27, 1939 to Sep 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 except 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 by Medina Lake (station 08179500, capacity 254,000 acre-ft) 60 mi upstream and by diversion dam reservoir, capacity 4,500 acre-ft. Streamflow is lost into the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. Several small diversions below diversion dam reservoir. Records furnished by the city of San Antonio show that during the current year, wastewater effluent in the amount of 5,200 acre-ft from Mitchell Lake and 40,920 acre-ft from the Leon Creek plant 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, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	584	563	337	216	182	210	178	153	160	107	115
2	118	766	576	336	208	180	206	179	149	146	108	112
3	117	668	548	326	206	175	222	190	147	147	104	109
4	120	673	527	320	207	171	226	186	145	145	111	112
5	125	695	e500	310	206	175	224	181	141	178	128	109
6	273	696	e485	299	205	177	223	175	141	166	130	105
7	219	721	e472	296	204	171	221	184	141	157	122	115
8	166	726	464	296	205	171	220	190	149	156	120	131
9	140	719	461	292	207	181	220	183	148	150	121	130
10	131	707	449	295	205	189	216	210	144	149	118	125
11	123	690	442	294	206	179	199	204	136	205	118	113
12	123	671	444	286	196	182	201	193	120	196	113	113
13	120	654	450	281	194	207	194	191	119	143	109	112
14	116	851	449	278	188	200	195	184	126	146	111	97
15	116	844	442	276	186	183	196	190	277	134	112	106
16	120	794	436	266	187	177	187	196	465	129	115	97
17	5400	774	426	266	189	175	181	196	341	130	105	95
18	31300	757	425	262	187	175	185	252	219	127	106	95
19	14700	748	414	264	185	186	189	257	178	131	103	110
20	4680	735	409	256	182	192	187	215	228	125	104	113
21	1690	725	404	253	180	183	189	190	367	132	113	109
22	1150	713	408	241	185	174	188	176	602	131	114	107
23	922	689	406	236	180	171	185	172	365	127	119	105
24	780	671	389	236	183	170	181	176	256	120	134	108
25	682	650	374	234	185	169	195	172	203	116	129	112
26	616	634	364	229	186	170	270	166	288	117	123	111
27	559	619	359	223	185	174	303	166	240	113	119	114
28	516	608	351	226	183	407	214	169	205	114	114	108
29	484	598	351	222	---	335	195	161	192	110	109	108
30	475	587	347	218	---	250	186	164	181	114	122	101
31	470	---	344	219	---	220	---	154	---	108	120	---
TOTAL	66667	20967	13479	8373	5436	6051	6208	5800	6566	4322	3581	3297
MEAN	2151	699	435	270	194	195	207	187	219	139	116	110
MAX	31300	851	576	337	216	407	303	257	602	205	134	131
MIN	116	584	344	218	180	169	181	154	119	108	103	95
AC-FT	132200	41590	26740	16610	10780	12000	12310	11500	13020	8570	7100	6540

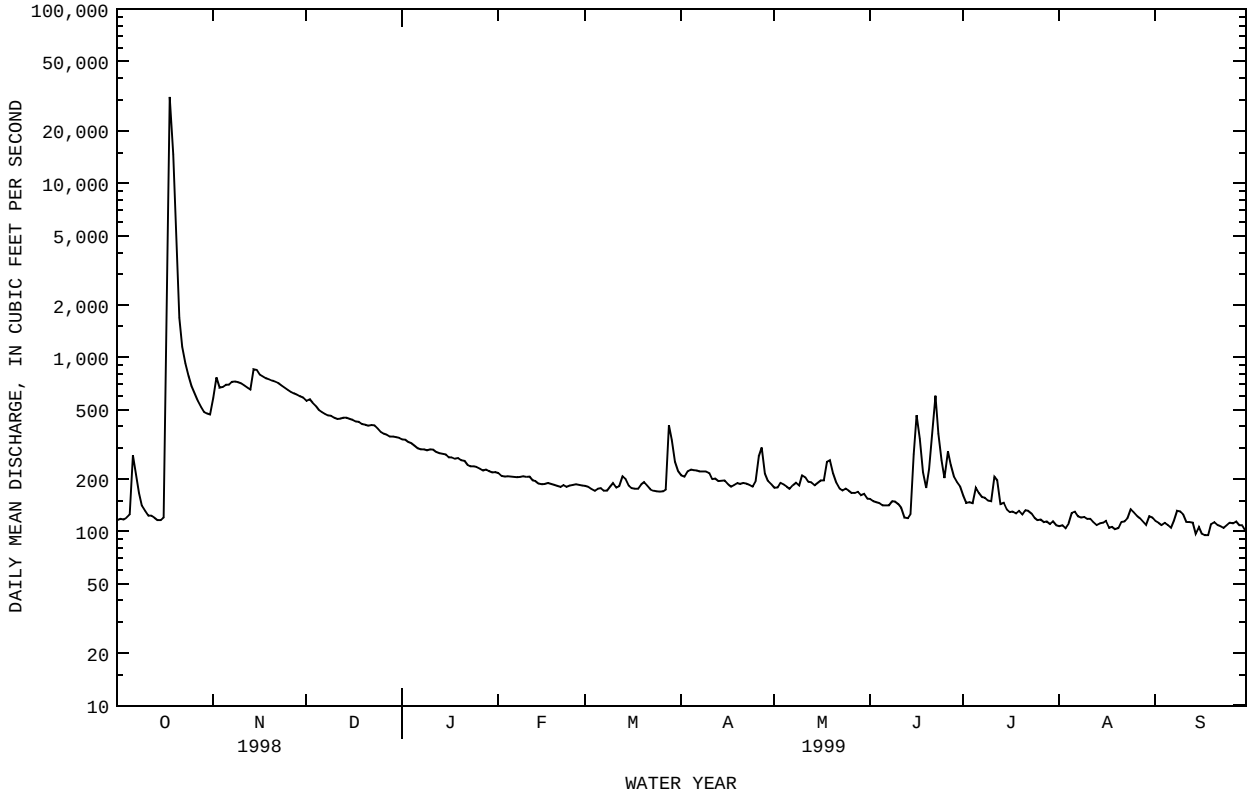
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1999, BY WATER YEAR (WY)

MEAN	229	160	154	167	223	181	190	264	404	206	151	182
MAX	2151	835	961	979	2923	2558	1621	2018	7006	3261	1175	1427
(WY)	1999	1977	1992	1968	1992	1992	1992	1992	1987	1973	1978	1973
MIN	7.60	8.50	12.7	5.58	12.7	9.77	6.63	8.71	6.52	6.13	6.40	8.24
(WY)	1956	1956	1955	1957	1953	1956	1956	1953	1956	1954	1952	1954

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1939 - 1999	
ANNUAL TOTAL	160859		150747			
ANNUAL MEAN	441		413		209	
HIGHEST ANNUAL MEAN					1218	1992
LOWEST ANNUAL MEAN					14.3	1956
HIGHEST DAILY MEAN	31300	Oct 18	31300	Oct 18	31300	Oct 18 1998
LOWEST DAILY MEAN	76	Aug 2	95	Sep 17	3.3	Apr 18 1956
ANNUAL SEVEN-DAY MINIMUM	78	Jul 30	102	Sep 13	4.0	Jan 21 1957
INSTANTANEOUS PEAK FLOW			42400	Oct 18	42400	Oct 18 1998
INSTANTANEOUS PEAK STAGE			49.47	Oct 18	49.47	Oct 18 1998
ANNUAL RUNOFF (AC-FT)	319100		299000		151600	
10 PERCENT EXCEEDS	672		611		366	
50 PERCENT EXCEEDS	181		188		96	
90 PERCENT EXCEEDS	118		113		18	

e Estimated



08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jun 1965 to current year.
BIOCHEMICAL DATA: Jun 1965 to Mar 1998.
PESTICIDE DATA: Apr 1971 to Sep 1981; Dec 1992 to Mar 1998.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jan 1987 to current year.
PH: Jan 1987 to current year.
WATER TEMPERATURE: Jan 1987 to current year.
DISSOLVED OXYGEN: Jan 1987 to current year.

INSTRUMENTATION.--Water-quality monitor since Jan 1987.

REMARKS.--Interruptions in the record were caused by malfunction of the instrument. 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. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,190 microsiemens, Oct 16, 1996; minimum, 30 microsiemens, Jul 16, 1990.
PH: Maximum, 8.8 units, Dec 4, 5, 1988, Mar 22, 1989; minimum, 7.0 units, Apr 1-3, 1989, Mar 5, 6, 1990.
WATER TEMPERATURE: Maximum, 32.0°C, Jun 11, 1989; minimum, 9.0°C, Jan 11, 1988, Dec 23, 1989.
DISSOLVED OXYGEN: Maximum, 14.3 mg/L, Feb 18, 1997; minimum, 1.8 mg/L, Oct 17, Nov 8, 1987.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,090 microsiemens, Jun 15; minimum, 141 microsiemens, Oct 17.
PH: Maximum, 8.1 units, Oct 17, Feb 21-23, Sep 22-24, 30; minimum, 7.5 units, Oct 4-9, 11, 21, 27.
WATER TEMPERATURE: Maximum, 30.9°C, Aug 12; minimum, 11.4°C, Dec 26.
DISSOLVED OXYGEN: Maximum, 10.4 mg/L, Jan 24; minimum, 5.0 mg/L, Jun 15, Jul 23.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	909	873	892	783	647	748	669	596	636	782	750	765
2	920	872	895	651	558	609	666	644	654	774	750	764
3	935	888	916	658	620	637	670	647	656	779	750	767
4	924	857	892	620	573	595	---	---	---	788	752	773
5	925	872	892	592	573	582	---	---	---	794	764	783
6	930	522	760	573	559	564	---	---	---	815	763	794
7	753	650	703	579	560	568	---	---	---	823	789	808
8	820	744	785	577	555	566	688	661	674	836	802	820
9	868	815	843	584	556	572	690	655	675	844	799	820
10	895	827	865	589	570	583	706	669	689	839	805	820
11	886	822	856	594	570	586	713	693	705	825	785	808
12	887	832	864	600	570	589	713	689	702	843	807	826
13	921	863	890	614	584	600	708	664	686	838	801	823
14	910	861	883	690	547	627	692	655	677	864	820	844
15	923	866	899	648	564	598	698	663	683	871	825	849
16	936	892	913	580	559	569	703	670	690	832	800	817
17	928	141	519	582	564	572	719	673	701	835	806	822
18	208	158	183	576	558	567	722	690	711	852	816	833
19	323	208	266	576	559	571	722	686	707	859	816	836
20	506	323	400	586	552	578	721	686	708	867	832	851
21	674	506	599	585	560	574	723	669	709	873	823	855
22	733	673	704	592	556	575	729	703	718	874	834	859
23	766	733	751	599	572	588	727	694	715	872	839	860
24	782	762	773	604	582	597	739	700	719	881	839	858
25	795	782	787	617	591	606	744	712	729	876	834	853
26	807	793	799	627	595	612	749	716	732	885	843	863
27	817	807	812	624	596	611	758	729	746	890	847	868
28	820	810	814	633	606	621	771	726	754	882	844	869
29	---	---	---	641	611	627	771	739	759	892	851	873
30	796	786	790	644	614	633	780	746	766	889	853	876
31	789	762	773	---	---	---	779	747	767	889	848	869
MONTH	---	---	---	783	547	598	---	---	---	892	750	830

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	882	840	864	934	887	910	891	868	883	897	863	878
2	902	864	887	937	903	923	915	884	899	913	857	889
3	908	876	895	939	900	921	887	856	871	906	881	894
4	919	881	901	947	910	927	892	849	868	926	899	911
5	915	876	897	953	919	934	871	832	852	926	900	913
6	897	871	888	937	906	924	868	831	849	930	902	915
7	903	868	887	942	895	918	864	829	849	927	884	909
8	903	864	885	939	902	919	871	828	849	898	862	885
9	917	880	900	932	898	914	861	819	839	904	858	883
10	921	889	905	940	902	923	857	823	841	939	853	890
11	922	885	909	970	930	954	862	823	847	918	832	863
12	944	899	923	978	923	958	885	839	862	870	846	861
13	931	895	916	979	911	946	900	857	882	893	870	882
14	939	909	926	982	916	955	903	869	889	895	868	880
15	939	902	924	939	906	920	958	897	939	891	851	871
16	944	906	923	936	907	923	929	868	905	872	814	843
17	968	922	951	949	915	934	909	877	897	852	804	827
18	966	930	948	944	912	930	908	870	893	894	780	836
19	958	921	941	952	920	934	921	879	900	780	741	762
20	953	918	938	928	908	918	921	882	903	809	768	796
21	947	906	927	908	865	886	943	895	915	845	809	829
22	935	907	922	899	863	879	968	899	932	865	832	851
23	963	930	951	911	874	898	931	891	910	872	835	856
24	995	962	975	925	891	909	926	878	904	885	839	861
25	986	951	969	927	894	907	959	880	907	900	852	886
26	971	934	955	921	893	908	972	820	887	916	876	899
27	965	937	952	917	864	899	887	755	811	910	880	895
28	955	912	935	988	665	814	884	828	849	906	877	892
29	---	---	---	806	755	788	876	840	860	910	874	893
30	---	---	---	831	802	819	882	853	868	915	859	889
31	---	---	---	868	831	854	---	---	---	899	856	880
MONTH	995	840	921	988	665	908	972	755	879	939	741	872

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	913	868	888	830	768	801	886	825	863	992	925	966
2	933	874	905	823	783	807	898	825	863	991	913	965
3	917	876	896	845	803	821	895	824	864	992	912	966
4	926	883	903	865	797	831	---	---	---	1000	948	978
5	917	884	903	870	744	797	---	---	---	993	923	963
6	917	869	894	792	750	772	---	---	---	977	894	949
7	907	845	885	804	760	788	---	---	---	993	906	954
8	926	886	905	830	799	818	---	---	---	977	912	947
9	927	891	908	844	798	823	1010	975	958	972	918	946
10	911	874	894	828	787	811	1020	971	992	988	937	960
11	925	864	895	879	667	755	1040	967	1010	968	884	941
12	916	866	894	755	614	678	1040	978	1010	974	879	937
13	904	846	885	762	714	745	1030	967	996	969	892	932
14	904	852	883	804	738	775	1010	940	988	958	891	928
15	1090	493	821	817	767	798	1010	938	987	955	891	933
16	631	451	513	829	775	807	1030	963	995	963	889	939
17	706	631	659	773	716	750	1030	967	996	981	907	952
18	715	667	698	762	714	743	1040	946	1000	991	917	958
19	743	690	724	776	745	764	1030	944	993	984	902	945
20	776	616	720	798	741	773	1030	947	994	990	930	958
21	616	495	558	793	734	765	1030	989	1010	987	934	964
22	512	453	485	779	711	756	1020	955	990	1010	958	986
23	567	512	537	780	732	763	1000	942	972	1010	950	982
24	627	539	572	790	741	772	991	944	973	1020	961	989
25	716	627	666	797	736	774	998	944	977	1000	948	981
26	719	566	645	801	742	777	1000	946	973	1010	940	979
27	713	646	678	888	819	855	1000	919	972	998	921	957
28	739	684	712	893	824	861	966	919	946	1010	939	985
29	776	726	752	895	803	862	982	895	952	1030	971	995
30	793	742	771	880	823	859	1010	938	969	1010	962	989
31	---	---	---	877	809	854	1010	939	976	---	---	---
MONTH	1090	451	768	895	614	792	---	---	---	1030	879	961

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.7	7.6	7.7	7.7	7.7	7.7	7.8	7.7	7.7	7.9	7.8	7.8
2	7.7	7.6	7.6	7.7	7.6	7.7	7.8	7.7	7.7	7.9	7.8	7.8
3	7.7	7.6	7.6	7.7	7.7	7.7	7.8	7.7	7.7	7.9	7.8	7.9
4	7.7	7.5	7.6	7.7	7.7	7.7	---	---	---	7.9	7.8	7.9
5	7.6	7.5	7.5	7.7	7.7	7.7	---	---	---	7.9	7.8	7.9
6	7.6	7.5	7.5	7.8	7.7	7.8	---	---	---	7.9	7.8	7.9
7	7.6	7.5	7.6	7.8	7.8	7.8	---	---	---	7.9	7.8	7.9
8	7.6	7.5	7.6	7.8	7.7	7.8	7.8	7.7	7.7	7.9	7.8	7.9
9	7.6	7.5	7.6	7.8	7.7	7.7	7.8	7.8	7.8	7.9	7.8	7.9
10	7.7	7.6	7.6	7.8	7.7	7.7	7.8	7.8	7.8	8.0	7.8	7.9
11	7.7	7.5	7.6	7.8	7.7	7.8	7.8	7.8	7.8	7.9	7.8	7.9
12	7.8	7.6	7.7	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.9
13	7.7	7.6	7.6	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8
14	7.7	7.6	7.7	7.8	7.7	7.8	7.9	7.8	7.8	7.9	7.8	7.8
15	7.7	7.6	7.7	7.8	7.8	7.8	7.9	7.8	7.9	7.9	7.7	7.8
16	7.8	7.6	7.7	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.9
17	8.1	7.6	7.8	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.7	7.8
18	7.9	7.7	7.8	7.8	7.8	7.8	7.9	7.8	7.9	7.9	7.7	7.8
19	7.7	7.6	7.6	7.8	7.7	7.7	7.9	7.9	7.9	7.8	7.7	7.7
20	7.6	7.6	7.6	7.7	7.6	7.7	7.9	7.8	7.9	7.9	7.7	7.8
21	7.6	7.5	7.6	7.8	7.7	7.7	7.9	7.8	7.9	7.9	7.7	7.8
22	7.6	7.6	7.6	7.7	7.7	7.7	7.9	7.8	7.9	7.9	7.8	7.9
23	7.6	7.6	7.6	7.7	7.6	7.6	8.0	7.9	7.9	8.0	7.8	7.9
24	7.6	7.6	7.6	7.8	7.7	7.7	8.0	7.9	7.9	8.0	7.8	7.9
25	7.6	7.6	7.6	7.7	7.7	7.7	8.0	7.9	7.9	7.9	7.7	7.8
26	7.6	7.6	7.6	7.7	7.7	7.7	8.0	7.9	7.9	8.0	7.8	7.9
27	7.6	7.5	7.6	7.7	7.7	7.7	8.0	7.9	7.9	7.9	7.7	7.8
28	7.7	7.6	7.6	7.7	7.7	7.7	8.0	7.8	7.9	7.9	7.7	7.8
29	---	---	---	7.7	7.6	7.7	7.9	7.8	7.8	7.9	7.8	7.9
30	7.8	7.7	7.8	7.7	7.6	7.6	7.9	7.8	7.8	8.0	7.9	7.9
31	7.7	7.7	7.7	---	---	---	7.9	7.8	7.8	8.0	7.9	7.9
MONTH	---	---	---	7.8	7.6	7.7	---	---	---	8.0	7.7	7.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.0	7.8	7.9	7.8	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8
2	8.0	7.9	7.9	7.8	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8
3	8.0	7.9	7.9	7.8	7.7	7.7	7.7	7.7	7.7	7.8	7.7	7.8
4	7.9	7.9	7.9	7.8	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8
5	8.0	7.9	7.9	7.8	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8
6	7.9	7.8	7.9	7.8	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8
7	7.9	7.8	7.8	7.7	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8
8	7.9	7.8	7.8	7.8	7.6	7.7	7.7	7.7	7.7	7.9	7.8	7.8
9	7.9	7.8	7.8	7.8	7.7	7.8	7.7	7.7	7.7	7.8	7.8	7.8
10	7.9	7.8	7.8	7.8	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8
11	7.9	7.8	7.8	7.7	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8
12	7.9	7.9	7.9	7.7	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8
13	7.9	7.9	7.9	7.7	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8
14	8.0	7.9	7.9	7.7	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8
15	8.0	7.8	7.9	7.7	7.7	7.7	7.8	7.7	7.7	7.9	7.8	7.8
16	7.9	7.8	7.9	7.7	7.7	7.7	7.8	7.7	7.7	7.9	7.8	7.8
17	8.0	7.9	7.9	7.7	7.7	7.7	7.8	7.7	7.7	7.9	7.8	7.8
18	8.0	7.9	8.0	7.7	7.7	7.7	7.8	7.7	7.8	7.8	7.8	7.8
19	8.0	7.9	8.0	7.7	7.7	7.7	7.8	7.7	7.7	7.8	7.7	7.8
20	8.0	7.9	8.0	7.7	7.7	7.7	7.8	7.7	7.7	7.8	7.8	7.8
21	8.1	7.9	8.0	7.8	7.7	7.7	7.8	7.7	7.7	7.8	7.8	7.8
22	8.1	7.9	8.0	7.8	7.7	7.7	7.8	7.7	7.8	7.8	7.8	7.8
23	8.1	8.0	8.0	7.8	7.7	7.7	7.8	7.7	7.7	7.8	7.7	7.8
24	8.0	7.9	8.0	7.7	7.7	7.7	7.8	7.7	7.7	7.8	7.7	7.8
25	8.0	7.9	8.0	7.8	7.7	7.7	7.8	7.7	7.7	7.8	7.8	7.8
26	8.0	7.8	7.9	7.8	7.7	7.7	7.7	7.6	7.7	7.8	7.8	7.8
27	7.9	7.7	7.8	7.8	7.7	7.7	7.7	7.6	7.7	7.8	7.8	7.8
28	7.8	7.7	7.7	7.7	7.7	7.7	7.8	7.6	7.7	7.9	7.8	7.8
29	---	---	---	7.7	7.7	7.7	7.8	7.7	7.8	7.9	7.8	7.8
30	---	---	---	7.7	7.7	7.7	7.8	7.7	7.8	7.9	7.8	7.8
31	---	---	---	7.7	7.7	7.7	---	---	---	7.9	7.8	7.8
MONTH	8.1	7.7	7.9	7.8	7.6	7.7	7.8	7.6	7.7	7.9	7.7	7.8

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	8.0	7.8	7.9
2	7.9	7.8	7.8	7.9	7.8	7.9	7.9	7.7	7.8	8.0	7.8	7.9
3	7.9	7.8	7.8	7.9	7.8	7.9	8.0	7.9	7.9	8.0	7.8	7.9
4	7.9	7.8	7.8	7.9	7.8	7.9	---	---	---	7.8	7.8	7.8
5	7.9	7.8	7.8	7.8	7.8	7.8	---	---	---	7.9	7.8	7.8
6	7.9	7.8	7.8	7.8	7.8	7.8	---	---	---	7.9	7.8	7.8
7	7.9	7.8	7.8	7.8	7.8	7.8	---	---	---	7.9	7.8	7.8
8	7.8	7.8	7.8	7.8	7.8	7.8	---	---	---	7.9	7.9	7.9
9	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.9
10	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.9
11	7.8	7.7	7.8	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.9
12	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.7	7.8	7.9	7.8	7.8
13	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.7	7.8	7.9	7.8	7.8
14	7.8	7.7	7.8	7.9	7.8	7.8	7.8	7.7	7.7	7.9	7.9	7.9
15	7.8	7.7	7.8	7.9	7.8	7.9	7.8	7.7	7.7	7.9	7.8	7.9
16	7.8	7.7	7.7	7.9	7.9	7.9	7.8	7.7	7.7	8.0	7.8	7.9
17	7.8	7.7	7.8	7.9	7.8	7.8	7.8	7.7	7.8	8.0	7.9	8.0
18	7.8	7.8	7.8	7.8	7.7	7.8	7.8	7.7	7.8	8.0	7.9	8.0
19	7.8	7.8	7.8	7.8	7.7	7.8	7.8	7.7	7.8	8.0	7.8	7.9
20	7.8	7.7	7.8	7.8	7.7	7.8	7.9	7.7	7.8	8.0	7.8	7.9
21	7.8	7.7	7.8	7.8	7.8	7.8	7.8	7.7	7.7	8.0	7.9	8.0
22	7.8	7.7	7.7	7.9	7.8	7.8	7.9	7.7	7.8	8.1	8.0	8.0
23	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.7	7.8	8.1	8.0	8.1
24	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	8.1	7.9	8.0
25	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	8.0	7.8	7.9
26	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8
27	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8
28	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.9	7.9
29	7.8	7.8	7.8	7.9	7.8	7.8	7.9	7.7	7.8	8.0	7.9	7.9
30	7.9	7.8	7.8	7.9	7.8	7.8	7.8	7.7	7.8	8.1	8.0	8.0
31	---	---	---	7.9	7.8	7.8	7.9	7.8	7.8	---	---	---
MONTH	7.9	7.7	7.8	7.9	7.7	7.8	---	---	---	8.1	7.8	7.9

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.6	27.5	28.0	23.7	22.3	23.2	21.3	20.2	20.7	17.5	16.0	16.6
2	28.8	27.8	28.1	22.3	21.1	21.6	21.2	20.5	20.8	17.5	16.0	16.5
3	28.8	27.6	28.2	21.8	21.0	21.4	20.9	20.7	20.8	16.1	14.2	14.8
4	28.9	27.8	28.3	21.6	20.6	21.2	---	---	---	14.6	13.1	13.7
5	28.6	28.0	28.3	20.6	19.1	19.8	---	---	---	13.5	12.1	12.9
6	28.4	22.8	25.2	19.1	17.9	18.5	---	---	---	14.5	12.9	13.6
7	23.8	22.2	22.9	18.1	17.7	17.9	---	---	---	15.6	14.1	14.8
8	24.2	22.6	23.2	19.0	18.1	18.5	19.5	18.7	19.3	16.7	15.4	15.9
9	24.3	22.7	23.4	20.2	19.0	19.5	18.7	17.7	18.1	16.4	14.5	15.1
10	24.6	22.7	23.5	20.6	20.0	20.3	17.7	16.7	17.2	14.8	13.0	13.8
11	24.9	23.0	23.7	20.0	19.1	19.4	16.7	15.8	16.3	14.9	13.2	14.1
12	25.6	24.1	24.6	19.2	18.6	18.9	16.1	15.2	15.6	15.9	14.3	15.1
13	25.9	24.8	25.2	18.7	18.3	18.5	15.9	14.6	15.3	16.8	15.4	16.0
14	25.9	24.8	25.3	18.6	18.0	18.3	15.8	14.6	15.3	16.4	15.0	15.7
15	25.7	24.4	25.0	18.6	17.9	18.2	15.7	14.6	15.2	15.6	14.2	15.0
16	26.3	25.1	25.5	18.9	18.2	18.5	15.7	14.4	15.1	15.9	14.2	14.9
17	26.0	23.3	24.8	18.8	18.4	18.6	15.8	14.7	15.2	16.5	15.3	15.8
18	24.2	22.2	23.2	19.7	18.7	19.2	16.1	15.0	15.5	16.4	15.2	15.7
19	22.2	20.6	21.3	20.6	19.7	20.2	16.6	15.1	15.7	17.1	15.6	16.3
20	20.9	20.3	20.5	20.8	20.2	20.6	17.1	15.8	16.3	18.1	16.6	17.2
21	21.0	20.8	20.9	20.2	19.3	19.7	18.6	16.6	17.5	19.3	17.8	18.3
22	21.1	20.5	20.8	19.4	18.7	19.1	18.1	15.0	16.2	18.8	17.3	18.1
23	20.8	20.3	20.6	19.8	19.0	19.3	15.0	13.6	14.1	17.4	16.2	16.8
24	20.7	19.7	20.3	20.1	19.3	19.7	13.3	12.5	13.0	17.2	15.7	16.5
25	21.4	20.4	20.9	20.8	19.8	20.3	13.1	12.0	12.5	17.8	16.4	17.0
26	22.3	21.4	21.8	20.9	19.9	20.4	13.0	11.4	12.1	18.7	17.5	18.0
27	22.8	22.1	22.5	21.3	20.4	20.7	14.1	11.8	12.7	19.0	17.8	18.4
28	23.3	22.6	22.9	21.4	20.7	21.0	14.7	13.0	13.7	19.8	18.8	19.2
29	---	---	---	21.8	20.9	21.3	15.2	13.4	14.2	20.4	19.6	20.0
30	23.9	23.4	23.6	21.8	21.3	21.5	15.5	13.8	14.6	19.6	18.1	18.6
31	23.8	23.3	23.6	---	---	---	16.6	15.1	15.6	18.4	16.9	17.5
MONTH	---	---	---	23.7	17.7	19.8	---	---	---	20.4	12.1	16.2

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	18.2	17.0	17.6	21.4	19.5	20.4	21.4	20.6	20.9	24.8	23.8	24.1
2	18.5	17.7	18.1	21.8	20.5	21.0	22.2	21.2	21.6	23.9	23.0	23.4
3	19.0	17.8	18.3	21.0	19.7	20.2	23.4	21.9	22.5	24.4	23.5	23.9
4	19.2	18.0	18.6	19.8	18.6	19.1	23.0	21.9	22.4	26.1	24.1	24.8
5	20.1	19.1	19.4	21.2	19.5	20.3	23.7	22.4	22.8	26.2	24.6	25.3
6	21.2	19.9	20.3	22.1	20.5	21.1	22.9	21.3	22.2	25.7	23.9	24.7
7	21.7	20.7	21.1	21.8	19.8	20.5	23.4	22.1	22.6	25.1	23.3	24.1
8	21.6	20.9	21.2	22.2	20.3	21.0	24.5	22.8	23.5	25.2	23.4	24.1
9	22.4	21.3	21.7	21.5	20.2	20.8	25.1	23.6	24.2	25.4	24.7	24.9
10	22.5	21.7	22.1	21.7	20.9	21.2	25.4	24.1	24.6	25.2	23.7	24.5
11	22.3	20.2	21.7	22.7	21.5	22.0	24.8	23.4	24.2	24.5	23.4	23.7
12	20.2	18.2	18.9	22.7	22.2	22.4	24.6	23.8	24.1	25.8	24.0	24.7
13	18.2	16.6	17.3	22.2	20.4	21.3	24.7	23.7	24.1	26.0	24.6	25.1
14	17.7	16.0	16.8	20.4	18.7	19.5	25.0	23.6	24.2	26.6	25.1	25.6
15	18.4	16.5	17.3	19.7	18.1	18.9	24.0	22.4	23.1	27.0	25.4	26.1
16	18.4	17.7	18.1	20.1	18.4	19.1	22.4	21.0	21.5	27.0	25.8	26.3
17	19.3	18.0	18.6	20.6	19.5	19.8	21.6	19.5	20.5	26.8	26.0	26.3
18	19.6	17.9	18.6	20.8	20.3	20.6	21.8	19.7	20.6	26.4	25.1	25.6
19	19.0	18.0	18.5	20.8	20.3	20.5	23.1	21.0	21.8	26.0	24.5	25.2
20	19.9	18.6	19.0	21.2	19.7	20.4	24.2	22.1	22.9	26.6	25.1	25.7
21	19.6	18.1	18.7	21.2	19.5	20.3	23.5	22.7	23.1	27.1	25.6	26.2
22	18.7	17.2	17.9	21.5	19.9	20.7	24.8	23.0	23.7	27.6	25.9	26.6
23	19.1	17.6	18.1	22.2	20.9	21.5	25.8	24.0	24.7	27.8	26.1	26.9
24	19.7	18.3	18.8	22.3	21.7	22.0	25.3	24.7	25.0	27.5	26.1	26.8
25	20.5	19.3	19.7	22.0	21.3	21.6	25.3	24.4	24.8	27.6	26.2	26.8
26	20.9	20.1	20.5	21.4	20.4	20.9	24.9	23.5	24.2	27.7	26.4	26.8
27	22.3	20.7	21.3	20.9	19.8	20.3	25.4	23.2	24.1	27.7	25.8	26.7
28	21.6	19.8	20.6	20.1	18.2	19.2	26.1	24.3	25.1	27.8	26.4	27.0
29	---	---	---	20.5	19.0	19.6	25.9	24.9	25.3	27.7	26.1	26.8
30	---	---	---	21.1	19.9	20.4	25.3	24.7	25.0	28.3	26.5	27.3
31	---	---	---	20.7	19.8	20.3	---	---	---	28.8	27.0	27.8
MONTH	22.5	16.0	19.2	22.7	18.1	20.5	26.1	19.5	23.3	28.8	23.0	25.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29.3	27.3	28.2	29.5	28.0	28.7	29.7	28.1	28.9	29.5	28.2	28.8
2	29.3	27.6	28.4	29.4	28.0	28.6	29.9	27.9	28.9	29.4	28.2	28.8
3	28.8	27.5	28.1	28.6	27.9	28.3	29.7	28.0	28.9	29.5	28.3	28.9
4	29.0	27.3	28.1	28.2	27.5	27.8	---	---	---	29.7	28.5	29.0
5	29.1	27.3	28.2	28.7	26.9	27.7	---	---	---	29.7	28.3	29.0
6	29.0	27.4	28.2	29.2	27.4	28.2	---	---	---	29.0	27.7	28.2
7	29.1	27.4	28.1	29.0	27.7	28.3	---	---	---	28.7	27.4	28.0
8	29.0	27.4	28.1	29.2	27.6	28.3	---	---	---	28.6	27.5	28.0
9	29.1	27.4	28.1	29.6	27.8	28.6	30.7	28.7	30.0	29.2	27.4	28.1
10	29.2	27.4	28.2	29.2	28.0	28.6	30.7	28.6	29.6	29.2	27.7	28.4
11	29.3	27.6	28.4	28.9	27.9	28.3	30.8	28.8	29.8	29.1	27.5	28.3
12	29.4	27.7	28.5	29.1	27.3	28.2	30.9	28.8	29.8	28.9	27.6	28.3
13	28.8	27.6	28.2	29.5	27.6	28.4	30.7	28.8	29.8	28.6	27.6	28.0
14	28.5	27.1	27.9	29.7	27.8	28.6	30.7	28.7	29.7	28.0	26.8	27.4
15	27.9	25.4	27.0	29.5	27.7	28.5	30.3	28.4	29.4	28.0	26.9	27.4
16	26.7	25.2	25.8	29.1	27.4	28.2	30.3	28.6	29.5	27.4	26.2	26.9
17	27.5	26.4	26.9	28.2	27.2	27.6	29.8	28.5	29.2	27.2	25.7	26.4
18	27.8	26.5	27.1	28.1	26.7	27.5	30.3	28.6	29.4	27.8	25.8	26.6
19	27.8	26.9	27.3	28.9	27.0	27.8	30.0	28.5	29.3	27.7	26.1	27.0
20	27.4	26.4	26.8	28.5	27.2	27.8	30.1	28.4	29.3	28.1	26.3	27.1
21	26.4	25.6	26.0	27.9	27.1	27.5	30.1	28.3	29.2	27.5	26.6	27.0
22	26.4	25.5	25.9	28.5	26.9	27.6	29.5	28.3	28.8	26.7	25.5	26.1
23	28.0	26.1	26.8	29.1	27.2	28.0	28.9	28.0	28.3	25.8	24.1	24.8
24	28.3	26.9	27.6	29.0	27.2	28.1	28.9	27.6	28.1	26.3	24.5	25.1
25	28.8	27.6	28.1	29.0	27.0	28.0	29.5	27.8	28.5	26.7	25.3	25.7
26	28.7	27.5	28.1	29.1	27.5	28.3	29.9	28.3	29.0	27.3	25.9	26.5
27	29.1	27.9	28.4	29.4	27.6	28.4	30.3	28.4	29.3	27.9	26.6	27.1
28	29.7	28.1	28.7	29.5	27.8	28.6	30.3	28.6	29.5	28.4	27.0	27.5
29	29.0	28.2	28.5	29.8	27.8	28.7	30.0	28.5	29.2	27.9	25.2	26.3
30	29.6	27.8	28.6	29.9	27.8	28.8	30.0	28.1	29.0	25.4	24.1	24.7
31	---	---	---	30.0	28.0	29.0	29.5	28.1	28.7	---	---	---
MONTH	29.7	25.2	27.7	30.0	26.7	28.2	---	---	---	29.7	24.1	27.3

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.1	5.4	5.8	6.8	6.6	6.7	7.5	7.0	7.2	8.8	8.4	8.6
2	5.9	5.5	5.7	7.1	6.7	7.0	7.4	7.2	7.3	8.9	8.0	8.5
3	6.3	5.4	5.9	7.1	6.9	7.0	7.3	7.1	7.2	9.5	8.5	9.0
4	6.2	5.3	5.7	7.1	6.9	7.0	---	---	---	9.8	8.9	9.3
5	6.0	5.1	5.3	7.4	7.1	7.3	---	---	---	9.9	9.1	9.5
6	6.7	5.1	5.8	7.8	7.4	7.6	---	---	---	9.7	9.1	9.4
7	6.8	6.5	6.7	7.8	7.6	7.8	---	---	---	9.3	8.7	9.0
8	6.9	6.6	6.7	7.8	7.5	7.7	8.1	7.7	7.8	9.0	8.3	8.7
9	6.9	6.7	6.8	7.6	7.2	7.4	8.3	8.1	8.2	9.4	8.1	8.8
10	7.3	6.8	7.0	7.6	7.1	7.2	8.4	8.3	8.3	9.9	8.6	9.2
11	7.3	6.9	7.0	7.7	7.3	7.5	8.8	8.4	8.5	9.8	8.5	9.2
12	7.2	6.8	7.0	7.7	7.4	7.6	8.9	8.7	8.8	9.3	8.3	8.9
13	6.8	6.2	6.5	7.6	7.4	7.5	9.0	8.8	8.9	8.9	7.8	8.4
14	6.8	6.2	6.5	7.5	7.3	7.4	9.0	8.8	8.9	9.1	7.6	8.3
15	6.9	6.3	6.6	7.6	7.3	7.5	9.0	8.9	8.9	9.1	7.6	8.4
16	6.8	6.3	6.5	7.5	7.1	7.3	8.9	8.8	8.8	9.4	7.8	8.6
17	7.3	6.2	6.8	7.3	7.1	7.1	8.9	8.7	8.8	8.9	7.2	8.1
18	7.4	6.4	7.0	7.1	6.8	6.9	8.8	8.5	8.6	9.0	7.0	7.9
19	7.8	6.9	7.3	6.8	6.6	6.7	8.8	8.5	8.6	8.4	6.6	7.6
20	7.7	7.2	7.5	6.8	6.4	6.6	8.7	8.4	8.5	9.0	7.1	8.1
21	7.9	7.4	7.7	7.0	6.6	6.8	8.4	8.1	8.2	9.4	7.3	8.3
22	8.0	7.7	7.9	6.9	6.6	6.7	9.0	7.9	8.5	9.4	7.7	8.6
23	8.0	7.4	7.8	6.7	6.3	6.4	9.4	8.9	9.2	10.3	8.2	9.1
24	8.3	7.3	7.9	6.7	6.4	6.6	10.0	9.4	9.6	10.4	8.2	9.2
25	8.1	7.4	7.9	6.7	6.5	6.5	10.0	9.5	9.7	10.1	7.9	8.9
26	7.9	7.4	7.7	6.7	6.3	6.4	10.0	9.6	9.8	9.9	7.7	8.7
27	7.7	7.4	7.5	7.0	6.3	6.6	9.9	9.4	9.6	9.5	7.1	8.2
28	7.5	7.4	7.4	6.8	6.5	6.6	9.7	9.1	9.4	8.5	7.2	7.8
29	---	---	---	6.8	6.7	6.7	9.6	9.1	9.3	8.4	7.3	7.7
30	6.9	6.8	6.9	7.1	6.6	6.8	9.5	9.0	9.2	9.1	7.5	8.1
31	6.8	6.7	6.8	---	---	---	9.2	8.8	9.0	9.2	7.6	8.3
MONTH	---	---	---	7.8	6.3	7.0	---	---	---	10.4	6.6	8.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.8	7.5	8.2	8.9	7.5	8.1	7.3	7.1	7.2	6.9	6.4	6.7
2	8.8	7.5	8.2	8.9	7.3	8.0	7.1	6.9	7.0	6.9	6.4	6.7
3	8.8	7.9	8.3	9.2	7.6	8.2	7.2	6.9	7.0	7.0	6.3	6.7
4	8.6	7.8	8.2	8.7	7.7	8.2	7.1	6.7	6.9	7.0	6.5	6.8
5	8.4	7.8	8.1	8.8	7.5	8.0	7.1	6.7	6.9	7.0	6.3	6.6
6	8.4	7.8	8.0	8.8	7.4	7.9	7.1	6.6	6.9	7.3	6.4	6.8
7	8.3	7.4	7.8	7.6	7.2	7.4	7.0	6.7	6.8	7.5	6.4	6.9
8	7.8	7.4	7.6	8.1	7.1	7.5	7.0	6.5	6.7	7.4	6.5	6.9
9	7.7	7.2	7.5	8.4	7.0	7.6	7.3	6.5	6.9	7.0	6.3	6.6
10	7.8	7.3	7.5	7.7	7.0	7.3	7.2	6.6	6.8	6.8	6.4	6.6
11	7.8	7.0	7.4	7.8	6.8	7.2	7.4	6.5	6.9	7.2	6.4	6.9
12	8.9	7.8	8.4	7.2	6.6	6.9	6.9	6.5	6.7	7.4	6.6	7.0
13	9.3	8.5	8.8	7.4	6.5	6.9	7.1	6.6	6.8	7.4	6.6	6.9
14	9.6	8.6	9.0	8.0	7.0	7.4	7.1	6.4	6.7	7.4	6.5	6.8
15	9.5	8.6	8.9	8.4	7.2	7.7	7.6	6.6	7.0	7.3	6.4	6.7
16	8.7	8.0	8.5	8.5	7.4	7.8	8.0	7.0	7.4	7.2	6.3	6.7
17	9.1	8.2	8.6	8.0	7.3	7.6	8.4	7.4	7.8	7.1	6.2	6.6
18	9.3	8.3	8.7	7.4	7.0	7.2	8.5	7.5	7.8	6.5	6.2	6.3
19	9.4	8.1	8.7	7.6	6.9	7.2	8.4	7.3	7.7	6.9	6.2	6.6
20	9.1	8.1	8.6	8.0	7.0	7.4	8.0	7.0	7.4	6.9	6.4	6.6
21	9.6	8.1	8.8	8.2	7.1	7.5	7.2	6.7	7.0	6.8	6.1	6.4
22	9.8	8.4	9.0	8.2	7.1	7.5	7.4	6.6	7.0	6.9	6.1	6.4
23	9.9	8.5	9.0	7.9	6.9	7.3	7.2	6.2	6.7	7.1	6.1	6.5
24	9.4	8.3	8.8	7.3	6.9	7.1	7.0	6.0	6.5	7.1	6.2	6.6
25	8.9	7.9	8.5	7.9	6.9	7.3	6.9	6.0	6.4	7.2	6.1	6.6
26	8.3	7.5	7.8	8.1	7.1	7.6	6.4	6.1	6.2	7.2	6.1	6.6
27	8.7	7.4	7.9	7.5	7.2	7.3	6.4	6.1	6.3	7.6	6.4	6.8
28	8.9	7.4	8.1	7.6	7.3	7.4	6.4	5.9	6.2	7.6	6.2	6.8
29	---	---	---	7.4	7.2	7.3	6.8	6.2	6.4	7.6	6.2	6.8
30	---	---	---	7.4	7.2	7.3	6.9	6.2	6.5	7.6	6.1	6.7
31	---	---	---	7.3	7.1	7.2	---	---	---	7.6	6.0	6.6
MONTH	9.9	7.0	8.3	9.2	6.5	7.5	8.5	5.9	6.9	7.6	6.0	6.7

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.5	6.1	6.6	6.7	6.3	6.5	7.2	5.3	6.2	6.7	6.0	6.3
2	7.6	5.8	6.6	6.8	6.2	6.5	7.2	5.7	6.4	6.8	5.9	6.3
3	7.4	6.0	6.6	6.7	6.3	6.5	7.3	6.1	6.7	7.0	6.0	6.5
4	7.5	5.9	6.6	6.9	6.4	6.6	---	---	---	7.0	6.2	6.5
5	7.7	5.9	6.6	7.0	6.5	6.8	---	---	---	6.9	6.1	6.5
6	7.4	5.8	6.5	7.2	6.5	6.8	---	---	---	6.6	6.1	6.4
7	7.2	5.8	6.4	7.1	6.4	6.7	---	---	---	6.8	6.1	6.4
8	6.9	5.7	6.2	7.2	6.3	6.8	---	---	---	6.6	6.1	6.3
9	7.0	5.8	6.3	7.3	6.6	6.8	---	---	---	6.5	6.0	6.2
10	7.1	6.1	6.5	7.2	6.4	6.7	---	---	---	6.5	5.8	6.2
11	7.3	6.1	6.7	6.8	6.3	6.6	---	---	---	7.0	5.9	6.5
12	7.3	6.2	6.6	7.0	6.4	6.7	---	---	---	6.9	6.4	6.7
13	7.0	6.1	6.5	7.2	6.7	6.9	---	---	---	---	---	---
14	7.1	6.1	6.5	7.3	6.7	6.9	7.6	6.7	7.0	7.2	6.7	6.9
15	6.3	5.0	5.9	7.4	6.6	6.9	7.4	6.7	7.0	7.2	6.6	6.9
16	6.1	5.6	5.9	7.2	6.4	6.8	7.3	6.6	6.9	7.2	6.5	6.8
17	6.1	5.8	6.0	6.9	5.8	6.2	7.3	6.7	6.9	7.4	6.7	6.9
18	6.2	6.0	6.1	6.8	5.6	6.2	7.1	6.6	6.8	7.4	6.5	6.9
19	6.3	5.8	6.1	6.5	5.2	5.8	7.2	6.4	6.7	7.2	6.6	6.8
20	6.4	5.9	6.1	6.3	5.1	5.7	7.1	6.5	6.7	7.1	6.5	6.8
21	6.4	6.2	6.3	6.4	5.1	5.6	6.6	6.1	6.3	---	---	---
22	6.3	5.7	6.1	6.4	5.2	5.7	6.8	5.9	6.3	7.4	6.6	7.0
23	6.3	6.1	6.2	6.5	5.0	5.7	6.5	5.6	6.3	7.8	6.9	7.2
24	6.2	5.9	6.1	6.8	5.3	5.9	6.5	6.1	6.3	7.8	6.9	7.2
25	6.3	6.1	6.2	7.0	5.4	6.1	6.5	6.1	6.3	---	---	---
26	6.4	5.9	6.3	7.1	5.5	6.2	6.6	5.8	6.3	7.0	6.5	6.7
27	6.5	6.3	6.4	6.9	5.5	6.3	6.6	6.1	6.3	7.0	6.4	6.7
28	6.5	6.3	6.4	7.2	5.7	6.4	---	---	---	7.1	6.5	6.7
29	6.4	6.3	6.4	7.2	5.9	6.5	6.6	5.7	6.3	7.2	6.5	6.8
30	6.7	6.3	6.4	7.3	5.8	6.5	6.4	5.8	6.1	7.7	7.0	7.2
31	---	---	---	7.4	5.9	6.6	6.9	5.9	6.3	---	---	---
MONTH	7.7	5.0	6.3	7.4	5.0	6.4	---	---	---	---	---	---

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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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Sep 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 380.00 ft above sea level. Sep 12, 1962 to Dec 19, 1980, at site 2.5 mi upstream at different datum. Dec 19, 1980 to Dec 23, 1986, at same site and datum. Dec 24, 1986 to Jun 15, 1993, at site 2.8 mi upstream at different datum. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in water year 1962, at least 10% of contributing drainage area has been regulated by Medina Lake (station 08179500, normal storage 254,000 acre-ft) and by Olmos flood-control reservoir (combined capacity, 269,500 acre-ft). Additional regulation since 1973 by eleven Soil Conservation Service floodwater-retarding structures (combined capacity 26,770 acre-ft). Storage began in Medina Lake in 1913, and Olmos Dam was completed in 1926. Water is diverted above station from Medina River for irrigation in the vicinity of Devine and Lytle, with some water diverted for irrigation near San Antonio. During the current year, the city of San Antonio discharged 135,200 acre-ft of wastewater effluent into the San Antonio River from their Leon Creek, Salado Creek, Dos Rios and Mitchell plants. The San Antonio City Public Service Board pumped 5,796 acre-ft into Braunig Lake and 20,380 acre-ft into Calaveras Lake upstream from this station and released 120 acre-ft from Braunig Lake and made no releases from 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, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	272	1490	869	596	462	328	392	276	317	283	137	165
2	267	1770	882	594	449	328	356	281	285	262	136	161
3	261	1130	875	583	440	323	365	349	245	253	140	173
4	266	1060	858	614	441	321	367	299	236	263	135	152
5	275	1430	789	588	437	325	367	285	226	444	279	150
6	1900	1240	793	565	437	325	349	273	221	295	169	149
7	1050	1250	834	558	433	321	336	265	216	273	150	212
8	452	1270	801	560	423	328	349	258	214	272	146	228
9	377	1190	750	509	407	334	336	253	210	256	155	193
10	347	1150	795	543	398	340	356	1120	208	250	177	183
11	339	1080	795	556	389	336	339	678	206	948	163	172
12	340	1070	752	543	396	330	343	385	227	771	137	173
13	339	1120	743	541	353	451	339	347	283	349	135	179
14	331	2100	758	528	354	390	346	331	423	253	127	162
15	327	1800	748	525	354	399	343	317	583	241	130	163
16	329	1330	730	509	357	385	323	323	818	226	134	171
17	5560	1240	721	515	352	363	308	328	508	256	135	178
18	59100	1180	716	504	342	366	302	707	346	265	132	176
19	35500	1150	709	503	345	503	314	572	263	292	149	185
20	12500	1140	699	500	332	460	305	436	1260	278	192	191
21	5970	1080	675	502	332	405	300	409	2150	215	121	187
22	2790	1080	680	502	342	389	299	391	2040	215	126	184
23	1990	1060	668	486	342	363	296	390	877	190	137	181
24	1610	1040	661	493	338	322	293	401	466	169	420	181
25	1380	1010	629	491	341	307	431	380	333	161	432	175
26	1270	977	620	480	345	298	575	346	487	161	235	182
27	1120	949	619	472	339	299	558	1070	391	155	174	189
28	1010	937	620	479	332	2630	391	389	336	155	162	185
29	887	917	619	475	---	950	355	336	295	149	160	182
30	794	915	617	458	---	507	310	337	290	146	200	179
31	775	---	604	456	---	441	---	313	---	138	192	---
TOTAL	139728	36155	22629	16228	10612	14167	10643	12845	14960	8584	5417	5341
MEAN	4507	1205	730	523	379	457	355	414	499	277	175	178
MAX	59100	2100	882	614	462	2630	575	1120	2150	948	432	228
MIN	261	915	604	456	332	298	293	253	206	138	121	149
AC-FT	277200	71710	44880	32190	21050	28100	21110	25480	29670	17030	10740	10590

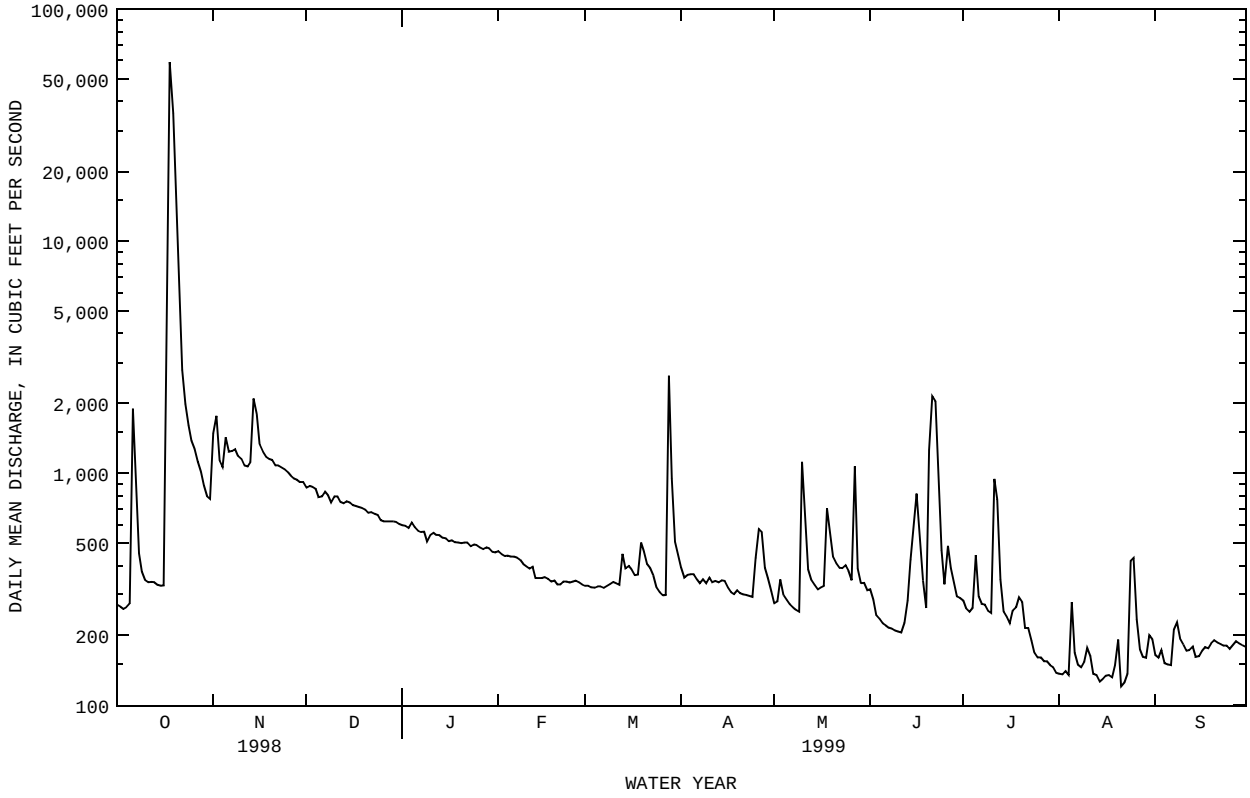
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

MEAN	592	453	458	493	563	498	514	744	976	500	397	468
MAX	4507	1255	2176	2191	3803	3031	1997	3293	8527	3764	1760	2761
(WY)	1999	1977	1992	1968	1992	1992	1992	1992	1987	1973	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

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1962 - 1999	
ANNUAL TOTAL	314741		297309			
ANNUAL MEAN	862		815		554	
HIGHEST ANNUAL MEAN					1784	1992
LOWEST ANNUAL MEAN					166	1963
HIGHEST DAILY MEAN	59100	Oct 18	59100	Oct 18	59100	Oct 18 1998
LOWEST DAILY MEAN	99	Aug 2	121	Aug 21	25	Aug 26 1963
ANNUAL SEVEN-DAY MINIMUM	103	Jul 29	133	Aug 12	42	Aug 21 1963
INSTANTANEOUS PEAK FLOW			75100	Oct 18	75100	Oct 18 1998
INSTANTANEOUS PEAK STAGE			p64.22	Oct 18	p64.22	Oct 18 1998
ANNUAL RUNOFF (AC-FT)	624300		589700		401400	
10 PERCENT EXCEEDS	1140		1080		980	
50 PERCENT EXCEEDS	377		352		316	
90 PERCENT EXCEEDS	153		169		146	

p Observed.



08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Sep 1964 to current year.
BIOCHEMICAL DATA: Jan 1968 to current year.
PESTICIDE DATA: Jan 1968 to Sep 1981; Dec 1992 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1966 to current year.
PH: Jun 1984 to current year.
WATER TEMPERATURE: Oct 1966 to current year.
DISSOLVED OXYGEN: Jun 1984 to current year.

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

REMARKS.--Interruptions in the record were caused by malfunctions of the instrument. 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. 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, Jan 29, 1973, Aug 8, 1975; minimum, 102 microsiemens, Oct 17, 1999.
PH: Maximum, 9.0 units, Jun 16, 17, 1993; minimum, 7.0 units, Oct 25 and 28, 1988, Jan 11, 1989.
WATER TEMPERATURE: Maximum, 33.5°C, Jun 19, 20, Sep 2, 1996; minimum daily, 5.5°C, Jan 10, 1973.
DISSOLVED OXYGEN: Maximum, 13.2 mg/L, Feb 4, 1996; minimum, 0.0 mg/L, Mar 2, Apr 14, 15, 1985.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,040 microsiemens, Sep 23; minimum, 102 microsiemens, Oct 17.
PH: Maximum, 8.3 units, Oct 17, Jan 10-11, Jul 8-11; minimum, 7.5 units, Apr 26, May 10.
WATER TEMPERATURE: Maximum, 32.7°C, Aug 14; minimum, 12.7°C, Dec 26.
DISSOLVED OXYGEN: Maximum, 11.6 mg/L, Oct 23; minimum, 4.6 mg/L, Jul 11.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	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)
NOV											
20...	0945	1140	653	8.1	21.5	7.0	240	63	73	15	35
DEC											
29...	1030	613	805	8.0	15.4	9.1	290	87	86	19	48
FEB											
03...	1200	427	895	8.0	19.1	8.0	300	100	90	19	63
MAR											
05...	1330	310	950	7.7	21.1	7.9	300	77	88	20	74
31...	1015	441	812	7.9	20.7	7.4	250	71	77	15	59
MAY											
06...	0800	285	939	7.8	25.4	5.8	270	70	80	18	71
JUN											
30...	1000	275	812	8.1	28.6	7.1	260	82	79	16	60
JUL											
26...	1000	162	--	8.2	26.1	7.9	270	78	80	17	64
SEP											
13...	1400	167	930	8.1	29.6	6.8	280	70	82	18	76

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, 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)
NOV											
20...	1	23	4.6	180	57	47	.25	12	398	393	3.88
DEC											
29...	1	26	5.7	200	67	64	.32	13	485	472	6.74
FEB											
03...	2	31	6.2	200	73	82	.38	12	538	525	9.06
MAR											
05...	2	34	8.0	230	77	96	.47	12	579	559	9.01
31...	2	33	7.6	180	70	78	.42	12	489	471	8.69
MAY											
06...	2	35	7.7	200	73	93	.46	14	559	524	8.64
JUN											
30...	2	33	7.6	180	64	77	.43	15	493	470	8.74
JUL											
26...	2	33	7.0	190	67	88	.40	13	513	489	8.41
SEP											
13...	2	36	8.7	210	67	99	.52	15	550	534	8.76

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
NOV											
20...	.023	3.91	.056	4.4	.43	.22	.27	.48	.524	.424	.385
DEC											
29...	.033	6.78	.077	7.4	.50	.20	.28	.58	1.01	.872	.841
FEB											
03...	.094	9.16	.123	9.9	.63	.35	.48	.76	1.09	1.10	1.13
MAR											
05...	.116	9.13	.183	9.9	.55	.44	.62	.73	2.06	2.10	2.01
31...	.071	8.76	.176	9.8	.83	.64	.82	1.0	1.39	1.37	1.24
MAY											
06...	.095	8.73	.122	9.4	.53	.53	.65	.65	1.43	1.44	1.26
JUN											
30...	.028	8.77	.054	9.5	.70	.45	.50	.76	1.24	1.17	1.11
JUL											
26...	.016	8.42	<.020	9.1	--	--	.48	.67	1.63	1.19	1.13
SEP											
13...	.057	8.82	.106	9.6	.63	.57	.68	.73	1.69	1.74	1.36

DATE	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)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	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)
NOV											
20...	1.2	388	126	E9.5	4.8	<.0030	<.0020	<.002	<.0020	.012	<.0010
DEC											
29...	2.6	214	129	<10	14	<.0030	<.0020	<.002	<.0020	.012	<.0010
FEB											
03...	3.5	35	30	13	14	<.0030	<.0020	<.002	<.0020	.010	<.0010
MAR											
05...	6.2	22	26	E9.0	12	<.0030	<.0020	<.002	<.0020	.021	<.0010
31...	3.8	98	82	12	6.0	<.0030	<.0020	<.002	<.0020	.253	<.0010
MAY											
06...	3.9	32	41	E9.4	4.4	<.0030	<.0020	<.002	<.0020	.073	<.0010
JUN											
30...	3.4	--	--	E5.8	E2.5	<.0030	<.0020	<.002	<.0020	.049	<.0010
JUL											
26...	3.5	--	--	E5.8	E2.9	E.0027	<.0020	<.002	<.0020	.072	<.0010
SEP											
13...	4.2	--	--	<10	2.4	<.0030	<.0020	<.002	<.0020	.010	<.0010

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)
NOV											
20...	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0084	.008	<.001
DEC											
29...	<.0020	<.0020	<.0030	<.0030	.0046	<.0050	<.0040	<.0020	E.0198	.029	<.001
FEB											
03...	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0139	.019	<.001
MAR											
05...	<.0020	<.0020	E.0405	<.0030	<.0040	<.0050	<.0040	<.0020	E.0214	<.002	<.001
31...	<.0020	<.0020	E.0286	<.0030	<.0040	<.0050	<.0040	<.0020	E.0138	.044	<.001
MAY											
06...	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0282	.009	<.001
JUN											
30...	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0286	.025	<.001
JUL											
26...	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0069	<.002	<.001
SEP											
13...	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0196	.014	<.001

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)
NOV										
20...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004
DEC										
29...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004
FEB										
03...	<.0170	<.0020	<.0040	<.0030	<.0030	.010	<.0020	<.005	<.002	<.004
MAR										
05...	<.0170	<.0020	<.0040	<.0030	<.0030	.016	<.0020	<.005	<.002	<.004
31...	<.0170	<.0020	<.0040	<.0030	<.0030	E.014	<.0020	<.005	.007	<.004
MAY										
06...	<.0170	<.0020	<.0040	<.0030	<.0030	.017	<.0020	<.005	.006	<.004
JUN										
30...	<.0170	<.0020	<.0040	<.0200	<.0030	.009	<.0020	<.005	.005	<.004
JUL										
26...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.023	<.004
SEP										
13...	<.0170	<.0020	<.0040	<.0030	<.0030	.011	<.0020	<.005	<.002	<.004

DATE	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)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)
NOV										
20...	<.0040	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070
DEC										
29...	<.0040	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	.0334	<.0070
FEB										
03...	<.0040	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	E.0054	<.0070
MAR										
05...	<.0040	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070
31...	<.0040	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	E.0103	<.0070
MAY										
06...	<.0040	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	E.0101	<.0070
JUN										
30...	<.0040	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	E.0167	<.0070
JUL										
26...	<.0040	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070
SEP										
13...	<.0040	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	E.0109	<.0070

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)	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)
NOV										
20...	<.0040	<.0130	<.0030	.0114	E.0078	<.0070	<.0130	<.0020	<.0010	<.0020
DEC										
29...	<.0040	<.0130	<.0030	<.0050	.0105	<.0070	<.0130	<.0020	<.0010	<.0020
FEB										
03...	<.0040	<.0130	<.0030	E.0050	E.0094	<.0070	<.0130	<.0020	<.0010	<.0020
MAR										
05...	<.0040	<.0130	<.0030	<.0050	E.0099	<.0070	<.0130	<.0020	<.0010	<.0020
31...	<.0040	<.0130	<.0030	.0156	.0202	<.0070	<.0130	<.0020	<.0010	<.0020
MAY										
06...	<.0040	<.0130	<.0030	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020
JUN										
30...	<.0040	<.0130	<.0030	<.0050	.0279	<.0070	<.0130	<.0020	<.0010	<.0020
JUL										
26...	<.0040	<.0130	<.0030	<.0050	E.0094	<.0070	<.0130	<.0020	<.0010	<.0020
SEP										
13...	<.0040	<.0130	<.0030	.0085	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	946	914	930	820	470	714	831	695	754	815	765	805
2	947	916	933	---	---	e627	739	690	722	803	776	788
3	952	924	939	673	585	639	749	728	739	799	773	789
4	959	917	939	677	662	668	769	730	744	796	767	781
5	943	896	923	671	579	636	755	733	744	815	771	794
6	903	296	558	642	614	634	745	724	738	850	794	816
7	575	384	456	647	606	631	752	721	738	845	805	825
8	781	575	680	627	614	621	768	722	744	853	813	829
9	853	770	790	622	606	616	771	741	757	888	824	850
10	888	824	854	651	613	636	767	729	749	889	831	853
11	900	858	880	669	637	652	776	733	765	842	814	828
12	900	855	878	678	655	669	775	759	769	864	807	829
13	920	877	891	691	667	682	767	746	760	868	835	849
14	949	899	927	704	461	621	754	728	743	864	812	839
15	943	902	926	654	587	615	763	719	741	876	831	854
16	943	917	931	615	587	598	770	731	749	870	831	842
17	946	102	607	637	610	629	788	738	764	852	810	827
18	185	119	145	667	629	648	789	754	770	843	805	824
19	262	157	216	674	654	665	782	754	771	870	820	837
20	353	262	300	670	599	646	782	755	773	875	805	845
21	504	353	421	601	590	597	788	748	769	885	855	870
22	599	475	544	607	596	601	788	740	767	893	854	873
23	676	599	643	642	601	620	784	764	774	885	859	867
24	709	675	695	719	626	665	770	754	763	881	845	865
25	733	689	707	762	709	727	759	737	751	877	832	850
26	761	717	737	762	695	724	763	733	749	882	839	852
27	805	751	782	748	697	716	781	745	766	894	857	869
28	824	796	811	727	651	695	816	758	782	894	857	872
29	840	810	827	707	645	679	820	782	800	903	865	877
30	844	825	835	819	677	720	827	789	807	899	867	877
31	835	819	826	---	---	---	824	793	808	895	856	871
MONTH	959	102	727	---	---	653	831	690	760	903	765	840

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	875	829	853	970	934	945	873	827	847	932	904	914
2	900	847	864	967	926	939	918	854	875	936	898	915
3	909	885	895	978	958	966	918	891	899	921	821	869
4	911	876	892	---	---	e960	906	871	882	937	865	890
5	919	885	900	962	947	952	902	861	874	955	918	934
6	919	873	901	964	940	949	898	856	874	959	938	946
7	913	888	897	963	931	946	907	867	882	975	949	957
8	903	865	881	959	915	931	910	877	892	981	940	957
9	925	877	890	943	916	926	911	870	888	958	918	938
10	946	892	919	961	930	939	903	857	876	954	325	696
11	946	897	922	974	940	952	907	867	888	734	550	649
12	932	903	913	981	955	969	910	864	886	869	726	788
13	935	901	919	962	789	901	932	875	895	899	839	859
14	936	905	920	943	859	900	939	912	923	919	867	882
15	931	897	911	942	914	922	942	898	915	929	897	908
16	953	901	918	944	911	920	954	939	946	933	884	901
17	962	924	939	949	924	935	954	919	930	912	832	860
18	973	939	956	970	933	944	946	907	923	875	530	704
19	975	922	952	961	770	873	936	890	911	783	712	748
20	968	928	946	891	817	856	951	912	923	858	752	793
21	953	928	942	903	879	891	961	935	946	893	792	848
22	952	914	929	903	865	880	984	942	957	900	851	874
23	969	921	934	924	879	891	992	944	962	912	865	885
24	983	957	966	928	904	914	974	944	957	904	855	875
25	986	964	974	945	907	920	967	712	893	913	876	891
26	997	966	985	944	909	924	854	641	756	966	913	929
27	996	962	975	942	806	916	827	661	765	974	322	605
28	992	953	966	885	268	478	907	791	852	829	584	722
29	---	---	---	674	471	576	925	866	886	891	829	852
30	---	---	---	798	674	738	930	894	910	890	823	850
31	---	---	---	853	779	811	---	---	---	895	853	872
MONTH	997	829	924	---	---	889	992	641	894	981	322	849

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	935	865	896	885	823	847	954	909	936	915	888	906
2	957	922	936	891	851	866	940	893	924	948	907	929
3	990	953	968	901	868	881	945	908	929	1010	917	943
4	984	949	966	908	832	883	983	936	965	961	923	945
5	994	954	970	886	604	695	993	672	808	958	921	943
6	---	---	---	823	748	779	921	807	865	942	879	924
7	966	908	941	880	801	837	946	912	931	918	877	900
8	963	923	943	899	878	886	969	888	944	926	869	902
9	1000	955	980	936	873	896	955	907	935	941	907	923
10	1010	972	987	941	889	911	947	914	930	943	916	930
11	1010	979	989	914	233	579	982	937	962	973	933	952
12	1020	979	998	639	445	531	999	962	979	958	915	943
13	1020	781	907	792	594	686	1000	954	982	951	890	927
14	914	827	861	855	779	800	990	954	974	941	907	924
15	995	357	787	880	736	837	989	943	970	965	914	943
16	737	466	561	890	851	864	966	919	948	1000	938	963
17	772	546	667	893	847	867	964	928	944	972	940	962
18	838	757	786	896	857	872	990	945	971	974	942	964
19	878	814	840	893	831	859	1010	958	987	978	930	960
20	973	216	461	869	869	823	994	959	980	958	913	941
21	438	170	353	874	838	850	1000	961	986	959	921	939
22	450	300	376	875	843	857	987	964	977	1010	944	976
23	569	437	499	---	---	e865	973	922	953	1040	998	1020
24	685	568	624	---	---	e873	957	555	831	1030	992	1020
25	778	653	699	---	---	e882	796	566	680	1020	984	1000
26	782	506	668	---	---	e890	893	793	842	1010	964	991
27	764	630	697	930	898	898	924	893	912	988	938	969
28	796	705	746	957	912	938	952	919	936	969	935	952
29	851	756	791	963	920	947	945	921	934	989	938	969
30	864	801	831	977	914	950	937	813	895	1000	974	986
31	---	---	---	952	905	936	888	843	859	---	---	---
MONTH	---	---	---	---	---	841	1010	555	925	1040	869	952

e Estimated

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	8.1	8.1	7.8	7.6	7.7	7.8	7.7	7.7	8.1	8.0	8.1
2	8.2	8.1	8.1	---	---	---	7.8	7.8	7.8	8.2	8.1	8.1
3	8.1	8.0	8.0	7.8	7.7	7.7	7.8	7.8	7.8	8.2	8.1	8.2
4	8.1	8.0	8.0	7.9	7.8	7.8	7.8	7.8	7.8	8.2	8.1	8.1
5	8.1	8.0	8.0	8.0	7.9	7.9	7.8	7.8	7.8	8.2	8.1	8.1
6	8.1	7.6	7.8	8.0	7.9	7.9	7.8	7.8	7.8	8.2	8.1	8.1
7	7.8	7.7	7.7	8.0	7.9	8.0	7.8	7.8	7.8	8.2	8.1	8.2
8	7.9	7.8	7.9	8.0	8.0	8.0	7.9	7.8	7.9	8.2	8.1	8.2
9	8.0	7.8	7.9	8.0	7.9	8.0	7.9	7.9	7.9	8.2	8.2	8.2
10	8.0	7.9	8.0	8.0	7.8	7.9	7.9	7.9	7.9	8.3	8.2	8.2
11	8.0	7.9	8.0	8.1	7.8	7.9	7.9	7.9	7.9	8.3	8.2	8.2
12	7.9	7.9	7.9	8.1	8.0	8.0	7.9	7.9	7.9	8.2	8.1	8.2
13	7.9	7.8	7.9	8.1	8.0	8.0	7.9	7.9	7.9	8.2	8.1	8.1
14	8.0	7.8	7.9	8.1	7.9	8.1	7.9	7.9	7.9	8.2	8.1	8.1
15	8.0	7.9	7.9	8.1	7.8	8.1	8.0	7.9	7.9	8.2	8.1	8.1
16	8.0	7.9	8.0	8.1	7.7	7.9	8.0	7.9	7.9	8.2	8.1	8.1
17	8.3	7.8	8.1	8.2	7.9	8.1	8.0	7.9	7.9	8.2	8.1	8.2
18	8.1	7.9	8.0	8.2	8.0	8.1	8.0	7.9	7.9	8.2	8.1	8.1
19	7.9	7.7	7.7	8.1	8.1	8.1	8.0	7.9	8.0	8.2	8.1	8.1
20	7.7	7.6	7.6	8.1	8.1	8.1	8.0	8.0	8.0	8.2	8.1	8.1
21	7.6	7.6	7.6	8.2	8.0	8.1	8.0	8.0	8.0	8.2	8.1	8.1
22	7.7	7.6	7.6	8.0	7.8	7.9	8.0	8.0	8.0	8.1	8.0	8.0
23	7.7	7.6	7.7	---	---	---	8.0	8.0	8.0	8.2	8.0	8.1
24	7.7	7.7	7.7	---	---	---	8.0	8.0	8.0	8.2	8.1	8.1
25	7.7	7.7	7.7	---	---	---	8.0	8.0	8.0	8.2	8.1	8.1
26	7.7	7.7	7.7	---	---	---	8.0	8.0	8.0	8.2	8.0	8.1
27	7.8	7.7	7.7	---	---	---	8.0	8.0	8.0	8.2	8.0	8.1
28	7.8	7.8	7.8	---	---	---	8.0	8.0	8.0	8.1	8.0	8.1
29	7.8	7.7	7.7	---	---	---	---	---	---	8.1	8.0	8.1
30	7.7	7.7	7.7	---	---	---	---	---	---	8.2	8.1	8.1
31	7.8	7.7	7.7	---	---	---	8.1	8.0	8.0	8.1	8.0	8.1
MONTH	8.3	7.6	7.8	---	---	---	---	---	---	8.3	8.0	8.1

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.1	8.0	8.0	8.1	8.0	8.0	8.0	7.9	8.0	7.9	7.9	7.9
2	8.1	8.0	8.0	8.1	7.9	8.0	8.0	7.9	8.0	7.9	7.8	7.9
3	8.1	8.0	8.0	8.0	7.9	8.0	7.9	7.9	7.9	7.8	7.8	7.8
4	8.1	8.0	8.0	---	---	---	8.0	7.9	7.9	7.8	7.7	7.8
5	8.1	8.0	8.0	7.8	7.7	7.8	8.0	7.9	8.0	7.9	7.7	7.8
6	8.1	8.0	8.0	7.8	7.7	7.8	8.0	7.9	8.0	7.9	7.8	7.8
7	8.1	8.0	8.1	7.8	7.7	7.8	8.0	7.9	7.9	7.9	7.8	7.8
8	8.1	7.9	8.0	7.8	7.7	7.7	8.0	7.9	8.0	8.0	7.9	7.9
9	8.0	7.9	7.9	7.8	7.7	7.8	8.0	7.9	7.9	7.9	7.9	7.9
10	8.0	7.9	8.0	7.9	7.7	7.8	8.1	8.0	8.0	7.9	7.5	7.8
11	8.0	7.9	8.0	7.9	7.8	7.9	8.1	8.0	8.0	7.9	7.7	7.8
12	8.1	8.0	8.0	7.9	7.8	7.9	8.1	8.0	8.0	8.0	7.9	7.9
13	8.1	8.0	8.0	7.9	7.8	7.9	8.0	7.9	8.0	8.1	8.0	8.0
14	8.1	8.0	8.0	7.9	7.8	7.8	8.1	8.0	8.0	8.1	8.0	8.1
15	8.1	8.0	8.1	8.0	7.8	7.9	8.1	8.0	8.0	8.1	8.0	8.1
16	8.1	8.0	8.1	8.0	7.9	7.9	8.1	7.9	8.0	8.1	8.0	8.1
17	8.1	8.0	8.0	7.9	7.9	7.9	8.1	8.0	8.0	8.2	8.1	8.1
18	8.0	7.9	8.0	7.9	7.9	7.9	8.1	8.0	8.0	8.1	7.8	8.0
19	8.1	8.0	8.0	7.9	7.8	7.9	8.1	7.9	8.0	8.1	8.0	8.0
20	8.0	8.0	8.0	8.0	7.9	7.9	8.1	7.9	8.0	8.1	8.0	8.1
21	8.1	8.0	8.0	8.1	7.9	8.0	8.0	7.9	8.0	8.1	8.0	8.1
22	8.0	7.9	7.9	8.1	8.0	8.0	8.0	7.9	7.9	8.1	8.0	8.0
23	8.0	7.9	7.9	8.1	8.0	8.0	8.0	7.9	7.9	8.1	8.0	8.0
24	8.1	8.0	8.0	8.1	8.0	8.0	7.9	7.8	7.9	8.2	8.0	8.1
25	8.1	8.0	8.0	8.1	8.0	8.0	7.9	7.6	7.8	8.2	8.0	8.1
26	8.1	7.9	8.0	8.1	8.0	8.1	7.7	7.5	7.6	8.2	8.1	8.1
27	8.0	7.9	7.9	8.1	8.0	8.0	7.7	7.6	7.7	8.2	7.8	7.9
28	8.1	7.9	8.0	8.2	7.7	7.9	7.7	7.6	7.7	8.0	7.9	7.9
29	---	---	---	7.9	7.8	7.9	7.8	7.7	7.7	8.1	8.0	8.0
30	---	---	---	8.0	7.9	7.9	7.8	7.7	7.7	8.1	8.0	8.0
31	---	---	---	8.0	7.9	7.9	---	---	---	8.1	8.0	8.1
MONTH	8.1	7.9	8.0	---	---	---	8.1	7.5	7.9	8.2	7.5	8.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.2	8.0	8.1	8.1	8.0	8.0	8.2	8.0	8.1	8.2	8.1	8.1
2	8.1	7.9	8.0	8.1	8.0	8.1	8.2	8.0	8.1	8.2	8.0	8.1
3	8.1	7.9	8.0	8.1	8.0	8.1	8.2	8.0	8.1	8.1	8.0	8.1
4	8.1	8.0	8.0	8.1	8.0	8.1	8.2	8.0	8.1	8.2	8.1	8.1
5	8.1	8.0	8.0	8.1	7.9	8.0	8.1	7.9	8.0	8.2	8.1	8.1
6	---	---	---	8.1	8.0	8.0	8.0	7.9	7.9	8.2	8.1	8.1
7	8.2	8.0	8.1	8.2	8.0	8.1	8.1	7.9	8.0	8.2	8.0	8.1
8	8.1	7.9	8.0	8.3	8.1	8.2	8.1	8.0	8.0	8.2	8.0	8.1
9	8.1	7.9	8.0	8.3	8.2	8.2	8.1	8.0	8.0	8.1	8.0	8.1
10	8.1	7.9	8.0	8.3	8.2	8.2	8.1	8.0	8.0	8.2	8.1	8.1
11	8.1	7.9	8.0	8.3	8.0	8.0	8.1	8.0	8.0	8.1	8.1	8.1
12	8.1	7.9	8.0	8.0	7.9	8.0	8.2	8.0	8.1	8.1	8.0	8.1
13	8.1	7.9	8.0	8.1	8.0	8.0	8.2	8.0	8.1	8.1	8.0	8.1
14	8.0	7.9	7.9	8.1	8.0	8.0	8.2	8.0	8.1	8.1	8.0	8.1
15	8.0	7.6	7.9	8.2	8.0	8.1	8.2	8.1	8.1	8.2	8.0	8.1
16	7.9	7.8	7.9	8.2	8.1	8.1	8.2	8.1	8.1	8.1	8.0	8.0
17	8.0	7.9	7.9	8.2	8.1	8.2	8.2	8.1	8.1	8.1	8.0	8.0
18	7.9	7.9	7.9	8.2	8.1	8.2	8.2	8.0	8.1	8.1	8.0	8.1
19	8.0	7.9	7.9	8.1	8.0	8.1	8.2	8.1	8.1	8.2	8.0	8.1
20	7.9	7.7	7.8	8.2	8.0	8.1	8.1	8.0	8.0	8.2	8.0	8.1
21	8.0	7.8	7.8	8.2	8.1	8.1	8.1	8.0	8.1	8.2	8.0	8.1
22	7.8	7.8	7.8	---	---	---	8.1	8.0	8.1	8.2	8.0	8.1
23	7.9	7.8	7.9	---	---	---	8.1	8.0	8.0	8.1	7.9	8.0
24	8.0	7.9	7.9	---	---	---	8.1	7.8	8.0	8.1	7.9	8.0
25	8.0	7.9	7.9	---	---	---	8.0	7.9	8.0	8.1	7.9	8.0
26	8.0	7.9	8.0	---	---	---	8.1	8.0	8.0	8.1	7.9	8.0
27	8.1	8.0	8.0	8.2	8.0	8.1	8.1	8.0	8.0	8.1	7.9	8.0
28	8.1	8.0	8.0	8.2	8.0	8.1	8.1	8.0	8.1	8.1	7.9	8.0
29	8.1	8.0	8.0	8.2	8.0	8.1	8.1	8.1	8.1	8.0	7.9	8.0
30	8.2	8.0	8.1	8.2	8.0	8.1	8.2	8.1	8.1	8.2	8.0	8.1
31	---	---	---	8.2	8.0	8.1	8.2	8.0	8.1	---	---	---
MONTH	---	---	---	---	---	---	8.2	7.8	8.1	8.2	7.9	8.1

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	29.7	28.5	29.1	24.4	22.3	23.6	22.5	21.5	22.0	18.9	17.6	18.2
2	29.6	28.6	29.1	22.8	21.9	22.3	22.2	21.4	21.8	18.9	17.5	18.0
3	29.8	28.5	29.1	22.6	21.6	22.0	22.5	21.8	22.1	17.5	15.5	16.1
4	29.8	28.8	29.3	22.4	21.4	22.0	22.9	22.2	22.5	15.5	14.4	14.7
5	29.5	28.9	29.2	21.4	19.7	20.3	23.0	22.5	22.7	14.8	13.7	14.3
6	29.1	21.3	24.1	19.7	18.6	19.1	23.1	22.6	22.8	16.3	14.3	15.2
7	23.0	20.7	21.6	18.9	18.2	18.5	22.8	21.6	22.4	17.9	15.7	16.6
8	24.6	22.4	23.2	19.8	18.9	19.2	21.6	19.7	20.5	19.0	17.3	18.1
9	25.0	23.2	24.1	20.9	19.7	20.3	19.7	18.5	18.9	18.7	16.4	16.9
10	25.1	23.6	24.4	21.5	20.9	21.2	18.5	17.3	17.9	16.5	14.7	15.4
11	25.5	24.1	24.8	21.0	20.1	20.4	17.3	16.5	17.0	16.7	14.6	15.6
12	26.6	25.3	25.7	20.1	19.5	19.8	16.8	16.3	16.5	17.9	15.9	16.8
13	27.0	26.1	26.5	19.5	19.2	19.4	16.9	16.0	16.4	18.6	17.0	17.8
14	27.0	26.1	26.4	19.4	18.3	18.9	17.2	16.1	16.6	18.3	17.0	17.4
15	26.6	25.5	26.0	19.0	18.2	18.6	17.3	16.2	16.7	17.5	15.9	16.6
16	27.1	26.0	26.5	19.7	18.9	19.2	17.2	16.2	16.6	17.6	15.8	16.7
17	27.1	23.7	25.7	19.8	19.4	19.6	17.2	16.4	16.7	18.5	16.9	17.7
18	24.3	22.4	23.3	20.8	19.6	20.1	17.5	16.4	16.9	18.3	16.9	17.7
19	22.4	20.9	21.7	21.8	20.6	21.2	17.9	16.8	17.3	19.0	17.2	18.1
20	21.0	20.5	20.7	21.8	21.2	21.6	18.4	17.2	17.7	20.0	18.1	19.0
21	21.1	20.9	21.0	21.2	20.3	20.7	20.0	18.3	19.1	21.0	19.5	20.2
22	21.0	20.5	20.8	20.3	19.8	20.1	19.3	16.2	17.4	20.9	19.2	20.0
23	21.0	20.5	20.8	20.7	19.9	20.3	16.2	14.4	15.0	19.2	17.7	18.3
24	20.9	20.1	20.5	21.2	20.5	20.7	14.0	13.7	13.9	18.6	16.8	17.8
25	21.8	20.8	21.2	21.8	20.9	21.3	14.0	13.3	13.5	19.4	17.3	18.4
26	23.0	21.7	22.3	21.9	21.5	21.7	14.2	12.7	13.4	20.2	18.6	19.4
27	23.7	22.9	23.3	22.2	21.6	22.0	15.6	13.4	14.3	20.5	19.1	19.8
28	24.0	23.4	23.6	22.2	21.9	22.1	16.5	14.7	15.6	21.2	19.9	20.4
29	24.4	23.7	24.0	22.6	22.1	22.3	16.9	15.3	16.0	21.5	20.9	21.2
30	24.6	24.0	24.3	22.9	22.4	22.7	17.3	15.9	16.5	21.0	19.5	20.0
31	24.5	24.1	24.3	---	---	---	18.1	16.6	17.3	19.7	17.9	18.8
MONTH	29.8	20.1	24.4	24.4	18.2	20.7	23.1	12.7	17.9	21.5	13.7	17.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	19.7	17.9	18.8	22.4	20.3	21.4	22.1	21.0	21.4	26.0	24.6	25.1
2	19.8	18.8	19.3	22.6	21.3	22.1	23.0	21.9	22.3	24.6	23.8	24.1
3	20.3	19.0	19.5	22.2	20.5	21.2	24.3	22.6	23.4	25.1	23.7	24.3
4	20.6	19.2	19.8	---	---	---	24.3	22.9	23.5	27.3	24.7	25.7
5	21.5	20.0	20.6	21.9	20.8	21.5	24.9	23.0	23.9	27.7	25.5	26.6
6	22.2	21.0	21.5	23.0	21.6	22.3	24.3	22.2	23.4	27.2	25.0	26.2
7	23.0	21.5	22.3	22.8	20.8	21.5	24.8	22.9	23.8	26.6	24.6	25.7
8	23.0	22.0	22.5	22.7	21.0	21.8	25.9	23.7	24.8	26.6	24.6	25.7
9	23.3	22.4	22.8	22.7	21.2	21.9	26.6	24.5	25.6	26.5	25.7	26.2
10	23.6	22.6	23.1	22.6	21.8	22.2	26.7	25.0	26.0	26.4	22.5	24.5
11	23.5	21.2	22.6	23.7	22.4	22.9	26.3	24.5	25.5	24.4	22.9	23.5
12	21.2	19.1	19.7	23.7	23.2	23.4	25.8	24.8	25.2	26.8	24.2	25.2
13	19.2	17.1	18.2	23.3	21.0	21.9	25.6	24.4	25.0	27.2	25.3	26.2
14	18.6	16.6	17.8	21.0	19.2	20.1	26.1	24.4	25.3	27.8	26.0	26.8
15	19.5	17.1	18.3	20.5	18.3	19.6	25.7	23.2	24.3	28.4	26.5	27.4
16	20.0	18.5	19.1	21.0	18.9	20.0	24.0	21.9	22.8	28.5	26.9	27.7
17	20.2	19.0	19.7	21.6	20.2	20.7	22.6	20.5	21.7	28.0	27.0	27.6
18	20.8	19.1	20.0	21.8	21.1	21.4	23.1	20.7	22.0	27.7	24.8	26.1
19	20.7	18.9	19.7	21.8	20.4	21.2	24.7	21.9	23.2	26.9	24.9	25.9
20	20.5	19.6	20.1	21.9	20.5	21.2	25.6	23.3	24.4	27.7	25.5	26.6
21	20.5	19.0	19.7	22.4	20.2	21.4	25.3	24.0	24.5	28.3	26.3	27.3
22	19.7	18.1	18.9	22.8	20.4	21.7	25.9	24.1	24.8	28.9	26.8	27.8
23	20.0	18.5	19.1	23.2	21.6	22.4	27.0	25.1	26.0	29.4	27.2	28.3
24	20.6	19.1	19.8	23.2	22.7	23.0	26.8	25.8	26.3	28.9	27.3	28.1
25	21.6	20.1	20.6	23.2	22.3	22.6	26.2	25.1	25.7	28.9	27.2	28.1
26	22.0	21.2	21.5	22.4	21.3	21.8	25.1	24.1	24.7	28.9	27.4	28.1
27	23.2	21.7	22.4	22.0	19.8	21.0	26.4	23.9	24.9	28.3	23.9	25.8
28	22.8	20.8	21.8	20.5	16.9	18.2	27.5	24.8	26.1	28.4	26.0	27.1
29	---	---	---	20.4	18.6	19.3	27.2	25.7	26.5	29.0	26.6	27.7
30	---	---	---	21.5	19.9	20.6	26.8	25.6	26.1	29.7	27.3	28.4
31	---	---	---	21.5	20.5	20.9	---	---	---	30.3	28.0	29.1
MONTH	23.6	16.6	20.3	---	---	---	27.5	20.5	24.4	30.3	22.5	26.5

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.6	28.4	29.5	30.7	28.7	29.7	32.0	29.7	30.8	30.9	29.3	30.1
2	30.6	28.6	29.6	30.7	29.0	29.8	32.1	29.4	30.7	31.3	29.3	30.2
3	29.8	28.4	29.0	30.1	29.0	29.6	31.8	29.7	30.8	31.1	29.4	30.2
4	29.4	26.7	28.2	29.5	28.6	29.0	31.9	29.7	30.7	31.4	29.7	30.4
5	29.8	26.8	28.4	29.8	27.9	28.8	31.4	29.7	30.5	31.3	29.5	30.2
6	29.8	27.5	29.2	30.7	28.1	29.4	31.6	29.4	30.6	30.2	28.9	29.4
7	29.7	27.4	28.7	30.7	28.9	29.8	32.0	29.7	30.8	30.2	28.5	29.2
8	29.8	27.4	28.7	30.8	28.9	29.8	32.1	29.9	30.9	30.1	28.9	29.5
9	29.9	27.6	28.8	31.1	29.0	30.1	32.2	29.9	31.1	30.2	28.7	29.6
10	30.0	27.8	28.9	31.0	29.3	30.1	32.0	30.0	31.1	30.6	29.0	29.9
11	30.2	28.2	29.2	30.2	27.6	28.6	32.2	30.1	31.1	30.7	28.9	29.8
12	30.7	28.5	29.5	29.5	27.8	28.5	32.4	30.0	31.2	30.8	29.0	29.8
13	30.0	28.5	29.2	30.7	28.7	29.5	32.4	30.0	31.2	30.0	28.9	29.4
14	29.7	27.8	28.7	30.9	28.7	29.8	32.7	30.0	31.2	29.8	27.9	28.8
15	28.9	26.3	27.8	30.8	28.6	29.8	32.1	29.8	31.0	29.9	28.2	29.0
16	27.5	26.3	26.9	30.9	28.8	29.8	31.9	29.9	31.0	29.5	27.6	28.5
17	28.5	26.7	27.5	30.2	28.7	29.2	31.5	29.7	30.6	29.2	26.9	28.0
18	29.3	27.3	28.2	29.9	28.2	29.0	32.0	29.7	30.8	29.3	27.3	28.3
19	29.5	27.8	28.6	30.0	28.5	29.2	32.2	29.7	30.9	29.3	27.5	28.4
20	29.2	25.5	27.2	30.2	28.6	29.5	31.6	29.8	30.8	29.4	27.5	28.5
21	26.0	25.1	25.7	29.8	28.5	29.1	31.9	29.7	30.8	29.0	27.8	28.4
22	26.9	25.2	25.9	30.5	28.0	29.2	30.9	29.7	30.1	27.9	26.2	27.1
23	28.7	26.7	27.4	---	---	---	29.7	28.7	29.2	27.0	24.8	26.0
24	29.4	27.7	28.5	---	---	---	29.2	28.4	28.6	27.4	25.2	26.4
25	30.4	28.2	29.2	---	---	---	30.2	27.9	28.9	27.8	26.5	27.1
26	29.8	28.6	29.2	---	---	---	31.1	29.0	30.1	28.8	27.0	27.8
27	30.4	28.5	29.3	31.5	29.4	30.4	31.8	29.7	30.8	29.3	27.7	28.4
28	30.8	28.7	29.7	31.8	29.6	30.6	32.2	30.0	31.0	29.7	27.9	28.8
29	30.3	29.1	29.6	32.0	29.6	30.7	31.9	30.0	30.8	29.2	25.8	27.3
30	30.8	28.6	29.7	32.0	29.5	30.8	31.4	29.6	30.5	26.5	24.7	25.6
31	---	---	---	32.3	29.7	30.9	30.8	29.3	30.0	---	---	---
MONTH	30.8	25.1	28.5	---	---	---	32.7	27.9	30.6	31.4	24.7	28.7

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.1	6.4	6.7	---	---	---	---	---	---	9.0	8.7	8.8
2	7.0	6.1	6.6	---	---	---	8.4	7.7	8.0	9.2	8.5	8.8
3	7.0	6.1	6.5	7.7	7.3	7.5	8.0	7.5	7.8	9.8	8.9	9.3
4	7.0	6.1	6.5	7.7	7.0	7.3	7.9	7.4	7.7	10.3	9.5	9.7
5	6.9	6.2	6.5	7.8	7.1	7.4	7.8	7.3	7.6	10.1	9.5	9.8
6	7.7	6.3	7.1	7.9	7.0	7.4	7.5	6.1	7.0	9.6	9.0	9.3
7	7.6	6.9	7.4	8.1	7.4	7.8	7.2	5.6	6.6	9.2	8.6	8.9
8	7.0	6.4	6.8	8.1	7.1	7.7	7.4	5.4	6.4	8.9	8.4	8.7
9	---	---	---	7.7	5.6	7.0	---	---	---	9.2	8.4	8.8
10	---	---	---	6.8	5.3	6.0	7.5	6.2	6.9	9.7	8.7	9.2
11	---	---	---	---	---	---	7.1	4.7	5.5	9.6	8.9	9.2
12	7.3	6.2	6.8	---	---	---	7.4	4.9	5.8	9.3	8.6	8.9
13	7.8	6.4	7.0	---	---	---	7.3	5.0	6.0	9.0	8.4	8.7
14	9.0	7.2	7.9	---	---	---	7.9	5.8	7.1	9.3	8.4	8.8
15	8.0	7.5	7.7	---	---	---	8.7	6.7	7.6	9.5	8.6	9.1
16	8.9	7.8	8.2	---	---	---	8.6	5.8	7.2	9.4	8.6	8.9
17	9.1	6.2	8.0	---	---	---	8.0	6.3	7.0	9.2	8.2	8.7
18	10.2	8.1	9.4	---	---	---	8.3	6.8	7.7	9.2	8.2	8.6
19	11.5	9.3	10.3	---	---	---	8.6	6.8	8.2	8.9	8.3	8.6
20	11.5	10.2	11.0	---	---	---	8.5	8.3	8.4	8.5	7.4	8.0
21	10.7	10.2	10.4	---	---	---	8.4	7.8	8.1	8.1	7.2	7.6
22	10.8	10.4	10.5	---	---	---	8.3	8.0	8.1	8.6	6.9	7.6
23	11.6	10.4	10.8	---	---	---	9.1	8.4	8.8	9.5	7.8	8.5
24	11.1	9.0	9.9	---	---	---	9.9	8.9	9.4	9.2	8.4	8.9
25	10.7	7.4	9.0	---	---	---	9.8	9.6	9.8	9.0	8.2	8.5
26	8.9	6.4	7.6	---	---	---	9.9	9.6	9.8	8.6	7.6	8.1
27	6.8	5.8	6.3	---	---	---	9.7	9.3	9.5	9.0	7.6	8.3
28	6.4	5.9	6.1	---	---	---	9.3	9.0	9.2	8.6	7.9	8.2
29	6.4	5.4	5.9	---	---	---	9.5	8.8	9.1	8.5	7.6	8.1
30	6.3	5.4	5.8	---	---	---	9.3	8.8	9.1	9.1	7.9	8.4
31	6.1	5.3	5.7	---	---	---	9.3	8.8	9.0	9.1	8.4	8.8
MONTH	---	---	---	---	---	---	---	---	---	10.3	6.9	8.7

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.0	8.4	8.7	9.3	7.8	8.5	7.5	7.1	7.3	6.3	5.5	5.8
2	8.8	8.0	8.4	9.1	7.8	8.4	7.2	7.0	7.1	6.6	5.9	6.2
3	8.8	7.6	8.4	8.4	7.7	8.0	7.3	6.8	7.1	6.9	5.8	6.2
4	8.6	7.9	8.3	---	---	---	7.4	6.8	7.1	6.1	5.5	5.8
5	8.5	7.5	8.2	8.5	7.7	8.1	7.4	6.9	7.2	6.7	5.4	6.0
6	8.5	7.7	8.1	8.4	7.5	7.8	7.6	6.9	7.2	6.5	5.5	6.0
7	8.5	7.7	8.1	7.8	7.2	7.5	7.6	6.8	7.2	6.3	5.4	5.8
8	8.1	7.1	7.8	8.1	7.1	7.7	7.6	6.6	7.1	6.4	5.0	5.8
9	8.0	7.2	7.6	8.1	7.1	7.6	7.3	6.2	6.7	6.2	5.4	5.8
10	8.0	7.3	7.7	7.7	7.1	7.4	7.3	6.2	6.8	7.4	5.3	6.1
11	8.1	7.5	7.7	7.8	6.9	7.2	7.2	6.2	6.7	7.1	6.3	6.6
12	9.2	7.8	8.4	7.2	6.8	7.0	7.2	6.5	6.9	7.1	6.6	7.0
13	9.5	8.7	9.1	7.6	6.9	7.2	7.8	6.5	7.1	7.3	6.8	7.0
14	9.5	8.8	9.2	7.7	6.9	7.3	7.8	7.1	7.5	7.1	6.7	6.9
15	9.4	8.7	9.0	8.2	7.3	7.7	8.3	6.8	7.5	7.1	6.7	6.9
16	9.1	8.3	8.7	8.0	7.3	7.6	8.6	7.4	8.0	7.0	6.5	6.8
17	9.3	8.4	8.8	7.9	7.2	7.5	9.3	7.9	8.5	7.0	6.5	6.7
18	9.1	8.3	8.7	7.7	7.0	7.2	9.2	8.3	8.7	7.2	6.3	6.8
19	9.2	8.1	8.7	7.7	6.9	7.3	9.5	7.9	8.6	7.0	6.7	6.9
20	9.1	8.1	8.6	8.1	7.2	7.7	9.1	7.7	8.3	7.1	6.7	6.9
21	9.5	8.5	9.0	8.3	7.7	8.0	8.3	7.4	7.9	7.3	6.8	7.0
22	9.8	8.5	9.1	8.2	7.4	7.8	8.4	7.3	7.8	7.5	6.6	7.0
23	9.7	8.4	9.0	7.9	7.3	7.6	8.0	7.1	7.5	7.6	6.6	7.2
24	9.5	8.4	8.9	7.8	7.2	7.4	7.5	6.6	7.1	7.8	6.6	7.2
25	9.2	8.2	8.8	8.0	7.3	7.7	7.7	6.5	7.0	7.7	6.7	7.2
26	8.8	8.1	8.4	8.3	7.3	7.8	7.4	6.5	6.9	7.8	6.5	7.0
27	8.7	7.8	8.3	8.0	7.0	7.5	7.2	6.8	7.0	6.6	4.7	5.8
28	8.9	7.8	8.3	7.8	5.3	7.3	7.1	6.4	6.9	6.2	5.2	5.7
29	---	---	---	7.6	7.4	7.5	6.5	5.6	5.9	6.5	5.7	6.0
30	---	---	---	7.5	7.2	7.4	6.0	5.4	5.7	6.4	5.7	6.1
31	---	---	---	7.5	7.2	7.3	---	---	---	6.1	5.3	5.6
MONTH	9.8	7.1	8.5	---	---	---	9.5	5.4	7.3	7.8	4.7	6.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6.4	5.2	5.8	7.3	6.6	6.9	7.9	5.9	6.7	6.3	5.5	5.8
2	6.4	5.1	5.8	7.4	6.6	6.9	7.8	5.9	6.6	6.4	5.2	5.7
3	6.7	5.3	5.9	7.2	6.5	6.8	8.0	5.6	6.6	6.1	4.9	5.5
4	7.1	5.5	6.2	7.5	6.6	6.9	8.2	5.7	6.5	6.5	4.8	5.5
5	7.3	5.7	6.5	7.5	6.5	7.0	6.4	5.5	6.0	6.8	5.0	5.9
6	8.1	6.8	7.5	7.4	6.7	6.9	7.2	5.6	6.2	6.4	5.1	5.6
7	7.5	5.8	6.6	7.6	6.4	7.0	6.3	5.2	5.7	6.8	5.2	5.8
8	8.2	5.8	6.8	7.9	6.6	7.1	6.9	5.1	5.9	7.2	5.7	6.2
9	8.2	6.3	7.2	8.0	6.6	7.2	6.9	5.7	6.2	6.6	5.9	6.3
10	9.2	6.2	7.5	7.8	6.6	7.2	6.8	5.6	6.2	6.4	6.0	6.3
11	8.6	6.8	7.6	7.6	4.6	6.5	6.6	5.6	6.0	7.1	5.7	6.3
12	8.9	6.6	7.4	7.2	6.1	6.6	6.8	5.5	6.0	7.3	6.1	6.6
13	7.9	6.5	7.2	6.6	5.7	6.2	6.9	5.6	6.1	7.4	6.2	6.7
14	7.8	6.4	6.9	6.7	5.8	6.3	7.0	5.4	6.1	7.7	6.2	6.9
15	7.8	6.2	6.8	6.5	5.6	6.1	7.2	5.6	6.3	7.7	6.2	6.9
16	7.3	6.9	7.2	6.6	5.4	6.1	6.9	5.5	6.2	7.6	6.2	6.9
17	7.6	7.2	7.5	6.5	5.7	6.2	7.0	5.4	6.1	7.7	6.4	7.0
18	7.5	6.8	7.1	6.7	5.8	6.3	7.0	5.4	6.1	8.1	6.5	7.1
19	7.7	6.5	6.8	6.5	5.6	6.1	7.0	5.4	6.1	8.2	6.7	7.3
20	7.9	6.1	7.3	6.7	5.5	6.0	6.6	5.7	6.1	8.4	6.7	7.3
21	8.2	7.5	7.9	7.0	5.7	6.4	6.8	5.3	6.1	8.4	6.8	7.4
22	7.9	7.0	7.6	7.2	6.1	6.7	6.7	5.4	6.0	8.5	7.0	7.6
23	7.7	7.0	7.3	7.5	6.1	6.8	6.4	5.4	5.9	8.6	6.4	7.2
24	7.5	7.1	7.4	8.4	6.2	7.3	6.6	5.8	6.1	8.0	6.5	7.0
25	7.5	7.0	7.2	8.4	6.4	7.4	6.3	5.9	6.1	7.7	6.3	6.8
26	7.3	7.0	7.2	8.0	7.2	7.7	6.2	5.6	5.9	7.8	6.0	6.8
27	7.6	7.1	7.2	7.9	6.3	7.1	6.2	5.4	5.9	7.4	6.1	6.6
28	7.4	7.1	7.3	7.8	6.2	6.8	6.3	5.5	6.0	7.3	6.0	6.5
29	7.4	7.0	7.2	7.9	6.2	6.8	6.5	5.6	6.0	7.5	6.0	6.7
30	7.8	7.0	7.4	7.9	6.0	6.8	6.4	5.7	6.0	7.9	6.6	7.1
31	---	---	---	8.0	5.9	6.7	6.3	5.6	5.9	---	---	---
MONTH	9.2	5.1	7.0	8.4	4.6	6.7	8.2	5.1	6.1	8.6	4.8	6.6

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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 mi^2.

PERIOD OF RECORD.--Apr 1925 to current year.
Water-quality records.--Chemical data: Apr 1959. Biochemical data: May 1965 to Sep 1981, Oct 1986 to Aug 1995. Sediment data: Jan 1987 to Sep 1996. Specific conductance: Jan 1987 to Sep 1996. pH: Jan 1987 to Sep 1996. Water temperature: Jan 1987 to Sep 1996. Dissolved oxygen: Jan 1987 to Sep 1996.

REVISED RECORDS.--WSP 1732: 1947(M). WSP 1923: Drainage area. WDR TX-87-3: 1983-84.

GAGE.--Water-stage recorder. Datum of gage is 285.49 ft above sea level. 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 by Medina Lake (station 08179500, normal storage 254,000 acre-ft) and Olmos flood-control reservoir (combined capacity of 269,500 acre-ft). Storage began in Medina Lake in 1913 and Olmos Dam was completed in 1926. Additional regulation by Calaveras Lake on Calaveras Creek and by Brauning Lake. Flow from Brauning Lake enters the San Antonio River above the station near Elmendorf, and flow from Calaveras Creek enters the San Antonio River some distance downstream from the station near Elmendorf. Records provided by the San Antonio City Public Service Board show that during the current year, 13,080 acre-ft of water was released into Calaveras Creek from Calaveras Lake and that 771 acre-ft was released from Brauning Lake. Flow is also regulated by eleven Soil Conservation Service floodwater-retarding structures (combined capacity of 26,770 acre-ft). Floodwater-retarding structures were completed in 1972. Some diversions for municipal uses and irrigation above station (amount unknown).

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 Sep 29, 1946.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	252	1050	967	657	490	347	551	398	332	318	181	198
2	242	1870	943	655	492	338	492	342	318	326	163	185
3	236	2100	933	635	483	338	411	326	306	305	156	149
4	227	1420	936	631	471	330	412	371	261	295	161	146
5	226	1160	916	641	470	322	414	365	246	292	159	165
6	487	1310	888	642	473	323	e410	333	248	471	247	140
7	1630	1310	871	622	471	329	408	319	240	373	253	136
8	1400	1230	856	604	471	330	353	309	232	323	195	146
9	552	1280	833	601	462	322	376	305	223	312	176	249
10	395	1200	825	575	449	328	349	307	216	303	168	202
11	340	1160	839	556	420	335	362	751	211	293	197	194
12	324	1110	878	595	406	345	367	1010	209	866	208	182
13	311	1110	836	592	422	357	346	514	204	903	177	173
14	311	1510	810	577	383	414	346	406	229	552	152	170
15	301	2000	806	573	372	469	336	398	286	331	149	170
16	292	1920	795	569	367	403	344	377	419	308	144	150
17	293	1440	783	563	378	415	330	374	1040	278	143	153
18	2490	1280	767	555	366	401	316	375	681	287	149	164
19	26300	1230	759	553	360	401	309	630	471	314	148	175
20	63600	1190	752	550	353	479	314	734	329	313	144	176
21	43000	1170	739	540	351	556	321	493	934	370	202	180
22	16600	1130	717	538	344	473	312	417	1810	280	200	187
23	4810	1120	720	535	341	426	307	374	2000	256	151	182
24	e3000	1100	716	526	346	411	308	352	1190	250	158	180
25	e2100	1080	710	520	346	356	305	337	822	226	251	178
26	1500	1050	689	519	344	321	344	336	1010	209	610	177
27	1360	1020	669	518	348	323	614	306	546	197	331	171
28	1240	994	671	508	349	1780	733	861	514	198	212	175
29	1160	984	669	504	---	2080	525	657	412	185	173	182
30	1170	974	665	505	---	1430	431	379	356	184	157	175
31	1120	---	664	496	---	695	---	371	---	176	156	---
TOTAL	177269	38502	24622	17655	11328	16177	11746	13827	16295	10294	6071	5210
MEAN	5718	1283	794	570	405	522	392	446	543	332	196	174
MAX	63600	2100	967	657	492	2080	733	1010	2000	903	610	249
MIN	226	974	664	496	341	321	305	305	204	176	143	136
AC-FT	351600	76370	48840	35020	22470	32090	23300	27430	32320	20420	12040	10330

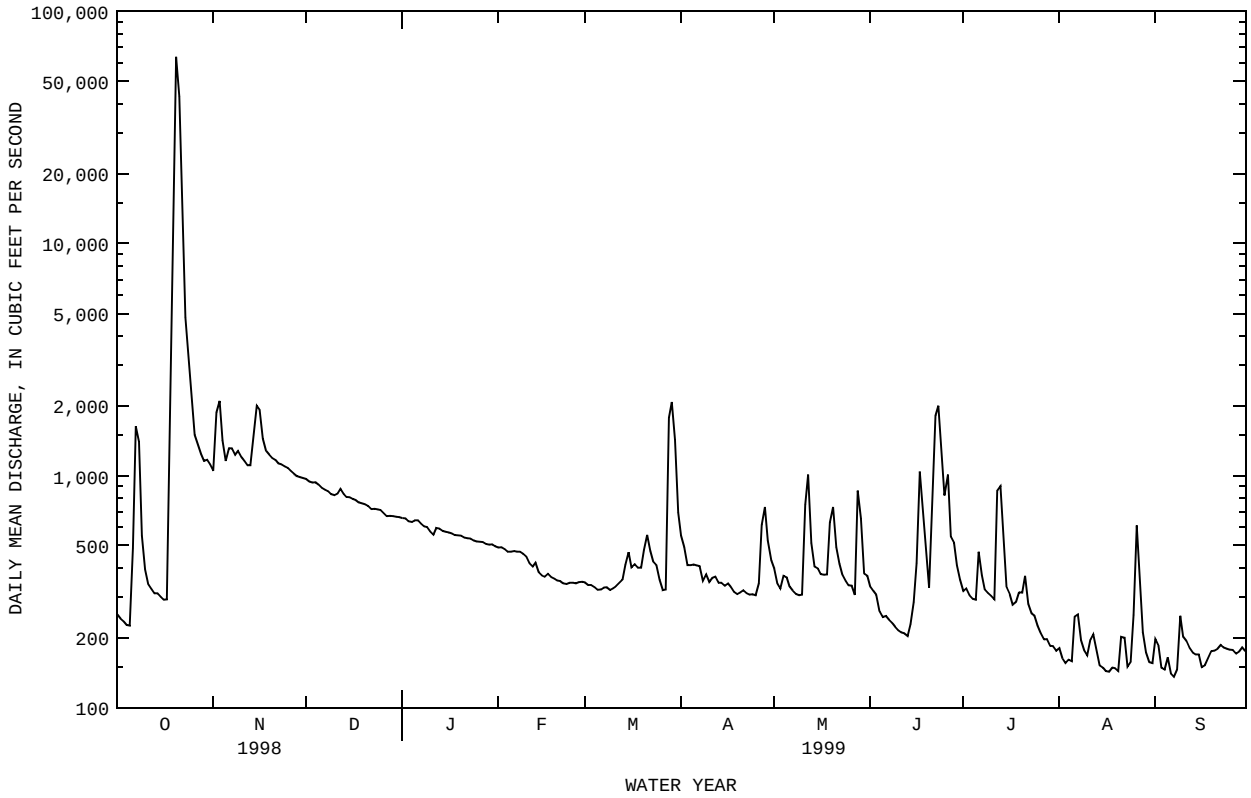
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1999, BY WATER YEAR (WY)

MEAN	495	381	375	406	462	393	461	624	754	418	294	475
MAX	5718	1592	2668	2705	4803	3536	2615	4303	10120	3662	1564	4100
(WY)	1999	1977	1992	1968	1992	1992	1992	1992	1987	1973	1978	1946
MIN	57.5	67.3	70.6	89.0	94.9	75.6	61.2	84.7	38.0	55.3	40.4	57.7
(WY)	1956	1956	1955	1957	1956	1956	1956	1956	1956	1954	1954	1930

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1925 - 1999	
ANNUAL TOTAL	365674		348996			
ANNUAL MEAN	1002		956		463	
HIGHEST ANNUAL MEAN					2253	1992
LOWEST ANNUAL MEAN					92.0	1956
HIGHEST DAILY MEAN	63600	Oct 20	63600	Oct 20	63600	Oct 20 1998
LOWEST DAILY MEAN	75	Aug 1	136	Sep 7	19	Jun 27 1956
ANNUAL SEVEN-DAY MINIMUM	81	Jul 30	147	Aug 14	23	Jun 8 1956
INSTANTANEOUS PEAK FLOW			70000	Oct 20	c70000	Oct 20 1998
INSTANTANEOUS PEAK STAGE			p33.60	Oct 20	p33.80	Sep 29 1946
ANNUAL RUNOFF (AC-FT)	725300		692200		335400	
10 PERCENT EXCEEDS	1230		1160		828	
50 PERCENT EXCEEDS	413		378		249	
90 PERCENT EXCEEDS	124		177		92	

e Estimated
c From rating curve extended above current meter measurement of 36,500 ft^3/s.
p Observed.



08183850 CIBOLO CREEK AT IH-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 mi^2.

PERIOD OF RECORD.--Oct 1995 to current year. Discharge measurements only prior to May 1996.

GAGE.--Water-stage recorder. Datum of gage is 1,428.5 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. No known diversion above station. Since installation of gage in Oct 1995, flow regulated by Boerne Lake Reservoir (capacity 4,043 acre-ft).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	95	27	12	12	7.9	7.1	2.4	3.0	3.3	3.8	.68
2	1.9	73	27	12	11	7.9	7.1	2.9	2.6	2.6	3.7	.77
3	1.7	51	26	10	10	6.3	6.9	3.6	2.5	2.0	2.8	.66
4	1.7	43	24	9.5	9.9	5.1	6.5	3.8	2.6	1.9	5.7	.67
5	1.6	56	24	9.3	11	4.9	6.5	3.1	2.6	3.2	10	.65
6	27	47	23	10	11	4.3	4.4	2.0	2.4	3.5	8.6	.66
7	12	51	21	10	10	4.5	4.1	1.5	2.4	4.0	6.5	.74
8	9.2	48	18	11	9.6	5.5	4.2	1.5	2.3	3.1	5.1	.70
9	7.3	46	16	10	9.7	5.1	4.2	1.9	2.2	2.6	3.1	.60
10	5.8	43	24	9.4	9.3	4.3	4.1	13	2.1	2.3	2.1	.51
11	5.0	38	25	10	9.9	4.1	2.8	7.8	2.0	168	1.7	.48
12	4.6	39	20	11	7.4	4.9	2.4	7.4	2.2	119	1.6	.47
13	4.2	44	18	10	6.5	6.9	2.7	6.7	2.0	55	1.5	.44
14	3.8	76	16	10	6.9	4.5	3.5	6.5	1.0	35	1.3	.36
15	3.2	76	15	9.5	6.9	3.3	3.7	6.2	1.3	24	1.2	.39
16	3.1	65	15	8.7	6.7	3.3	1.6	6.1	1.6	18	.87	.37
17	21	59	14	9.0	7.2	3.1	1.5	5.9	1.6	15	.74	.34
18	97	55	14	8.4	6.9	7.7	1.5	7.8	1.6	13	.80	.39
19	83	52	14	8.7	6.6	12	1.5	6.7	1.7	11	.71	.43
20	57	49	14	9.1	7.2	8.6	1.7	6.4	17	11	.64	.45
21	43	44	15	10	7.3	6.4	1.6	5.5	40	10	.70	.44
22	35	41	13	11	6.2	5.7	1.7	5.1	33	10	.78	.45
23	31	40	11	9.3	7.0	5.0	1.7	4.6	23	8.3	.79	.52
24	28	38	11	8.9	7.6	4.8	1.4	4.4	14	8.1	1.2	.60
25	24	37	10	8.8	8.5	4.9	2.4	4.0	10	7.5	.75	.66
26	23	35	11	9.8	9.2	4.6	7.0	3.0	8.3	6.3	.70	.60
27	22	34	11	10	9.8	7.0	5.8	2.5	7.4	6.2	e.80	.46
28	20	33	11	12	8.3	16	4.5	2.4	5.2	6.4	e.90	.41
29	18	32	11	12	---	11	3.4	2.7	4.5	5.9	e1.0	.36
30	17	30	11	12	---	8.5	3.3	2.7	4.4	4.7	e.90	.35
31	16	---	11	11	---	7.4	---	2.9	---	4.0	.68	---
TOTAL	629.0	1470	521	312.4	239.6	195.5	110.8	143.0	206.5	574.9	71.66	15.61
MEAN	20.3	49.0	16.8	10.1	8.56	6.31	3.69	4.61	6.88	18.5	2.31	.52
MAX	97	95	27	12	12	16	7.1	13	40	168	10	.77
MIN	1.6	30	10	8.4	6.2	3.1	1.4	1.5	1.0	1.9	.64	.34
AC-FT	1250	2920	1030	620	475	388	220	284	410	1140	142	31

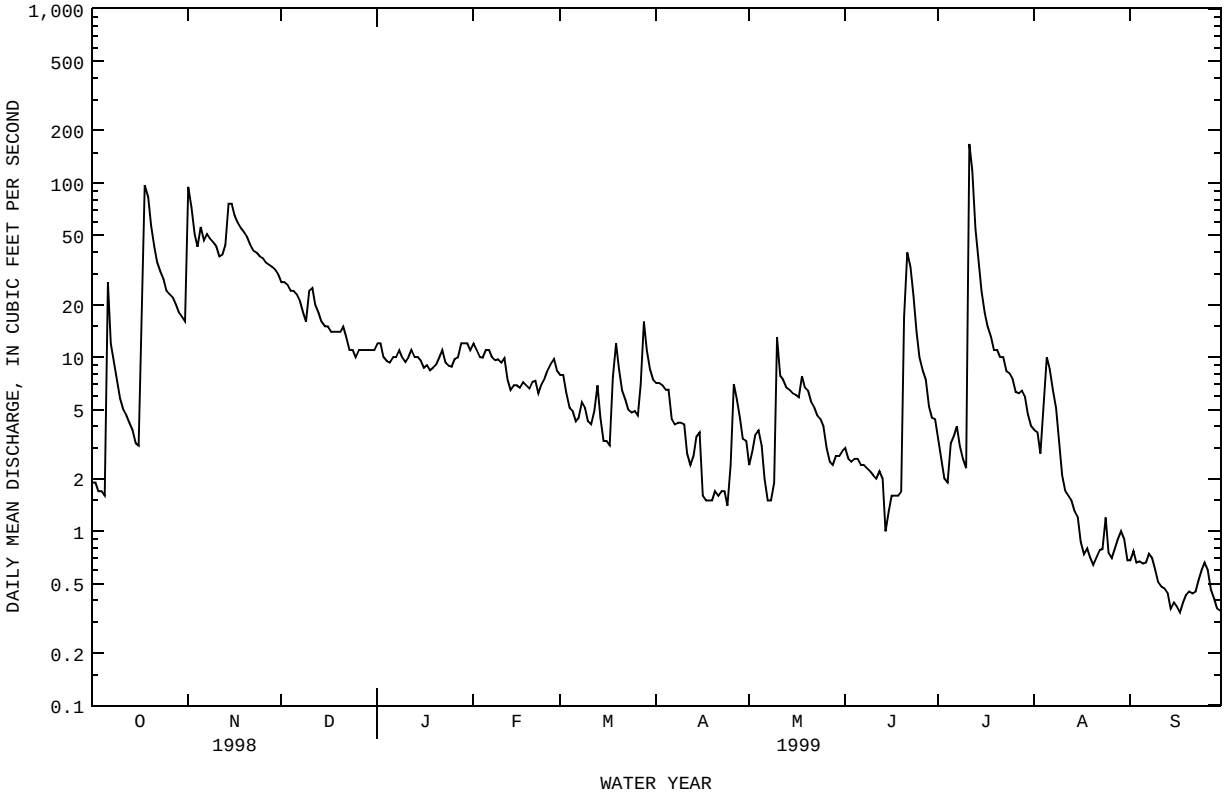
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1999, BY WATER YEAR (WY)

MEAN	7.96	17.1	7.43	5.27	10.6	30.0	26.0	10.7	81.0	14.4	4.68	2.21
MAX	20.3	49.0	16.8	10.1	20.9	73.8	56.8	22.5	313	38.5	9.12	5.55
(WY)	1999	1999	1999	1999	1998	1998	1997	1997	1997	1997	1998	1998
MIN	.24	.30	.64	.58	2.24	6.31	3.69	4.61	.48	.066	.25	.44
(WY)	1997	1997	1997	1997	1997	1999	1999	1999	1996	1996	1996	1996

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1996 - 1999	
ANNUAL TOTAL	6898.16		4489.97			
ANNUAL MEAN	18.9		12.3		20.8	
HIGHEST ANNUAL MEAN					37.6	1997
LOWEST ANNUAL MEAN					12.3	1999
HIGHEST DAILY MEAN	753	Mar 16	168	Jul 11	e4940	Jun 22 1997
LOWEST DAILY MEAN	.13	Aug 2	.34	Sep 17	.00	Jul 23 1996
ANNUAL SEVEN-DAY MINIMUM	.15	Jul 28	.39	Sep 13	.00	Aug 3 1996
INSTANTANEOUS PEAK FLOW			296	Jul 11	i20100	Jun 22 1997
INSTANTANEOUS PEAK STAGE			2.45	Jul 11	a20.82	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	13680		8910		15080	
10 PERCENT EXCEEDS	41		34		31	
50 PERCENT EXCEEDS	9.2		6.6		3.5	
90 PERCENT EXCEEDS	.55		.76		.19	

e Estimated
i From indirect measurement of peak flow.
a From floodmark.

08183850 CIBOLO CREEK AT IH-10 ABOVE BOERNE, TX--Continued



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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Mar 1946 to current year. Figures for water year 1960 in WSP 1813 are in error and should be disregarded.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 728.34 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are poor. One known diversion above station. Since water year 1980, at least 10% of contributing drainage area has been regulated by Boerne Lake Reservoir (capacity 4,043 acre-ft). 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 Selma (station 08183850). Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--33 years (water years 1947-79), 15.3 ft^3/s (11,080 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1947-79).--Maximum discharge, 65,000 ft^3/s Jul 16, 1973 (gage height, 26.2 ft, from floodmark), from rating curve extended above 16,000 ft^3/s on basis of field estimate of 54,000 ft^3/s and contracted-opening measurement of 65,000 ft^3/s; no flow most of time.

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 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	3.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.66	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	e32000	4.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	e18000	37	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	e1300	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	806	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	445	6.2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	280	.94	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	190	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00
24	132	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00
25	91	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00
26	61	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	40	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	15	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	6.7	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	1.6	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	53394.30	92.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	1722	3.10	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	32000	37	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	105900	184	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

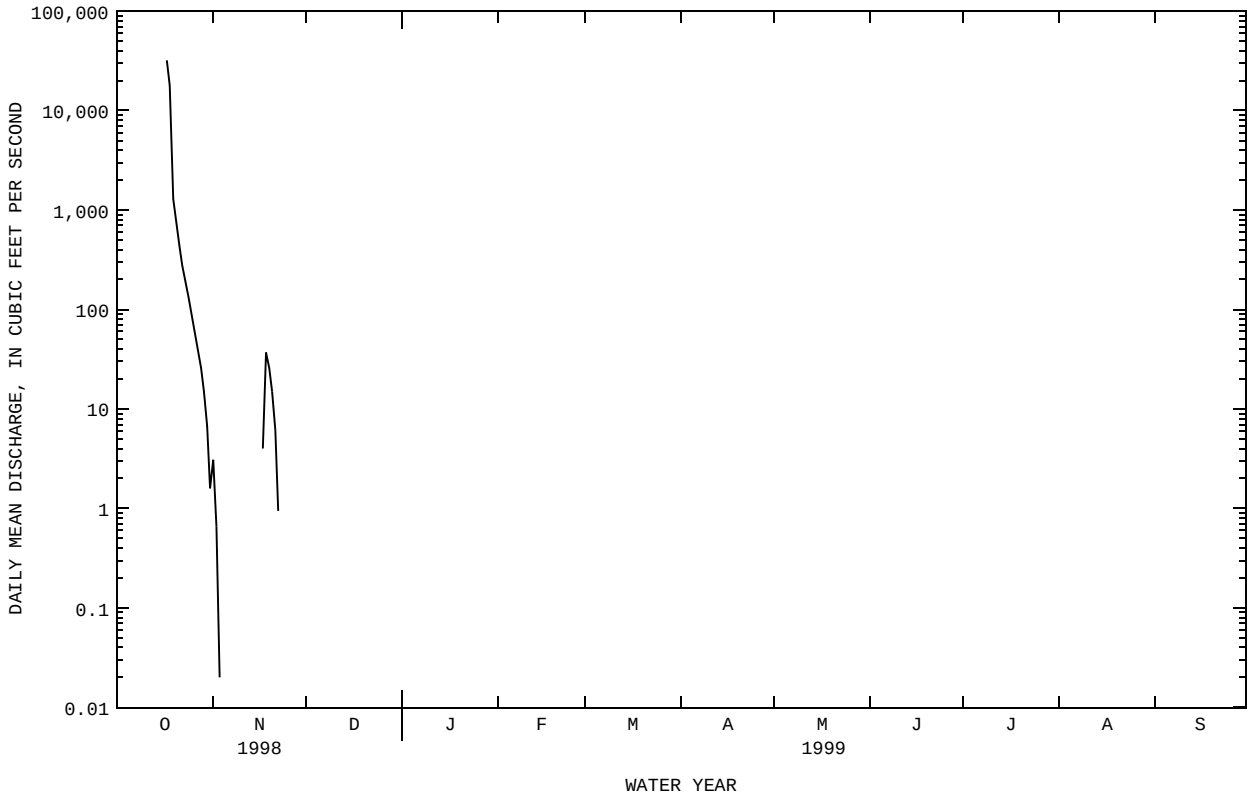
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1999z, BY WATER YEAR (WY)

MEAN	86.6	.68	62.4	3.87	33.2	33.0	4.13	32.8	183	3.85	.076	.021
MAX	1722	6.35	1143	76.9	646	483	75.5	494	1567	44.7	1.52	.35
(WY)	1999	1982	1992	1992	1992	1992	1991	1992	1997	1985	1997	1996
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1981

08185000 CIBOLO CREEK AT SELMA, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1980-1999z	
ANNUAL TOTAL	58943.72		53487.22			
ANNUAL MEAN	161		147		36.9	
HIGHEST ANNUAL MEAN					257	
LOWEST ANNUAL MEAN					.000	1992
HIGHEST DAILY MEAN	32000	Oct 17	32000	Oct 17	32000	Oct 17, 1998
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1, 1979
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 1, 1979
INSTANTANEOUS PEAK FLOW			c98100	Oct	c98100	Oct 17, 1998
INSTANTANEOUS PEAK STAGE			a35.37	Oc17	a35.37	Oct 17, 1998
ANNUAL RUNOFF (AC-FT)	116900		106100		26700	
10 PERCENT EXCEEDS	.00		.00		.00	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
c From rating curve extended above indirect measurement of 69,600 ft^3/s.
a From floodmark.
z Period of regulated streamflow.



08185000 CIBOLO CREEK AT SELMA, TX--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--Feb 1988 to current year. Unpublished records Feb 1988 to Sep 1998.

INSTRUMENTATION.--Recording tipping bucket rain gage at site.

REMARKS.--Records good.

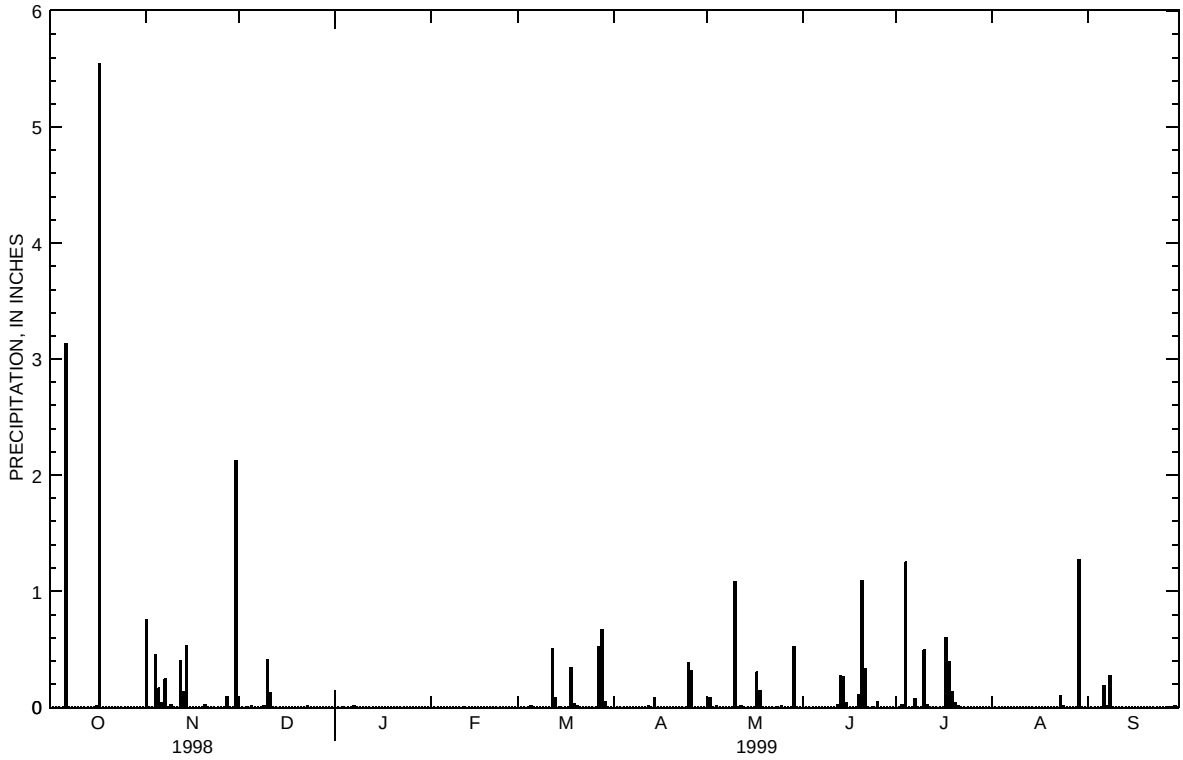
EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 5.54 in., Oct 17.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.75	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
4	.00	.45	.00	.00	.00	.00	.00	.01	.00	1.25	.00	.00
5	.00	.16	.01	.00	.00	.01	.00	.00	.00	.00	.00	.00
6	3.13	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.18
7	.00	.24	.00	.01	.00	.00	.00	.00	.00	.07	.00	.01
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27
9	.00	.02	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.41	.00	.00	.00	.00	1.08	.00	.49	.00	.00
11	.00	.00	.12	.00	.00	.00	.00	.00	.00	.02	.00	.00
12	.00	.40	.00	.00	.00	.50	.01	.01	.02	.00	.00	.00
13	.00	.13	.00	.00	.00	.08	.00	.00	.27	.00	.00	.00
14	.00	.53	.00	.00	.00	.00	.08	.00	.26	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00
16	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	>5.54	.00	.00	.00	.00	.00	.00	.30	.00	.60	.00	.00
18	---	.00	.00	.00	.00	.34	.00	.14	.00	.39	.00	.00
19	---	.00	.00	.00	.00	.03	.00	.00	.11	.13	.00	.00
20	---	.02	.00	.00	.00	.01	.00	.00	1.09	.04	.00	.00
21	---	.00	.00	.00	.00	.00	.00	.00	.33	.01	.00	.00
22	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.10	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
25	.00	.00	.00	.00	.00	.00	.38	.01	.05	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00	.00	.00
27	.00	.09	.00	.00	.00	.52	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.67	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.05	.00	.52	.00	.00	1.27	.01
30	.00	2.12	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	---	4.95	0.56	0.01	0.00	2.21	0.78	2.15	2.17	3.02	1.38	0.47
MAX	---	2.12	.41	.01	.00	.67	.38	1.08	1.09	1.25	1.27	.27
MIN	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

> Actual value is known to be greater than the value shown

08185000 CIBOLO CREEK AT SELMA, TX--Continued



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 mi^2.

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 Sep 1996. Biochemical data: Dec 1969 to Sep 1996. Sediment data: 1960, Nov 1965 to May 1975. Specific conductance: Oct 1968 to Sep 1991. Water temperature: Oct 1968 to Sep 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 sea level. Nov 4, 1930 to Aug 4, 1940, water-stage recorder at site 1,600 ft upstream at datum 0.56 ft higher. Aug 5 to Sep 13, 1940, nonrecording gage at site 150 ft to the left at same datum. Sep 14, 1940 to Mar 15, 1990, water-stage recorder at site 150 ft to the left at same datum. Mar 16, 1990 to Jul 15, 1993, water-stage recorder at site 50 ft downstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. There are several diversions for irrigation above station. Much of the base flow is effluent from the Carrizo Sands in the vicinity of Sutherland Springs. Flow is affected at times by discharge from the flood-detention pools of ten floodwater-retarding structures with a combined detention capacity of 16,620 acre-ft. These structures control runoff from 62.9 mi^2.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 35 ft occurred in Oct 1913 (discharge, about 35,000 ft^3/s). Maximum stage since at least 1890, that of Sep 28, 1973.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 19	0700	51,200	a39.84	Jun 25	2315	9,760	a23.28

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	306	107	67	58	54	73	40	50	e63	27	18
2	20	332	108	72	58	57	65	39	42	e59	26	20
3	20	337	107	80	58	56	59	46	39	e57	26	21
4	20	276	106	69	58	53	58	45	36	e55	26	19
5	20	249	101	65	59	52	54	41	34	e52	25	18
6	1130	253	100	66	60	52	50	40	33	e50	25	19
7	1150	249	97	73	60	49	49	39	33	48	24	23
8	319	231	91	71	59	51	48	42	32	47	24	20
9	140	227	92	59	59	49	44	37	31	48	23	20
10	89	212	92	59	58	53	44	41	31	43	22	24
11	69	194	95	60	58	55	44	64	30	46	22	22
12	58	187	98	61	53	55	43	91	29	97	22	18
13	50	200	102	60	55	58	44	68	28	119	21	18
14	44	1260	100	60	55	52	42	57	33	83	20	19
15	39	1560	93	59	59	48	42	52	38	59	19	19
16	35	628	91	58	68	46	40	47	34	46	19	19
17	42	292	88	58	63	47	40	43	32	44	19	18
18	8380	211	86	55	64	47	39	44	32	40	20	17
19	45000	178	86	57	63	50	39	42	36	38	19	17
20	27500	157	83	61	61	52	41	44	40	40	19	16
21	8780	141	83	62	61	49	42	52	49	55	18	15
22	1970	136	79	59	59	50	42	49	112	55	19	15
23	1180	135	76	56	59	51	42	45	275	48	21	14
24	885	133	79	56	60	50	46	40	118	41	25	14
25	730	126	76	55	60	49	45	37	1290	37	24	15
26	635	124	75	57	57	44	50	36	3120	34	22	15
27	576	118	76	58	56	49	47	226	202	32	22	15
28	519	112	75	62	59	670	47	180	97	31	21	15
29	464	108	74	63	---	134	46	84	73	30	20	16
30	406	106	69	60	---	105	42	52	e67	29	19	16
31	347	---	68	61	---	85	---	44	---	28	17	---
TOTAL	100639	8778	2753	1919	1657	2372	1407	1807	6096	1554	676	535
MEAN	3246	293	88.8	61.9	59.2	76.5	46.9	58.3	203	50.1	21.8	17.8
MAX	45000	1560	108	80	68	670	73	226	3120	119	27	24
MIN	20	106	68	55	53	44	39	36	28	28	17	14
AC-FT	199600	17410	5460	3810	3290	4700	2790	3580	12090	3080	1340	1060

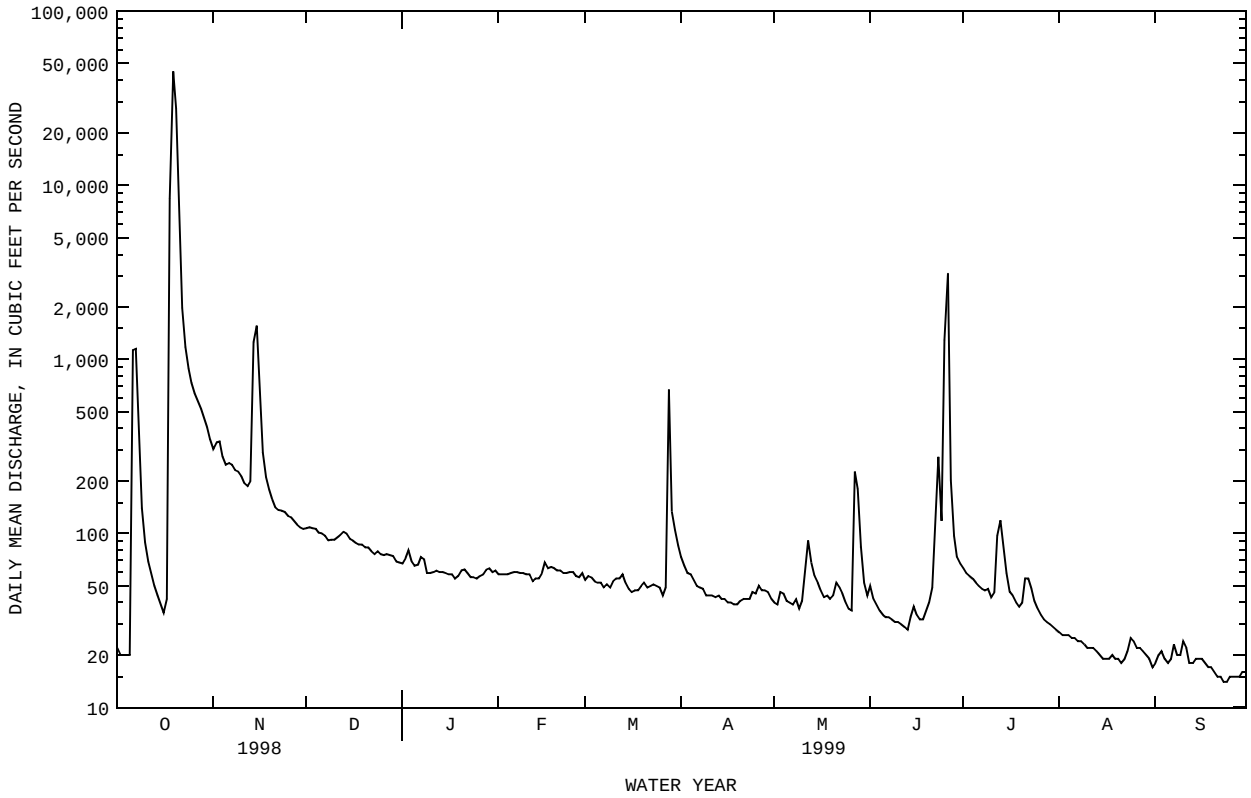
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1999, BY WATER YEAR (WY)

MEAN	147	86.7	100	94.1	113	69.5	161	242	261	97.3	53.7	152
MAX	3246	565	2156	1627	1756	860	1492	2230	2821	1357	909	1579
(WY)	1999	1941	1992	1968	1992	1992	1977	1972	1987	1942	1946	1973
MIN	8.49	8.08	9.99	10.3	9.64	7.04	5.23	4.59	1.74	1.96	2.40	5.41
(WY)	1932	1932	1955	1956	1956	1956	1971	1971	1967	1971	1956	1984

08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1931 - 1999	
ANNUAL TOTAL	129159.8		130193			
ANNUAL MEAN	354		357		131	
HIGHEST ANNUAL MEAN					717	1992
LOWEST ANNUAL MEAN					10.4	1956
HIGHEST DAILY MEAN	45000	Oct 19	45000	Oct 19	45000	Oct 19 1998
LOWEST DAILY MEAN	4.8	Aug 2	14	Sep 23	.00	Jul 30 1956
ANNUAL SEVEN-DAY MINIMUM	5.9	Jul 28	15	Sep 21	.00	Aug 4 1956
INSTANTANEOUS PEAK FLOW			c51200	Oct 19	c51200	Oct 19 1998
INSTANTANEOUS PEAK STAGE			a39.84	Oct 19	a39.84	Oct 19 1998
ANNUAL RUNOFF (AC-FT)	256200		258200		95140	
10 PERCENT EXCEEDS	251		211		125	
50 PERCENT EXCEEDS	37		53		27	
90 PERCENT EXCEEDS	13		20		9.8	

e Estimated
a From floodmark.
c From rating curve extended above current-meter discharge measurements of 27,800 ft^3/s and 31,400 ft^3/s.



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 mi^2.

PERIOD OF RECORD.--Jun 1924 to Mar 1929, Feb 1939 to current year.
Water-quality records.--Chemical data: Dec 1941 to Dec 1942, Nov 1944 to Sep 1946, Sep 1958 to Sep 1996. Biochemical data: Jan 1968 to Sep 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 sea level. 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. There are many diversions and regulations above station. Flow is affected at times by discharge from the flood-detention pools of 36 floodwater-retarding structures, with a combined detention capacity of 66,730 acre-ft. These structures control runoff from 213 mi^2 in the drainage area above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in Oct 1913 and Jun 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 Sep 23, 1967. Maximum stage since 1869, that of Sep 23, 1967. Flood of Jul 9, 1942, reached a stage of 44.9 ft.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 22	1230	59,200	a51.78	Jun 28	0215	6,560	24.81
Nov 15	0200	6,770	25.20				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	338	1820	1180	834	678	506	1190	614	518	690	263	217
2	334	1700	1190	837	670	505	831	544	496	600	255	209
3	289	1730	1160	850	666	502	726	508	460	546	253	241
4	278	2410	1120	856	667	489	669	464	440	543	241	236
5	270	2160	1120	802	660	489	598	452	423	504	232	214
6	774	1750	1110	808	651	487	582	490	377	490	230	214
7	2040	1620	1120	809	652	478	573	476	353	485	228	219
8	2860	1740	1060	797	653	475	564	447	349	599	292	201
9	2460	1620	1020	776	648	480	554	437	341	519	320	196
10	1010	1620	1020	753	647	482	513	428	330	465	260	193
11	600	1570	e1000	750	641	473	524	423	319	446	238	273
12	487	1510	1000	718	619	477	499	456	313	451	228	256
13	436	1610	1000	720	591	483	509	966	306	575	243	236
14	411	4540	1030	729	580	495	508	906	303	947	260	222
15	391	6190	986	723	590	503	490	628	316	901	241	213
16	379	4900	965	721	557	559	481	542	341	647	215	209
17	366	3700	969	737	555	581	471	524	399	500	206	209
18	3720	2390	946	730	557	540	474	563	625	462	202	196
19	8640	1830	927	736	550	550	462	521	901	425	204	191
20	10900	1640	954	730	537	548	448	523	728	428	203	198
21	34100	1540	919	726	528	548	440	771	644	459	200	209
22	55800	1460	934	725	520	621	443	738	650	462	199	208
23	43300	1410	909	715	513	652	447	597	1310	521	234	213
24	29500	1380	897	712	508	593	439	534	1860	419	277	216
25	17000	1350	895	709	507	558	436	492	1670	387	234	215
26	5970	1320	892	700	511	538	491	468	1340	362	226	214
27	2750	1290	877	697	510	489	474	454	5130	328	326	214
28	2380	1260	849	697	505	528	531	455	4770	303	596	215
29	2180	1250	830	696	---	1650	727	677	1270	286	408	213
30	1980	1200	810	687	---	2440	748	996	845	282	285	216
31	1890	---	832	680	---	1970	---	697	---	270	237	---
TOTAL	233833	61510	30521	23160	16471	20689	16842	17791	28127	15302	8036	6476
MEAN	7543	2050	985	747	588	667	561	574	938	494	259	216
MAX	55800	6190	1190	856	678	2440	1190	996	5130	947	596	273
MIN	270	1200	810	680	505	473	436	423	303	270	199	191
AC-FT	463800	122000	60540	45940	32670	41040	33410	35290	55790	30350	15940	12850

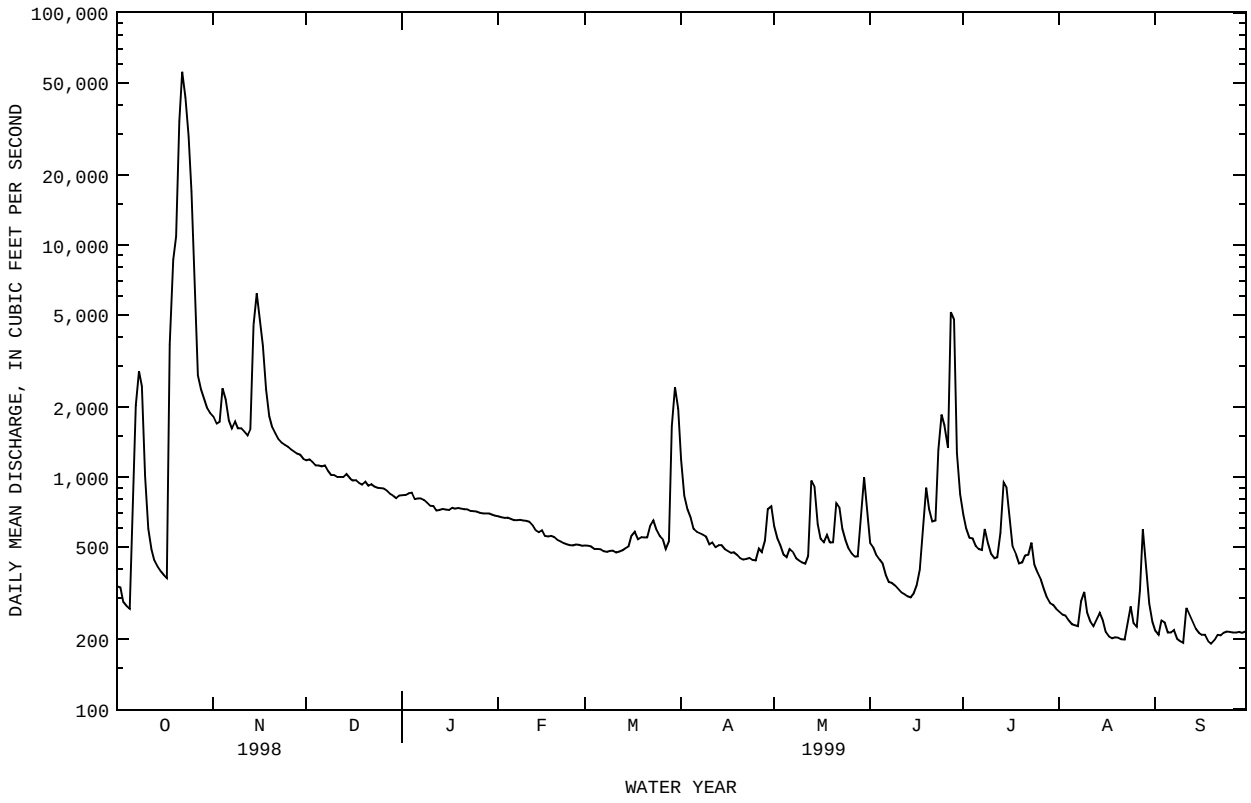
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1999h, BY WATER YEAR (WY)

MEAN	854	605	536	571	690	531	756	1056	1178	600	394	900
MAX	7543	2574	4628	4309	7682	4379	4488	6169	15370	4723	1736	12050
(WY)	1999	1941	1992	1968	1992	1992	1992	1992	1987	1973	1978	1967
MIN	75.1	76.2	86.5	104	107	83.9	86.8	137	26.2	52.4	47.9	66.8
(WY)	1956	1956	1955	1956	1956	1956	1956	1971	1956	1956	1963	1954

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1924 - 1999h	
ANNUAL TOTAL	480081		478758			
ANNUAL MEAN	1315		1312		729	
HIGHEST ANNUAL MEAN					3289	1992
LOWEST ANNUAL MEAN					98.2	1956
HIGHEST DAILY MEAN	55800	Oct 22	55800	Oct 22	121000	Sep 23 1967
LOWEST DAILY MEAN	100	Aug 3	191	Sep 19	2.1	Jun 14 1956
ANNUAL SEVEN-DAY MINIMUM	102	Aug 1	203	Sep 16	5.0	Jun 12 1956
INSTANTANEOUS PEAK FLOW			59200	Oct 22	i138000	Sep 23 1967
INSTANTANEOUS PEAK STAGE			a51.78	Oct 22	a53.70	Sep 23 1967
INSTANTANEOUS LOW FLOW			190	Sep 10		
ANNUAL RUNOFF (AC-FT)	952200		949600		528400	
10 PERCENT EXCEEDS	1850		1660		1210	
50 PERCENT EXCEEDS	479		550		331	
90 PERCENT EXCEEDS	154		231		119	

e Estimated
a From floodmark.
h See PERIOD OF RECORD paragraph.
i From indirect measurement of peak flow.



08188600 GBRA CALHOUN CANAL PUMP STATION NEAR LONG MOTT, TX

LOCATION.--Lat 28°30'00", long 96°46'43", Calhoun County, Hydrologic Unit 12100204, at raw water pump station on Goff Bayou, 0.6 mi upstream from State Highway 185, and 1.3 mi northwest of Long Mott.

PERIOD OF RECORD.--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 Jun 30, 1992, nonrecording gage. All at former site 0.5 mi downstream. Satellite telemeter at station.

REMARKS.--Records good. Flow is diverted from Guadalupe River 550 ft upstream from Guadalupe River near Tivoli (station 08188800), and then through a system of canals, Hog Bayou, and Goff Bayou, a distance of 8.2 mi to the pumping station on Goff Bayou.

COOPERATION.--Log of pumping station on Goff Bayou provided by the Guadalupe-Blanco River Authority.

AVERAGE DISCHARGE.--31 years (water years 1969-99), 88.2 ft^3/s (63,610 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 311 ft^3/s Jul 7, 1968; no flow at times in 1968-74 and 1977-99.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	42	69	25	24	51	36	104	139	151	106	144
2	78	25	77	25	23	20	26	107	150	151	116	156
3	80	25	76	25	73	36	26	118	158	155	86	163
4	72	25	53	25	73	26	26	126	e150	149	90	162
5	49	25	7.4	25	73	25	18	122	e146	141	83	165
6	7.6	25	.00	25	75	25	72	142	e152	136	77	151
7	52	25	33	25	75	25	96	168	e151	134	100	142
8	89	25	43	37	72	25	106	141	149	128	101	116
9	85	24	31	25	50	25	133	145	157	132	100	120
10	83	38	34	25	57	39	135	140	156	111	97	118
11	92	40	25	41	42	43	126	132	146	117	104	123
12	65	39	24	50	25	26	113	95	147	142	112	125
13	53	37	23	62	28	85	88	78	131	136	124	125
14	53	28	28	59	49	57	72	90	148	135	125	107
15	46	10	3.5	50	37	38	58	105	147	139	132	111
16	43	26	.00	50	25	44	63	109	147	140	133	112
17	46	23	29	50	12	71	84	112	144	139	124	124
18	27	22	36	50	37	75	84	135	148	137	132	134
19	10	26	25	25	12	75	111	120	156	135	132	110
20	33	10	26	41	20	58	134	132	148	133	113	111
21	.00	.00	26	18	24	51	123	139	134	127	95	107
22	.00	.00	25	10	16	61	105	127	126	127	.00	122
23	.00	31	40	10	41	65	99	130	125	127	.00	e121
24	.00	51	25	.00	39	77	105	141	139	126	86	e144
25	.00	31	25	16	30	60	110	150	126	100	113	e158
26	.00	16	25	41	39	61	64	158	134	93	116	137
27	13	.00	34	41	25	76	33	146	126	86	125	137
28	43	.00	51	24	40	33	42	127	142	87	124	139
29	33	.00	37	.00	---	18	68	131	149	81	123	123
30	32	16	36	.00	---	5.3	67	128	155	102	123	128
31	33	---	42	.00	---	43	---	129	---	102	125	---
TOTAL	1293.60	685.00	1008.90	900.00	1136	1419.3	2423	3927	4326	3899	3217.00	3935
MEAN	41.7	22.8	32.5	29.0	40.6	45.8	80.8	127	144	126	104	131
MAX	92	51	77	62	75	85	135	168	158	155	133	165
MIN	.00	.00	.00	.00	12	5.3	18	78	125	81	.00	107
AC-FT	2570	1360	2000	1790	2250	2820	4810	7790	8580	7730	6380	7810

e Estimated

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08188800 GUADALUPE RIVER NEAR TIVOLI, TX

LOCATION.--Lat 28°30'20", long 96°53'04", Calhoun-Refugio County line, Hydrologic Unit 12100204, on right bank at diversion and saltwater barrier, one orifice located upstream and one downstream, 550 ft downstream from Calhoun County Irrigation Canal intake, 0.4 mi downstream from San Antonio River, 3.5 mi north of Tivoli, and at mile 10.2.

DRAINAGE AREA.--10,128 mi^2.

WATER-STAGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 0.04 ft above sea level.

REMARKS.--Since installation of gage in Sep 1965, at least 10% of contributing drainage area has been regulated by Canyon Lake (station 08167700) and Medina Lake (station 08179500) combined normal storage 640,200 acre-ft. Some regulation by power plants. Many small diversions above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height (upstream from barrier), 14.8 ft Oct 21, 1998; minimum, 1.2 ft Jul 2, 1984, Jan 25, 1990. Maximum gage height (downstream from barrier), 14.7 ft Oct 21, 1998; minimum, 0.5 ft Jul 12, 14, 1967, Mar 25, 1996. Maximum stage since at least 1936, that of Oct 21, 1998.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jul 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), 14.8 ft Oct 21; minimum, 2.1 ft Sep 9, 21: Maximum gage height (downstream from barrier), 14.7 ft Oct 21; minimum, 2.1 ft Aug 21, Sep 8-9, 21.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	5.8	5.8	8.0	8.0	7.6	7.5	7.4	7.1	6.7	6.5	5.9	5.7
2	5.7	5.7	8.0	7.9	7.6	7.5	7.5	7.2	6.7	6.5	5.9	5.7
3	5.7	5.6	7.9	7.8	7.6	7.5	7.4	7.1	6.8	6.5	5.7	5.5
4	5.6	5.6	7.9	7.8	7.6	7.5	7.3	7.0	6.8	6.5	5.9	5.7
5	5.6	5.6	7.9	7.8	7.6	7.5	7.3	7.0	6.8	6.5	5.9	5.7
6	5.9	5.8	7.9	7.9	7.6	7.5	7.3	7.0	6.8	6.5	5.7	5.5
7	7.4	7.3	7.9	7.9	7.6	7.5	7.3	7.0	6.8	6.5	5.8	5.6
8	7.8	7.7	7.9	7.8	7.6	7.5	7.3	6.9	6.8	6.6	6.0	5.8
9	7.9	7.9	7.8	7.7	7.6	7.5	7.3	6.9	6.7	6.6	5.9	5.7
10	8.0	7.9	7.8	7.7	7.6	7.5	7.1	6.7	6.7	6.5	5.8	5.6
11	8.0	7.9	7.8	7.7	7.6	7.5	7.1	6.7	6.7	6.5	5.8	5.6
12	7.9	7.8	8.1	8.0	7.6	7.4	7.1	6.7	6.6	6.4	5.8	5.6
13	7.6	7.6	8.3	8.2	7.5	7.4	7.3	7.1	6.6	6.4	5.8	5.6
14	7.3	7.3	8.6	8.5	7.5	7.4	7.2	7.0	6.5	6.3	5.3	5.0
15	7.0	6.9	9.7	9.6	7.5	7.4	7.0	6.8	6.3	6.2	5.1	4.8
16	6.7	6.7	9.7	9.6	7.5	7.4	6.9	6.7	6.4	6.2	5.1	4.9
17	6.6	6.6	9.4	9.3	7.5	7.4	6.8	6.6	7.0	6.8	5.3	5.1
18	8.0	7.9	9.1	9.0	7.6	7.4	6.7	6.5	7.1	6.9	5.5	5.3
19	8.3	8.2	9.0	8.8	7.6	7.3	7.3	7.1	7.0	6.8	5.5	5.3
20	11.2	11.0	8.9	8.8	7.5	7.3	7.2	7.0	6.8	6.6	5.3	5.1
21	14.8	14.7	8.7	8.6	7.5	7.3	7.2	7.0	6.6	6.4	5.3	5.1
22	14.6	14.4	8.1	8.0	7.5	7.3	7.3	7.1	6.6	6.4	5.5	5.3
23	13.5	13.3	7.9	7.8	7.5	7.2	7.1	6.8	6.6	6.4	5.7	5.5
24	13.4	13.3	7.8	7.7	7.5	7.2	7.0	6.7	6.3	6.1	5.7	5.6
25	12.6	12.4	7.7	7.6	7.5	7.2	7.1	6.8	6.0	5.8	5.7	5.5
26	11.8	11.6	7.7	7.6	7.4	7.2	7.3	6.9	6.0	5.8	5.5	5.4
27	10.9	10.8	7.7	7.5	7.4	7.2	7.3	6.9	6.1	5.9	5.7	5.6
28	10.1	9.9	7.6	7.5	7.4	7.2	7.2	6.9	5.8	5.6	6.0	5.9
29	9.2	9.1	7.7	7.5	7.4	7.1	7.0	6.8	---	---	6.0	5.8
30	8.5	8.4	7.7	7.5	7.4	7.1	6.8	6.6	---	---	7.0	6.8
31	8.1	8.1	---	---	7.4	7.1	6.7	6.5	---	---	7.6	7.4
MAX	14.8	14.7	9.7	9.6	7.6	7.5	7.5	7.2	7.1	6.5	7.6	7.4
MIN	5.6	5.6	7.6	7.5	7.4	7.1	6.7	6.5	5.8	5.6	5.1	4.8

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.9	7.7	5.6	5.5	7.3	7.2	8.0	7.8	3.7	3.6	2.6	2.6
2	7.9	7.7	5.6	5.4	7.3	7.1	7.8	7.7	3.4	3.3	2.7	2.7
3	7.8	7.6	5.5	5.4	7.0	6.8	7.5	7.4	3.2	3.1	2.7	2.7
4	7.6	7.4	5.3	5.2	6.6	6.4	7.3	7.2	2.9	2.8	3.2	3.1
5	7.4	7.2	5.1	5.0	6.3	6.1	7.0	6.8	2.9	2.8	3.2	3.2
6	7.0	6.8	4.8	4.7	5.9	5.8	6.6	6.5	3.2	3.2	2.8	2.8
7	6.7	6.5	4.6	4.5	5.4	5.3	6.4	6.3	3.1	3.1	2.5	2.4
8	6.5	6.3	4.7	4.5	4.7	4.6	6.1	6.0	3.1	3.0	2.4	2.4
9	6.3	6.2	4.7	4.6	4.6	4.4	6.0	5.9	3.1	3.1	2.4	2.4
10	6.2	6.0	4.7	4.6	4.6	4.4	6.0	5.9	3.2	3.1	2.5	2.5
11	5.9	5.7	4.8	4.7	4.5	4.4	5.9	5.8	3.2	3.2	2.6	2.6
12	5.7	5.4	4.9	4.8	4.2	4.1	5.7	5.6	3.2	3.1	2.7	2.7
13	5.7	5.5	4.9	4.8	3.5	3.4	5.4	5.4	3.0	3.0	2.7	2.7
14	5.8	5.7	5.4	5.3	3.4	3.3	5.5	5.4	3.0	2.9	2.7	2.7
15	5.4	5.3	5.8	5.7	3.7	3.6	6.0	5.9	2.6	2.5	2.7	2.7
16	4.9	4.8	5.8	5.6	4.1	4.0	6.1	6.0	2.9	2.8	2.8	2.8
17	5.0	4.8	5.5	5.4	4.4	4.3	6.2	6.0	2.8	2.8	2.7	2.7
18	5.0	4.8	5.4	5.2	4.6	4.4	5.8	5.8	2.6	2.6	2.6	2.6
19	4.8	4.6	5.9	5.8	4.5	4.4	5.3	5.3	2.6	2.6	2.5	2.5
20	4.7	4.6	6.2	6.1	5.6	5.4	5.1	5.1	2.6	2.5	2.5	2.5
21	4.8	4.7	6.4	6.2	5.9	5.8	5.1	5.0	2.5	2.5	2.4	2.4
22	4.9	4.8	6.5	6.3	5.8	5.7	5.0	5.0	2.9	2.9	2.7	2.7
23	4.9	4.8	6.5	6.3	5.6	5.5	4.9	4.9	3.7	3.6	2.9	2.9
24	4.9	4.8	6.4	6.2	6.4	6.3	4.8	4.7	3.3	3.3	2.8	2.8
25	4.7	4.5	6.0	5.8	7.1	7.0	4.6	4.6	3.1	3.0	2.7	2.7
26	4.7	4.6	5.5	5.3	7.6	7.4	4.6	4.5	2.9	2.9	2.8	2.8
27	4.6	4.5	4.9	4.8	7.8	7.6	4.3	4.3	2.8	2.8	2.8	2.8
28	4.9	4.8	4.6	4.4	7.8	7.7	4.2	4.1	2.8	2.8	2.8	2.8
29	4.9	4.8	6.0	5.8	8.0	7.8	4.0	3.9	2.7	2.8	3.0	3.0
30	5.3	5.1	6.7	6.5	8.0	7.8	3.9	3.9	2.9	2.9	2.8	2.8
31	---	---	7.2	7.1	---	---	3.8	3.8	2.8	2.8	---	---
MAX	7.9	7.7	7.2	7.1	8.0	7.8	8.0	7.8	3.7	3.6	3.2	3.2
MIN	4.7	4.5	4.6	4.5	3.4	3.3	3.8	3.8	2.5	2.5	2.4	2.4

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Aug 1965 to Aug 24, 1999 (discontinued).
BIOCHEMICAL DATA: Jan 1968 to Sep 1996.
PESTICIDE DATA: Oct 1970 to Aug 24, 1999 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Aug 1965 to Oct 1982.
WATER TEMPERATURE: Aug 1965 to Oct 1982.

INSTRUMENTATION.--Water-quality monitor Aug 1965 to Oct 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,000 microsiemens, Jun 1, 1971, Aug 3, 1978; minimum daily, 159 microsiemens, Apr 28, 1980.
WATER TEMPERATURE (1965-69, 1981-82): Maximum daily, 32.0°C, on many days during summer months; minimum daily, 8.0°C, Jan 15, 1968.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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 (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)
JAN											
26...	1455	801	7.9	19.5	--	--	280	43	83	18	50
MAR											
02...	1410	856	8.1	21.0	9.7	109	300	58	89	19	56
APR											
16...	1320	817	8.0	23.0	7.7	88	290	56	87	18	57
MAY											
25...	0845	668	7.5	26.0	6.8	84	210	43	60	13	52
JUL											
01...	1135	279	7.0	--	4.5	--	100	--	34	4.0	14
AUG											
24...	0845	790	--	--	5.7	--	260	15	76	18	62

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)
JAN											
26...	1	27	3.0	240	62	69	.30	11	440	--	--
MAR											
02...	1	29	3.7	240	65	82	.35	11	472	--	--
APR											
16...	1	29	4.2	240	61	77	.32	14	462	--	--
MAY											
25...	2	35	5.6	160	53	67	.29	13	363	--	--
JUL											
01...	.6	22	6.3	120	14	15	.17	13	171	--	--
AUG											
24...	2	33	4.3	250	54	82	.35	19	466	<.010	<.010

DATE	SILVEX, TOTAL (UG/L) (39760)	2,4-DP TOTAL (UG/L) (82183)	ALDRIN, TOTAL (UG/L) (39330)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)
JAN											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
02...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
25...	--	--	<.010	<.010	<.100	<.010	<.010	<.010	<.010	<.010	<.010
JUL											
01...	--	--	--	--	--	--	--	--	--	--	--
AUG											
24...	<.010	<.010	<.013	<.010	<.100	<.010	<.010	<.009	<.010	<.014	<.010

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	TOX-APHENE, TOTAL (UG/L) (39400)
JAN										
26...	--	--	--	--	--	--	--	--	--	--
MAR										
02...	--	--	--	--	--	--	--	--	--	--
APR										
16...	--	--	--	--	--	--	--	--	--	--
MAY										
25...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<1.00
JUL										
01...	--	--	--	--	--	--	--	--	--	--
AUG										
24...	<.010	<.011	<.009	<.012	<.010	<.010	<.010	<.010	<.010	<1.00

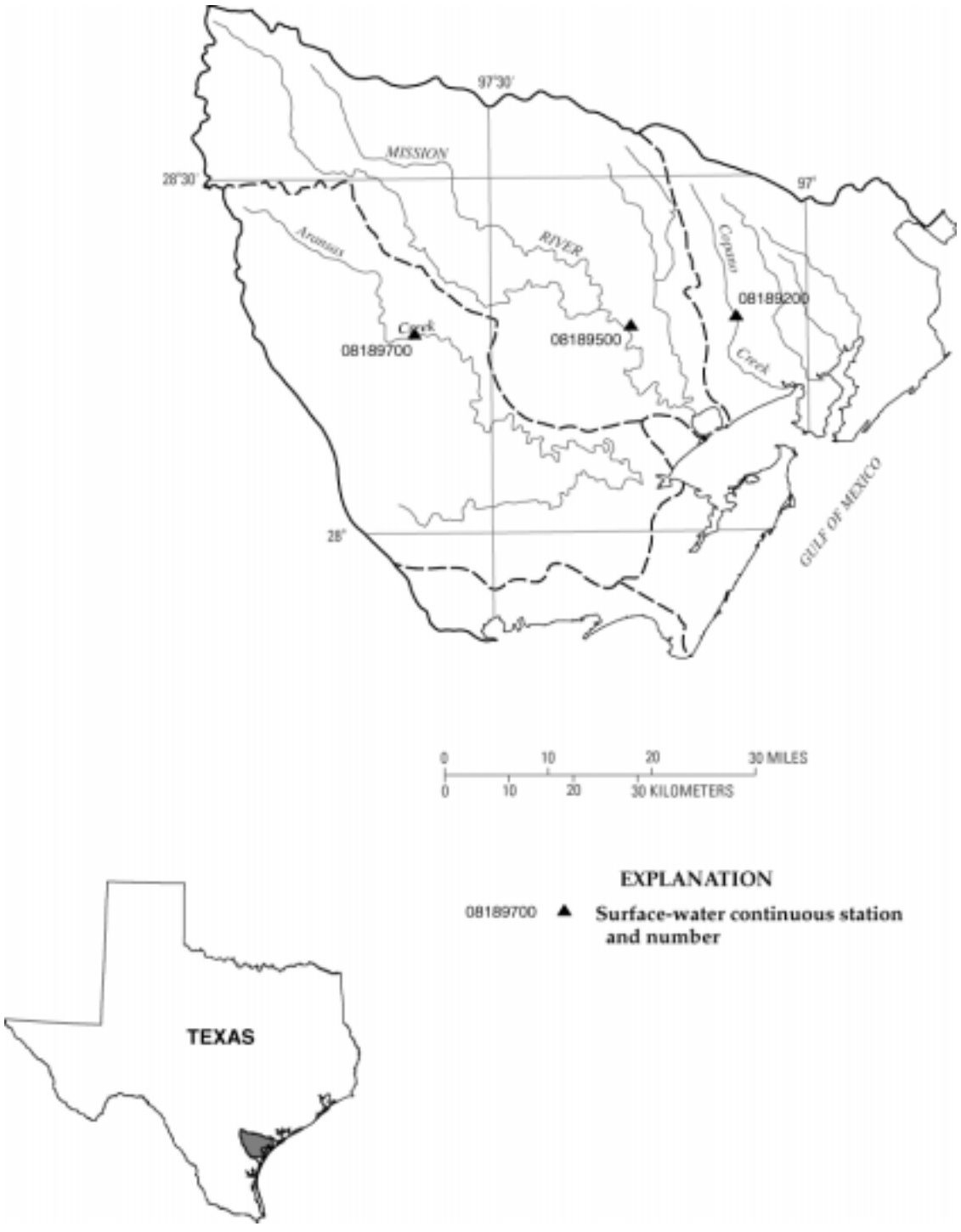


Figure 6.--Map showing location of gaging stations in the Copano, Mission and Aransas River Basins

08189200 Copano Creek near Refugio, TX 236
08189500 Mission River at Refugio, TX 238
08189700 Aransas River near Skidmore, TX 240

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 mi^2.

PERIOD OF RECORD.--Jun 1970 to current year.
Water-quality records.--Chemical data: Jul 1970 to Dec 1988. Biochemical data: Jul 1970 to Dec 1988. Pesticide data: Jul 1970 to Jul 1981.

GAGE.--Water-stage recorder. Datum of gage is 17.25 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1921, 22 ft in Sep 1967, from information by local residents.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 21	2100	1,960	14.43	Nov 15	0815	930	11.42

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	56	23	37	e.02	4.3	20	.95	1.0	.46	.00	.00
2	29	48	23	47	e.02	3.1	32	e.40	e.30	e.30	.00	.00
3	29	35	21	38	e.01	2.3	30	e.35	e.20	e.20	.00	.00
4	21	26	28	20	.00	1.6	16	e.30	e.15	e.10	.00	.00
5	15	23	31	12	.00	1.1	6.7	e.25	e.10	e.10	.00	.00
6	168	22	38	7.8	.00	.72	3.7	e.25	e.10	e.00	.00	.00
7	475	22	45	5.2	.00	e.60	2.3	e.20	e.05	e.20	.00	.00
8	455	32	35	4.0	.00	e.55	1.3	e.20	e.00	.40	.00	.00
9	393	39	20	2.9	.00	e.50	.47	e.15	e.00	e.30	.00	.00
10	333	33	34	2.1	.00	e.47	e.40	e.15	.00	e.20	.00	.00
11	254	28	23	1.5	.00	e.45	e.38	e.10	.00	e.10	.00	.00
12	202	24	50	1.1	18	e.42	e.35	e.10	.00	e.00	.00	.00
13	155	541	46	.78	17	e.40	e.33	e.10	.00	.00	.00	.00
14	94	842	33	.54	6.3	e.38	e.32	e.07	.00	.00	.00	.00
15	52	919	28	e.45	3.9	e.35	e.30	e.05	.00	.00	.00	.00
16	38	865	21	e.40	2.6	e.33	e.28	e.05	.00	.00	.00	.00
17	30	855	15	e.35	104	e.32	e.27	e.05	.00	.00	.00	.00
18	402	876	10	e.30	157	e.30	e.26	14	.00	.00	.00	.00
19	1230	765	7.9	e.27	145	e.28	e.25	14	9.7	e.30	.00	.00
20	1380	643	6.1	e.25	154	e.27	e.24	8.2	58	e.40	.00	.00
21	1830	595	5.0	e.20	133	e.26	e.23	4.6	48	.90	.00	.00
22	1830	489	4.2	e.18	98	e.24	e.22	1.9	40	e.50	.00	.00
23	1420	353	3.6	e.16	69	e.23	e.21	.22	30	e.30	.00	.00
24	1050	214	3.1	e.14	34	e.22	e.20	e.20	20	e.20	.00	.00
25	786	135	2.6	e.10	20	.21	e.20	e.20	16	e.10	.00	.00
26	602	77	2.2	e.08	13	e.20	3.1	e.10	22	e.00	.00	.00
27	466	50	1.9	.06	8.6	e.20	3.4	e.10	24	e.00	.00	.00
28	322	38	1.7	e.04	6.1	2.8	1.4	4.5	12	.00	.00	.00
29	197	29	1.6	e.04	---	2.6	4.0	8.5	6.0	.00	.00	6.5
30	127	25	1.5	e.04	---	2.3	2.8	8.2	2.7	.00	.00	e.60
31	81	---	1.6	e.02	---	1.3	---	4.0	---	.00	.00	---
TOTAL	14498	8699	567.0	183.00	989.55	29.30	131.61	72.44	290.30	5.06	0.00	7.10
MEAN	468	290	18.3	5.90	35.3	.95	4.39	2.34	9.68	.16	.000	.24
MAX	1830	919	50	47	157	4.3	32	14	58	.90	.00	6.5
MIN	15	22	1.5	.02	.00	.20	.20	.05	.00	.00	.00	.00
AC-FT	28760	17250	1120	363	1960	58	261	144	576	10	.00	14

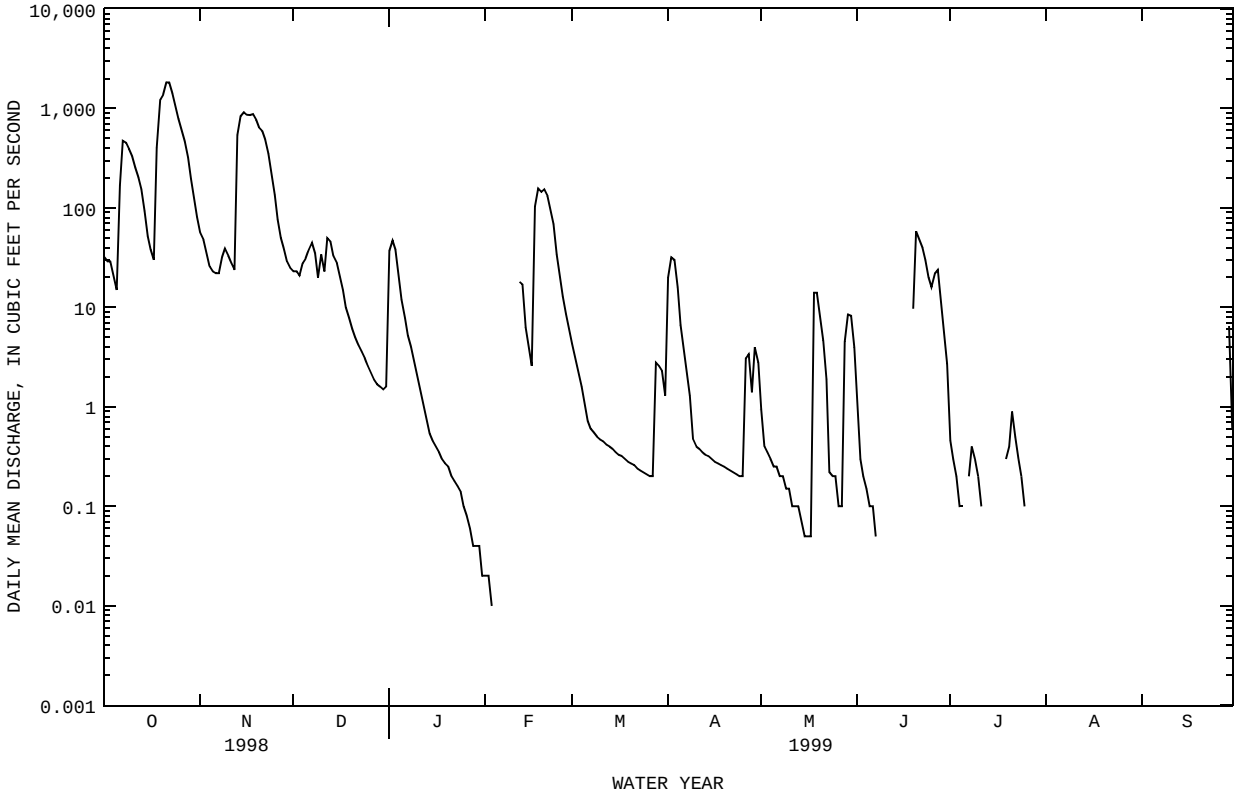
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1999, BY WATER YEAR (WY)

MEAN	75.9	48.0	22.5	23.5	38.8	38.5	28.5	61.3	67.1	41.2	3.29	89.8
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	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1978	1989	1971	1983	1971	1971	1971	1971	1971	1971	1974	1977

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1970 - 1999	
ANNUAL TOTAL	33600.15		25472.36			
ANNUAL MEAN	92.1		69.8		44.9	
HIGHEST ANNUAL MEAN					138	1992
LOWEST ANNUAL MEAN					.52	1989
HIGHEST DAILY MEAN	1830	Oct 21	1830	Oct 21	5960	Sep 12 1971
LOWEST DAILY MEAN	.00	Apr 1	.00	Feb 4	.00	Aug 14 1970
ANNUAL SEVEN-DAY MINIMUM	.00	Apr 1	.00	Feb 4	.00	Aug 14 1970
INSTANTANEOUS PEAK FLOW			1960	Oct 21	6300	Sep 12 1971
INSTANTANEOUS PEAK STAGE			14.43	Oct 21	21.00	Sep 12 1971
ANNUAL RUNOFF (AC-FT)	66650		50520		32540	
10 PERCENT EXCEEDS	243		134		67	
50 PERCENT EXCEEDS	1.4		.40		.07	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated

08189200 COPANO CREEK NEAR REFUGIO, TX--Continued



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 mi^2.

PERIOD OF RECORD.--Jul 1939 to current year.
Water-quality records.--Chemical data: Sep 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 Sep 1981. Water temperature: Oct 1961 to Sep 1981.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.00 ft above sea level. Prior to Nov 25, 1958, nonrecording gage at site 59 ft downstream at same datum. Nov 26, 1958, to Apr 18, 1963, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records good. 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 Sep 12, 1971.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 19	2030	16,000	31.00	Nov 16	0115	6,620	26.52

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	117	104	51	29	29	33	51	e16	17	10	6.6
2	36	107	98	62	29	28	30	38	e16	15	9.8	6.6
3	35	98	95	48	29	28	30	29	e16	15	9.8	7.6
4	34	91	92	42	29	27	28	24	e15	15	9.4	7.2
5	34	89	89	40	29	27	28	22	e15	66	9.4	8.0
6	231	82	85	41	30	27	27	20	e14	156	9.4	8.2
7	1250	88	88	41	29	27	27	19	e14	51	9.3	8.5
8	1090	86	102	40	29	28	27	18	e14	96	9.0	7.7
9	337	80	175	39	29	27	27	18	e14	50	9.0	6.5
10	158	73	124	38	29	27	28	18	e13	28	8.7	6.5
11	107	60	107	37	31	27	28	18	e13	21	8.7	5.6
12	83	63	111	37	53	27	29	21	e12	18	7.8	5.5
13	70	463	99	37	36	27	30	21	e11	16	6.8	5.3
14	61	1630	89	89	30	26	31	53	e11	15	6.8	5.2
15	56	5240	80	54	29	26	30	35	11	14	6.8	5.2
16	51	5790	72	44	29	26	27	25	11	13	6.5	5.2
17	53	2490	64	40	519	26	22	21	12	13	6.5	5.2
18	1920	739	66	36	304	26	22	21	17	13	6.5	5.2
19	10500	384	64	34	132	29	22	37	16	13	6.2	5.2
20	12500	286	62	33	80	27	22	64	85	13	6.1	5.2
21	7600	234	61	33	57	27	22	34	356	24	6.1	5.2
22	3070	198	60	34	44	27	22	e23	288	131	7.3	5.2
23	911	174	60	31	38	26	22	e19	179	155	26	5.5
24	424	160	58	30	34	26	22	e18	141	38	18	5.5
25	280	147	57	30	31	26	22	e17	105	20	10	5.5
26	223	138	56	30	31	25	176	e17	52	16	8.4	5.3
27	188	132	55	30	30	26	344	e17	47	14	7.2	5.2
28	162	121	54	30	29	57	465	e17	39	13	6.8	5.2
29	145	113	54	30	---	44	152	e17	24	12	6.5	8.8
30	134	109	52	29	---	49	78	e17	19	11	6.5	12
31	126	---	66	29	---	40	---	e17	---	10	6.5	---
TOTAL	41906	19582	2499	1219	1828	915	1873	786	1596	1102	271.8	189.6
MEAN	1352	653	80.6	39.3	65.3	29.5	62.4	25.4	53.2	35.5	8.77	6.32
MAX	12500	5790	175	89	519	57	465	64	356	156	26	12
MIN	34	60	52	29	29	25	22	17	11	10	6.1	5.2
AC-FT	83120	38840	4960	2420	3630	1810	3720	1560	3170	2190	539	376
CFSM	1.96	.95	.12	.06	.09	.04	.09	.04	.08	.05	.01	.01
IN.	2.26	1.06	.13	.07	.10	.05	.10	.04	.09	.06	.01	.01

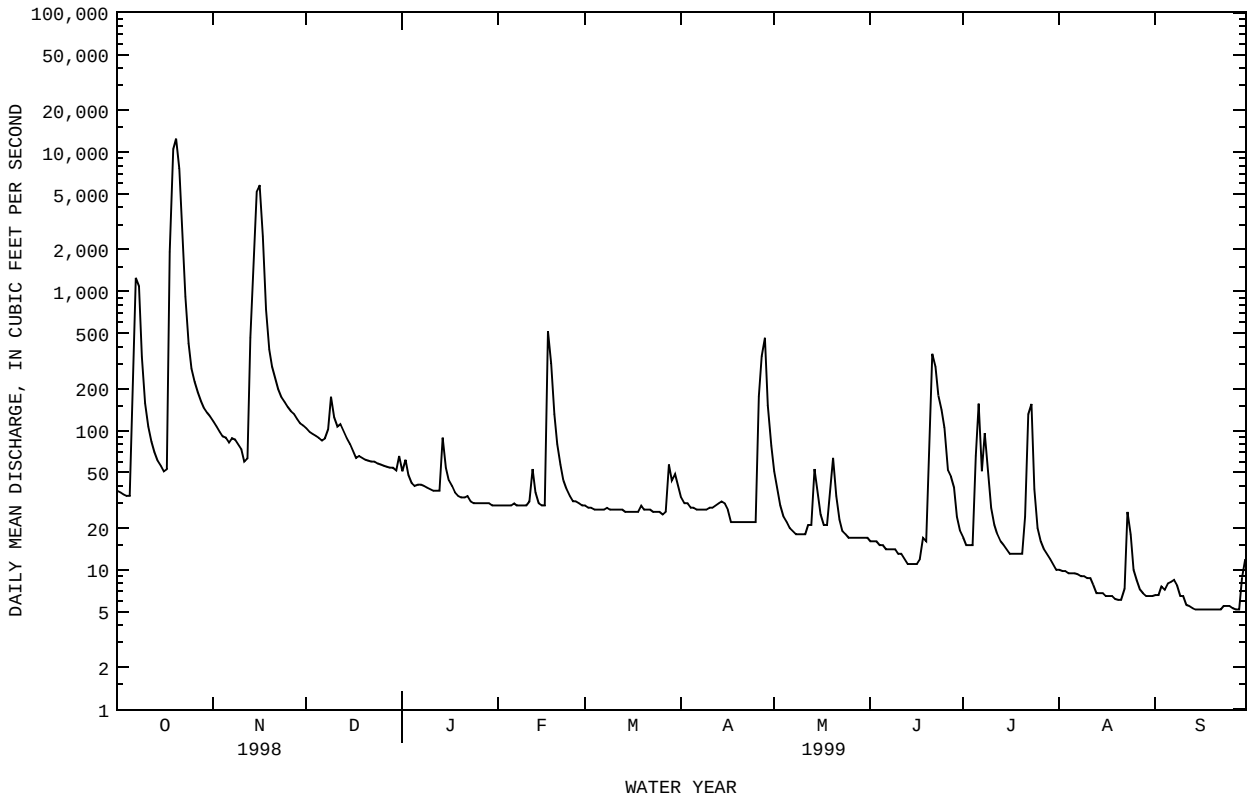
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1999, BY WATER YEAR (WY)

MEAN	196	71.8	60.6	46.3	107	59.4	102	183	179	134	61.1	300
MAX	1882	1380	849	417	1178	595	851	1387	1848	2135	1076	7646
(WY)	1974	1982	1992	1992	1958	1997	1992	1972	1973	1990	1942	1967
MIN	.051	.63	.62	.66	.66	2.20	1.90	.46	.65	.40	.096	.027
(WY)	1990	1990	1990	1990	1990	1989	1940	1989	1990	1989	1989	1989

08189500 MISSION RIVER AT REFUGIO, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1939 - 1999	
ANNUAL TOTAL	104960.6		73767.4			
ANNUAL MEAN	288		202		125	
HIGHEST ANNUAL MEAN					647	1967
LOWEST ANNUAL MEAN					1.74	1989
HIGHEST DAILY MEAN	12500	Oct 20	12500	Oct 20	78800	Sep 22 1967
LOWEST DAILY MEAN	2.0	Aug 4	5.2	Sep 14	.00	Sep 1 1989
ANNUAL SEVEN-DAY MINIMUM	2.8	Aug 8	5.2	Sep 14	.00	Aug 30 1989
INSTANTANEOUS PEAK FLOW			16000	Oct 19	c79000	Sep 12 1971
INSTANTANEOUS PEAK STAGE			31.00	Oct 19	p38.25	Sep 12 1971
ANNUAL RUNOFF (AC-FT)	208200		146300		90810	
ANNUAL RUNOFF (CFSM)	.42		.29		.18	
ANNUAL RUNOFF (INCHES)	5.66		3.98		2.47	
10 PERCENT EXCEEDS	350		159		96	
50 PERCENT EXCEEDS	30		29		11	
90 PERCENT EXCEEDS	4.6		7.2		2.3	

e Estimated
c From rating curve extended above current-meter discharge measurements of 76,000 ft^3/s and 77,200 ft^3/s.
p Observed.



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 mi^2.

PERIOD OF RECORD.--Mar 1964 to current year.
Water-quality records.--Chemical data: Oct 1965 to Sep 1966. Sediment data: Feb 1966 to Sep 1975.

GAGE.--Water-stage recorder. Datum of gage is 72.37 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. The city of Beeville discharges wastewater effluent into the river via Poesta Creek 3.8 mi upstream. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sep 1954 reached a stage of 33 ft (discharge, 19,600 ft^3/s), from information by local resident. Maximum stage since at least 1914, that of Sep 22, 1967.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 19	0100	4,350	20.23	Apr 27	0245	2,890	a17.21
Nov 14	1830	3,510	18.65	Aug 24	2115	1,570	13.21

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	9.4	7.4	8.2	6.0	6.3	11	17	4.9	3.5	2.7	5.2
2	5.4	10	7.4	9.2	6.3	6.3	9.3	13	4.5	3.5	2.7	4.7
3	5.4	11	6.8	8.0	6.6	6.1	8.3	12	4.5	3.4	2.8	4.2
4	5.2	8.8	6.7	6.7	5.7	6.2	7.9	10	4.4	3.9	2.9	4.1
5	4.7	8.8	6.4	6.7	6.3	6.3	7.4	9.5	4.3	9.9	2.9	3.9
6	50	14	6.6	7.0	6.2	6.3	6.8	8.3	4.4	13	2.6	4.4
7	216	11	7.0	6.8	6.3	6.5	6.5	7.5	4.6	6.1	2.5	4.7
8	63	14	9.1	7.6	6.0	6.3	6.4	7.0	4.3	4.2	2.4	4.4
9	22	11	13	7.9	5.9	6.4	6.3	6.8	4.6	3.6	2.5	4.2
10	12	8.5	8.7	7.0	6.3	6.1	6.1	6.6	4.6	3.3	2.5	3.9
11	8.5	7.8	9.4	6.1	6.3	6.2	6.0	6.4	4.7	3.3	2.6	3.6
12	7.0	7.6	9.1	6.6	6.6	6.2	5.9	65	4.4	3.2	2.6	3.3
13	6.2	8.3	10	7.5	6.2	6.2	5.8	62	4.2	3.0	2.4	3.2
14	5.8	1800	8.4	8.9	5.8	6.3	6.0	17	3.9	2.7	2.2	3.1
15	5.4	856	7.8	8.1	5.9	5.5	5.8	9.9	3.7	2.7	2.3	3.3
16	5.2	138	7.4	6.9	6.3	5.3	5.2	7.6	4.1	2.7	2.2	3.1
17	5.1	57	7.1	7.2	43	5.5	5.5	6.6	5.8	2.8	2.1	2.8
18	1560	35	7.0	7.1	28	5.8	5.5	8.5	12	3.2	2.1	2.6
19	3060	23	7.5	7.0	11	6.7	5.2	7.6	6.0	3.3	2.2	2.7
20	699	17	8.7	7.1	8.0	6.6	5.2	6.6	6.1	3.5	2.2	2.7
21	153	14	8.1	7.6	6.9	6.1	5.4	5.8	8.0	7.4	2.0	2.5
22	58	12	8.2	7.7	6.4	6.0	5.4	5.5	19	22	2.0	2.5
23	32	11	7.9	6.4	6.4	5.6	5.5	5.3	13	8.6	73	2.7
24	20	9.9	7.8	5.5	6.4	5.8	5.4	5.2	7.0	5.0	1050	2.5
25	16	9.3	8.0	5.6	6.5	5.8	5.2	5.0	5.7	3.8	537	2.6
26	14	8.5	7.9	6.3	6.5	6.0	540	4.9	5.3	3.5	67	3.0
27	14	8.0	7.9	6.9	6.8	6.9	1560	4.9	4.7	3.2	20	2.9
28	12	7.5	8.4	7.1	6.7	201	175	4.8	4.3	3.0	11	2.9
29	11	7.1	8.3	7.6	---	130	54	5.1	3.8	2.8	7.9	4.8
30	10	7.1	8.2	7.2	---	31	26	5.0	3.5	2.7	6.3	5.6
31	9.6	---	8.1	6.8	---	15	---	5.1	---	2.7	5.6	---
TOTAL	6101.0	3150.6	250.3	222.3	241.3	542.3	2514.0	351.5	174.3	149.5	1831.2	106.1
MEAN	197	105	8.07	7.17	8.62	17.5	83.8	11.3	5.81	4.82	59.1	3.54
MAX	3060	1800	13	9.2	43	201	1560	65	19	22	1050	5.6
MIN	4.7	7.1	6.4	5.5	5.7	5.3	5.2	4.8	3.5	2.7	2.0	2.5
AC-FT	12100	6250	496	441	479	1080	4990	697	346	297	3630	210

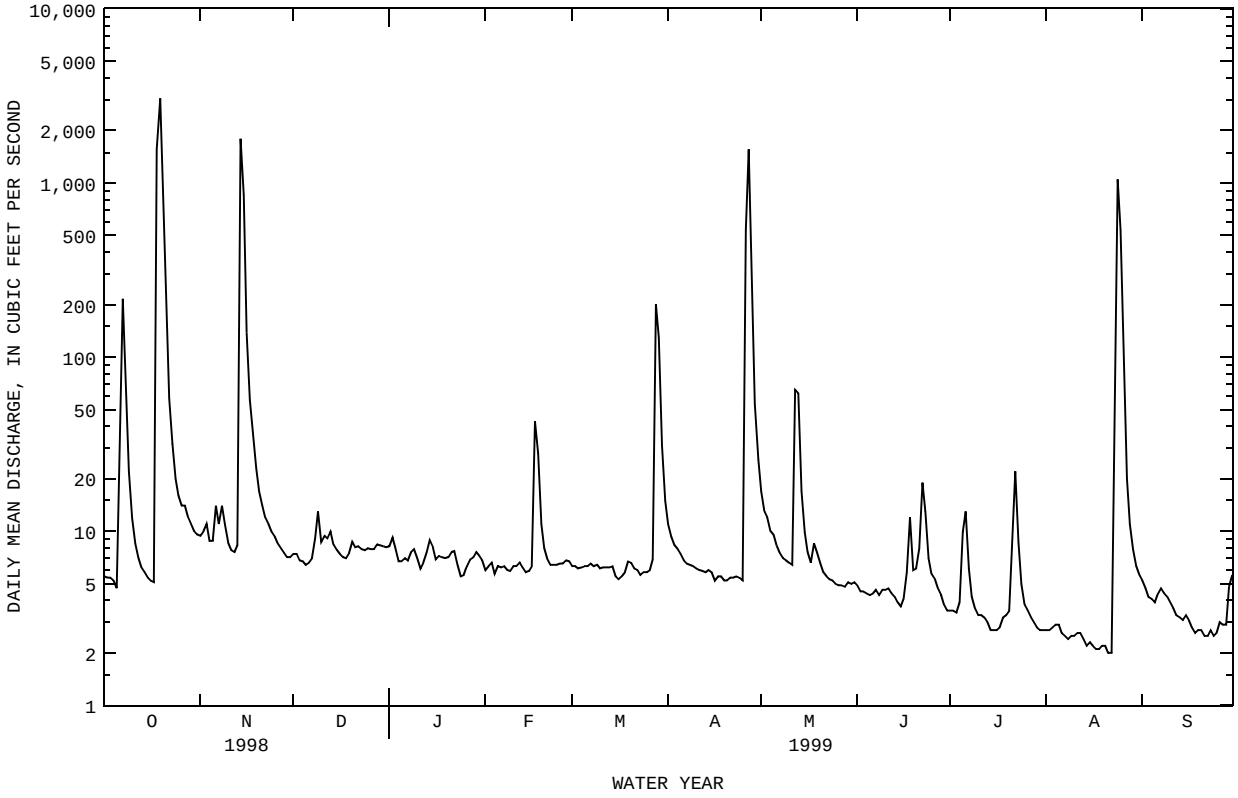
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

MEAN	43.7	10.5	18.3	7.71	14.8	14.0	30.5	54.4	49.6	27.8	14.3	133
MAX	346	105	327	38.9	119	117	255	349	512	451	176	2356
(WY)	1998	1999	1992	1992	1969	1992	1992	1972	1973	1990	1980	1967
MIN	.000	.17	.72	1.05	1.10	.55	.31	1.04	.026	.031	.000	.000
(WY)	1990	1965	1965	1971	1967	1966	1967	1989	1967	1986	1965	1965

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1964 - 1999	
ANNUAL TOTAL	13640.9		15634.4			
ANNUAL MEAN	37.4		42.8		35.4	
HIGHEST ANNUAL MEAN					199	1967
LOWEST ANNUAL MEAN					3.15	1986
HIGHEST DAILY MEAN	3060	Oct 19	3060	Oct 19	49300	Sep 22 1967
LOWEST DAILY MEAN	1.3	Jun 16	2.0	Aug 21	.00	Jun 24 1964
ANNUAL SEVEN-DAY MINIMUM	1.7	Jun 15	2.1	Aug 16	.00	Aug 16 1964
INSTANTANEOUS PEAK FLOW			4350	Oct 19	i82800	Sep 22 1967
INSTANTANEOUS PEAK STAGE			20.23	Oct 19	a42.22	Sep 22 1967
ANNUAL RUNOFF (AC-FT)	27060		31010		25640	
10 PERCENT EXCEEDS	28		18		16	
50 PERCENT EXCEEDS	6.3		6.3		4.0	
90 PERCENT EXCEEDS	1.9		2.9		.67	

a From floodmark.
i From indirect measurement of peak flow.

08189700 ARANSAS RIVER NEAR SKIDMORE, TX--Continued



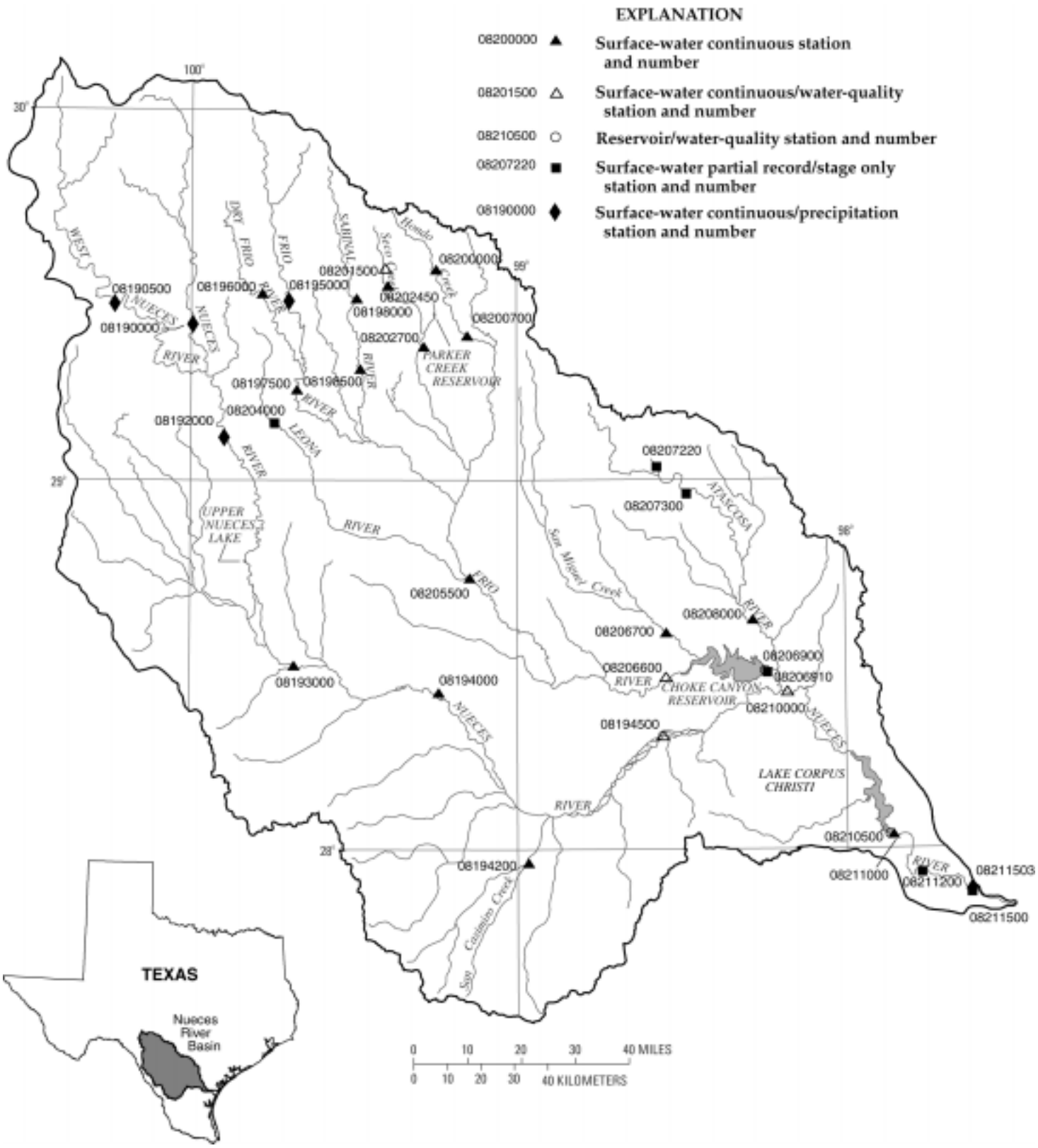


Figure 7.--Map showing location of gaging stations in the Nueces River Basin

08190000 Nueces River at Laguna, TX 244
08190500 West Nueces River near Brackettville, TX 248
08192000 Nueces River below Uvalde, TX 252
08193000 Nueces River near Asherton, TX 256
08194000 Nueces River at Cotulla, TX 258
08194200 San Casimiro near Freer, TX 260
08194500 Nueces River near Tilden, TX 262
08195000 Frio River at Concan, TX 266
08196000 Dry Frio River near Reagan Wells, TX 270
08197500 Frio River below Dry Frio River near Uvalde, TX 272
08198000 Sabinal River near Sabinal, TX 274
08198500 Sabinal River at Sabinal, TX 276
08200000 Hondo Creek near Tarpley, TX 278
08200700 Hondo Creek at King Waterhole near Hondo, TX 280
08201500 Seco Creek at Miller Ranch near Utopia, TX 282
08202450 Seco Creek Reservoir Inflow near Utopia,. TX 286
08202700 Seco Creek at Rowe Ranch near D'Hanis, TX 288
08204000 Leona River Springflow near Uvalde, TX 395
08205500 Frio River near Derby, TX 290
08206600 Frio River at Tilden, TX 292
08206700 San Miguel Creek near Tilden, TX 296
08206900 Choke Canyon Reservoir near Three Rivers, TX 298
08206910 Choke Canyon Reservoir Outflow Works Channel near Three Rivers, TX 308
08207220 Rutledge Hollow at 7th Street, Poteet, TX 397
08207300 Atascosa River at U.S. Highway 281, Pleasanton, TX 397
08208000 Atascosa River at Whitsett, TX 310
08210000 Nueces River near Three Rivers, TX 312
08210500 Lake Corpus Christi near Mathis, TX 316
08211000 Nueces River near Mathis, TX 324
08211200 Nueces River at Bluntzer, TX 326
08211500 Nueces River at Calallen, TX 328
08211503 Rincon Bayou Channel near Calallen, TX 330

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1923 to current year.
Water-quality records.--Chemical data: May 1949 to Jun 1952, Sep 1964 to Sep 1993. Biochemical data: Feb 1970 to Sep 1993. Pesticide data: Feb 1970 to Sep 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 sea level. 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 good. No known regulation. There are many small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jun 1913 reached a stage of about 29 ft (discharge, 210,000 ft^3/s); flood of Sep 21, 1923, reached a stage of about 26.5 ft (discharge, 160,000 ft^3/s); from information by local residents. Maximum stage since at least 1866, that of Sep 24, 1955.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 18	0400	17,700	12.18	May 11	0430	1,000	5.47
Apr 26	0400	2,820	6.47	Jun 21	1130	7,130	8.41
Apr 27	0045	1,280	5.73	Jun 21	1445	3,670	6.91

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	413	433	297	207	166	141	177	327	169	313	142	89
2	413	510	292	207	166	141	176	302	165	295	140	87
3	407	482	289	207	166	140	173	288	158	282	138	83
4	397	446	289	207	163	138	168	271	150	276	137	81
5	391	431	288	207	162	138	166	249	151	267	133	82
6	477	427	284	207	162	138	162	230	147	259	128	80
7	490	424	281	204	161	137	158	216	144	251	125	80
8	459	412	275	200	158	137	158	207	142	248	125	80
9	432	398	273	198	157	136	157	202	136	247	121	78
10	413	387	282	198	153	133	151	198	131	239	118	76
11	404	375	276	198	150	134	146	547	131	283	117	78
12	394	365	271	198	148	146	141	516	128	257	110	76
13	388	367	266	192	148	143	140	419	167	247	110	76
14	378	386	263	182	148	133	138	362	154	234	109	76
15	369	386	260	181	148	131	137	327	138	222	108	75
16	366	380	252	181	147	130	134	304	138	209	109	73
17	361	366	243	179	144	125	134	286	138	202	107	73
18	2970	357	240	177	144	127	133	292	136	201	107	74
19	665	347	238	175	144	128	130	266	140	197	102	73
20	536	347	238	173	143	133	127	251	173	191	103	70
21	502	347	238	173	141	138	122	242	1700	184	104	70
22	475	342	233	170	141	141	122	236	1030	180	102	68
23	448	335	229	170	140	141	119	226	685	176	102	68
24	424	332	227	169	139	141	119	217	529	172	103	68
25	405	327	225	166	142	141	150	207	464	167	104	68
26	388	323	225	166	141	140	1440	200	431	161	101	68
27	378	322	222	165	141	150	871	193	412	159	99	68
28	366	316	219	166	141	178	494	186	380	154	96	67
29	358	310	213	166	---	177	423	181	355	150	94	64
30	348	305	207	166	---	177	369	177	332	147	93	66
31	341	---	207	166	---	177	---	175	---	144	91	---
TOTAL	15556	11285	7842	5721	4204	4410	7235	8300	9254	6714	3478	2235
MEAN	502	376	253	185	150	142	241	268	308	217	112	74.5
MAX	2970	510	297	207	166	178	1440	547	1700	313	142	89
MIN	341	305	207	165	139	125	119	175	128	144	91	64
AC-FT	30860	22380	15550	11350	8340	8750	14350	16460	18360	13320	6900	4430
CFSM	.68	.51	.34	.25	.20	.19	.33	.36	.42	.29	.15	.10
IN.	.79	.57	.40	.29	.21	.22	.37	.42	.47	.34	.18	.11

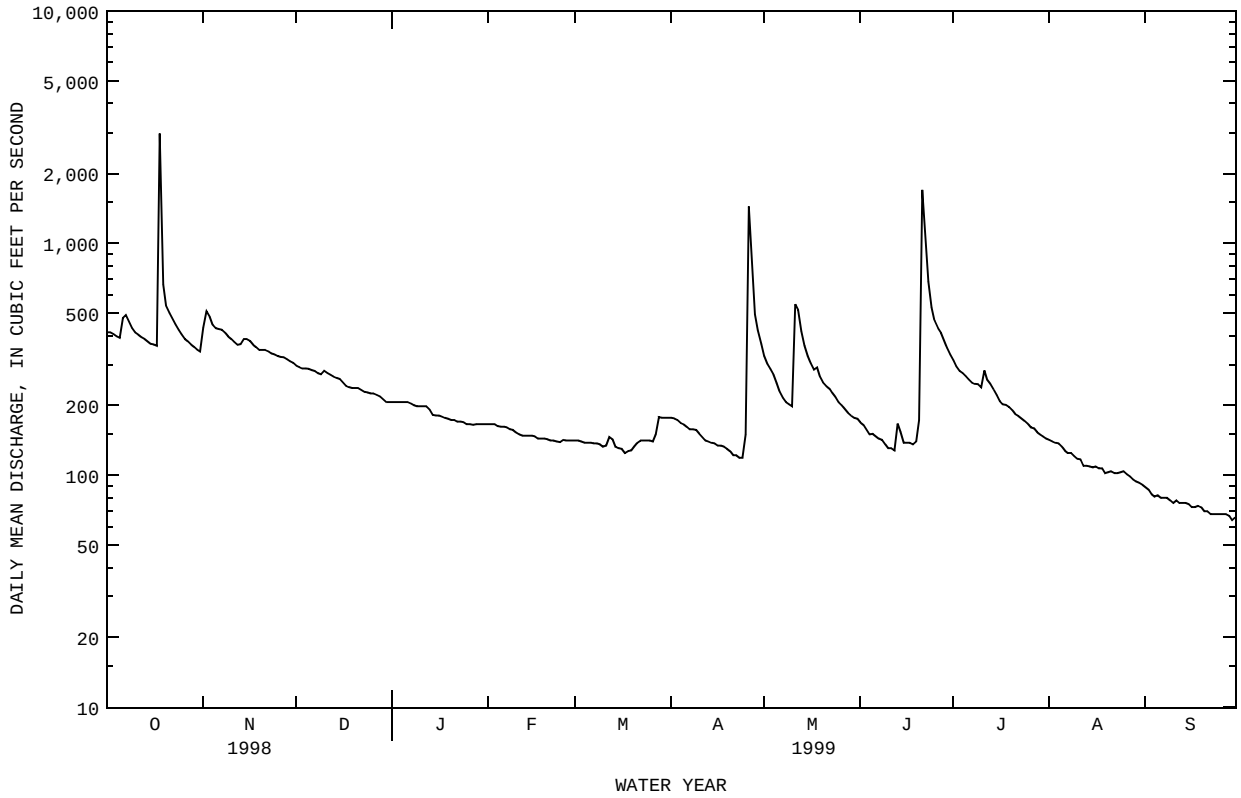
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1999, BY WATER YEAR (WY)

MEAN	230	126	119	106	116	108	113	157	269	163	161	247
MAX	2030	544	894	610	1160	867	766	868	5407	1580	2500	2668
(WY)	1974	1924	1992	1992	1949	1992	1977	1935	1935	1939	1971	1955
MIN	7.39	5.42	5.58	5.46	5.10	7.04	23.7	18.2	12.2	8.11	6.99	8.60
(WY)	1953	1957	1957	1957	1957	1957	1935	1953	1953	1953	1953	1956

08190000 NUECES RIVER AT LAGUNA, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1924 - 1999	
ANNUAL TOTAL	121648		86234			
ANNUAL MEAN	333		236		160	
HIGHEST ANNUAL MEAN					611	1935
LOWEST ANNUAL MEAN					23.1	1953
HIGHEST DAILY MEAN	20000	Aug 23	2970	Oct 18	107000	Jun 14 1935
LOWEST DAILY MEAN	19	Aug 12	64	Sep 29	3.0	Feb 27 1957
ANNUAL SEVEN-DAY MINIMUM	21	Jul 27	67	Sep 24	3.2	Mar 10 1957
INSTANTANEOUS PEAK FLOW			17700	Oct 18	i307000	Sep 24 1955
INSTANTANEOUS PEAK STAGE			12.18	Oct 18	a32.70	Sep 24 1955
ANNUAL RUNOFF (AC-FT)	241300		171000		115600	
ANNUAL RUNOFF (CFSM)	.45		.32		.22	
ANNUAL RUNOFF (INCHES)	6.14		4.35		2.94	
10 PERCENT EXCEEDS	485		409		242	
50 PERCENT EXCEEDS	110		176		77	
90 PERCENT EXCEEDS	28		102		24	

a From floodmark.
i From indirect measurement of peak flow.



08190000 NUECES RIVER AT LAGUNA, TX--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--Feb 1988 to current year. Unpublished records Feb 1988 to Sep 1998.

INSTRUMENTATION.--Recording tipping bucket rain gage at site.

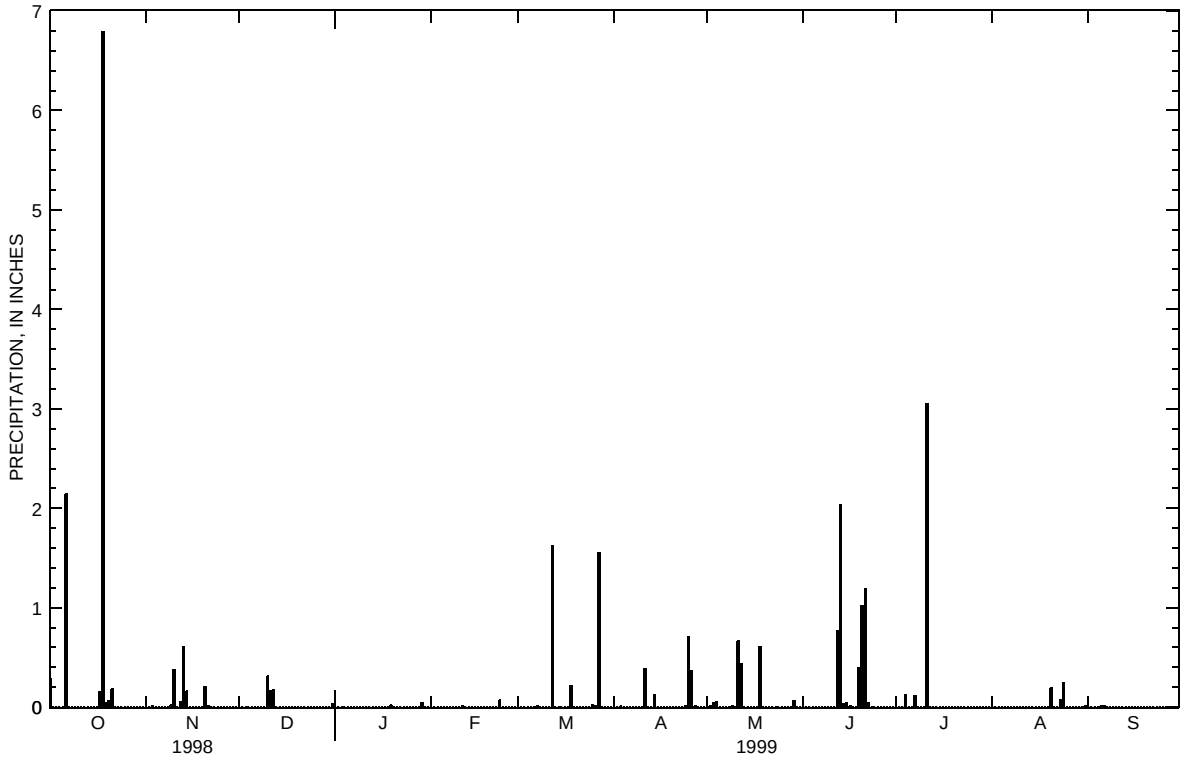
REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 6.79 in., Oct 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
3	.00	.01	.00	.00	.00	.00	.01	.04	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.05	.00	.12	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
6	2.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
7	.00	.00	.00	.00	.00	.01	.00	.00	.00	.11	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.02	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
10	.00	.37	.31	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.16	.00	.01	.00	.38	.66	.00	3.05	.00	.00
12	.00	.05	.17	.00	.00	1.62	.00	.43	.77	.00	.00	.00
13	.00	.61	.00	.00	.00	.00	.00	.00	2.03	.00	.00	.00
14	.00	.16	.00	.00	.00	.00	.12	.00	.03	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
17	.15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	6.79	.00	.00	.00	.00	.21	.00	.61	.00	.00	.00	.00
19	.04	.00	.00	.02	.00	.00	.00	.00	.39	.00	.00	.00
20	.06	.20	.00	.00	.00	.00	.00	.00	1.02	.00	.19	.00
21	.18	.01	.00	.00	.00	.00	.00	.00	1.19	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00
23	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.07	.00
24	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.24	.00
25	.00	.00	.00	.00	.00	.02	.71	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.01	.36	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	1.55	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.04	---	.00	.00	.06	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.03	.00	---	.00	---	.00	---	.00	.01	---
TOTAL	9.64	1.43	0.67	0.06	0.08	3.42	1.60	1.87	5.52	3.28	0.51	0.02
MAX	6.79	.61	.31	.04	.07	1.62	.71	.66	2.03	3.05	.24	.01
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

08190000 NUECES RIVER AT LAGUNA, TX--Continued



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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Sep 1939 to Sep 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 sea level. Prior to Mar 14, 1940, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. 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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1879, about 40 ft Jun 14, 1935 (discharge, 550,000 ft^3/s, based on slope-area measurements of 580,000 ft^3/s at site 33 mi upstream from gage, and 536,000 ft^3/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 Sep 24, 1955, reached a stage of 27.1 ft, from floodmark at present site (discharge, 150,000 ft^3/s, by slope-area measurement).

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

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

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	13	7.1	3.9	3.8	1.9	3.5	9.9	1.1	4.2	2.3	.84
2	49	13	7.0	3.6	3.8	1.9	2.7	8.5	1.1	3.8	2.1	.84
3	46	13	6.7	3.7	3.8	1.9	2.1	7.3	1.0	3.5	2.0	.85
4	44	12	6.6	3.6	3.8	2.0	1.7	6.3	1.0	3.4	1.9	.84
5	43	11	6.7	3.6	3.9	1.9	1.3	5.4	1.0	3.0	1.8	.84
6	55	11	6.5	3.5	3.8	1.9	1.2	4.9	1.0	2.6	1.7	.84
7	60	11	6.1	3.4	3.5	2.1	1.2	4.2	.96	2.8	1.7	.84
8	59	11	6.0	3.4	3.2	2.0	1.2	3.6	.92	2.9	1.5	.84
9	53	11	6.0	3.2	3.2	1.8	1.2	3.1	.93	2.7	1.4	.95
10	47	9.8	6.1	3.2	3.5	1.7	1.0	2.7	1.0	2.5	1.4	.94
11	42	10	5.9	3.1	3.2	1.7	.96	2.5	.98	3.6	1.3	.81
12	38	10	5.8	3.0	3.0	1.8	1.0	2.6	.98	5.9	1.3	.77
13	34	10	5.7	3.1	3.0	1.4	1.0	2.2	1.3	8.0	1.2	1.4
14	31	9.8	5.5	3.1	2.9	1.4	1.1	2.2	1.4	8.8	1.2	1.4
15	29	9.4	5.5	3.0	2.9	1.5	.95	2.1	1.4	8.4	1.2	.98
16	26	9.4	5.5	3.0	2.8	1.5	1.0	1.9	1.3	8.1	1.1	.82
17	25	9.4	5.5	3.0	2.8	1.7	1.0	1.8	1.2	7.5	1.1	.68
18	24	9.4	5.4	3.0	2.7	1.8	1.0	1.7	1.1	7.0	1.1	.67
19	22	8.7	5.3	2.9	2.7	1.6	.99	1.5	1.0	6.4	1.1	.68
20	21	8.9	5.3	2.9	2.4	1.5	.98	1.4	1.6	5.9	1.0	.67
21	19	8.7	5.2	2.9	2.4	1.3	1.0	1.4	2.9	5.5	1.0	.64
22	18	8.7	4.8	2.8	2.4	1.2	.99	1.4	5.7	5.2	1.0	.63
23	17	8.7	4.8	4.0	2.3	1.2	.93	1.3	8.5	4.8	1.0	.66
24	16	8.4	4.8	4.3	2.4	1.2	.93	1.2	9.4	4.2	1.2	.63
25	15	8.1	4.8	4.4	2.3	1.2	3.0	1.2	8.9	4.0	1.1	.67
26	14	7.9	4.6	4.5	2.3	1.2	5.3	1.2	7.8	3.6	1.0	.67
27	14	7.7	4.5	4.3	2.2	2.1	9.7	1.3	6.6	3.3	.93	.67
28	13	7.7	4.3	4.1	2.1	2.0	12	1.2	5.6	3.0	.93	.67
29	13	7.3	4.2	3.9	---	5.6	12	1.2	5.1	2.8	.91	.61
30	12	6.9	4.1	3.6	---	6.3	11	1.1	4.6	2.6	.84	.64
31	12	---	4.1	3.8	---	4.9	---	1.1	---	2.4	.84	---
TOTAL	960	290.9	170.4	107.8	83.1	63.2	83.93	89.4	87.37	142.4	40.15	23.99
MEAN	31.0	9.70	5.50	3.48	2.97	2.04	2.80	2.88	2.91	4.59	1.30	.80
MAX	60	13	7.1	4.5	3.9	6.3	12	9.9	9.4	8.8	2.3	1.4
MIN	12	6.9	4.1	2.8	2.1	1.2	.93	1.1	.92	2.4	.84	.61
AC-FT	1900	577	338	214	165	125	166	177	173	282	80	48

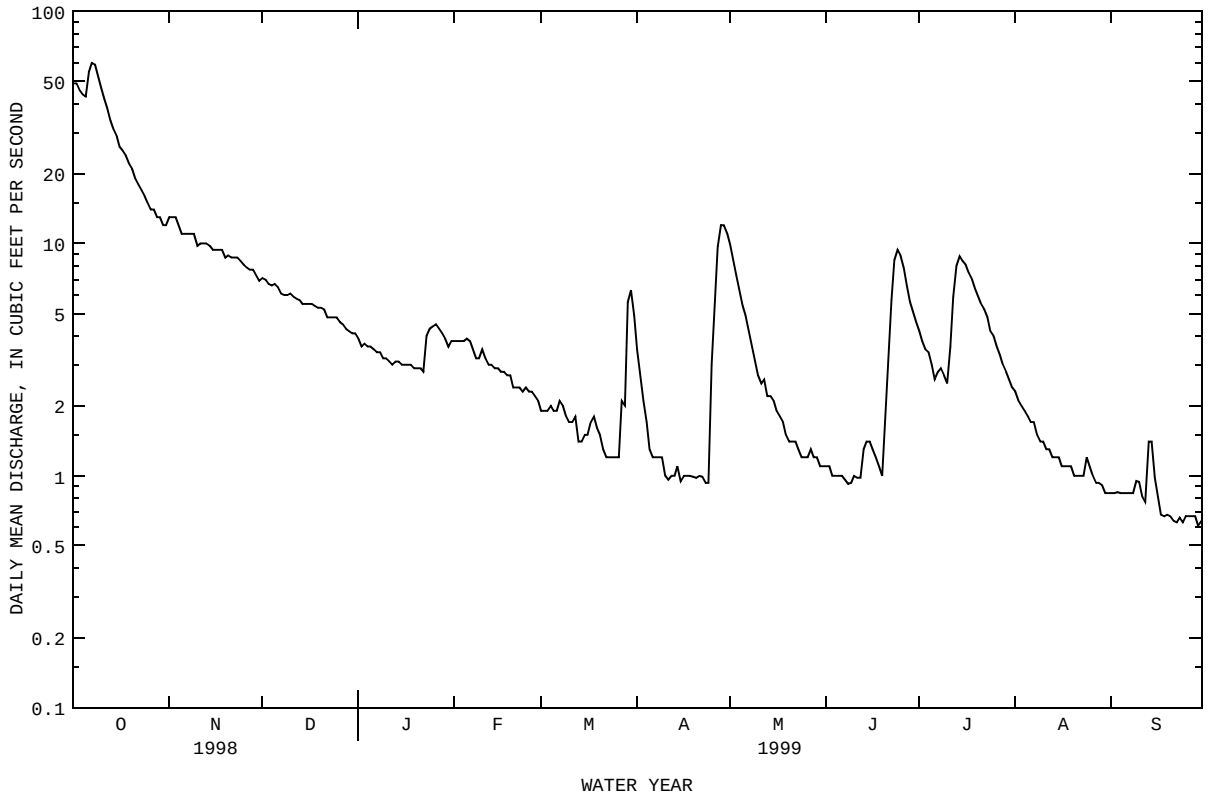
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1999h, BY WATER YEAR (WY)

MEAN	80.9	5.42	4.94	2.44	20.8	3.69	9.65	12.1	105	46.4	63.9	70.8
MAX	1145	76.5	164	68.4	978	60.2	238	266	1880	737	1308	2180
(WY)	1997	1959	1985	1985	1949	1979	1990	1957	1958	1976	1971	1964
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1941	1941	1940	1940	1940	1940	1942	1942	1942	1941	1940	1940

08190500 WEST NUECES RIVER NEAR BRACKETTVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1939 - 1999h	
ANNUAL TOTAL	38813.31		2142.64			
ANNUAL MEAN	106		5.87		36.0	
HIGHEST ANNUAL MEAN					237	1958
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	20700	Aug 24	60	Oct 7	42500	Sep 20 1964
LOWEST DAILY MEAN	.01	Jul 30	.61	Sep 29	.00	Sep 28 1939
ANNUAL SEVEN-DAY MINIMUM	.02	Jul 26	.65	Sep 24	.00	Sep 28 1939
INSTANTANEOUS PEAK FLOW			62	Oct 7	i246000	Sep 20 1964
INSTANTANEOUS PEAK STAGE			2.03	Oct 7	a31.30	Sep 20 1964
ANNUAL RUNOFF (AC-FT)	76990		4250		26070	
10 PERCENT EXCEEDS	65		12		8.5	
50 PERCENT EXCEEDS	.89		3.0		.03	
90 PERCENT EXCEEDS	.22		.95		.00	

h See PERIOD OF RECORD paragraph.
i From indirect measurement of peak flow.
a From floodmark.



08190500 WEST NUECES RIVER NEAR BRACKETTVILLE, TX--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--Nov 1996 to current year. Unpublished records Nov 1996 to Sep 1998.

INSTRUMENTATION.--Recording tipping bucket rain gage at site.

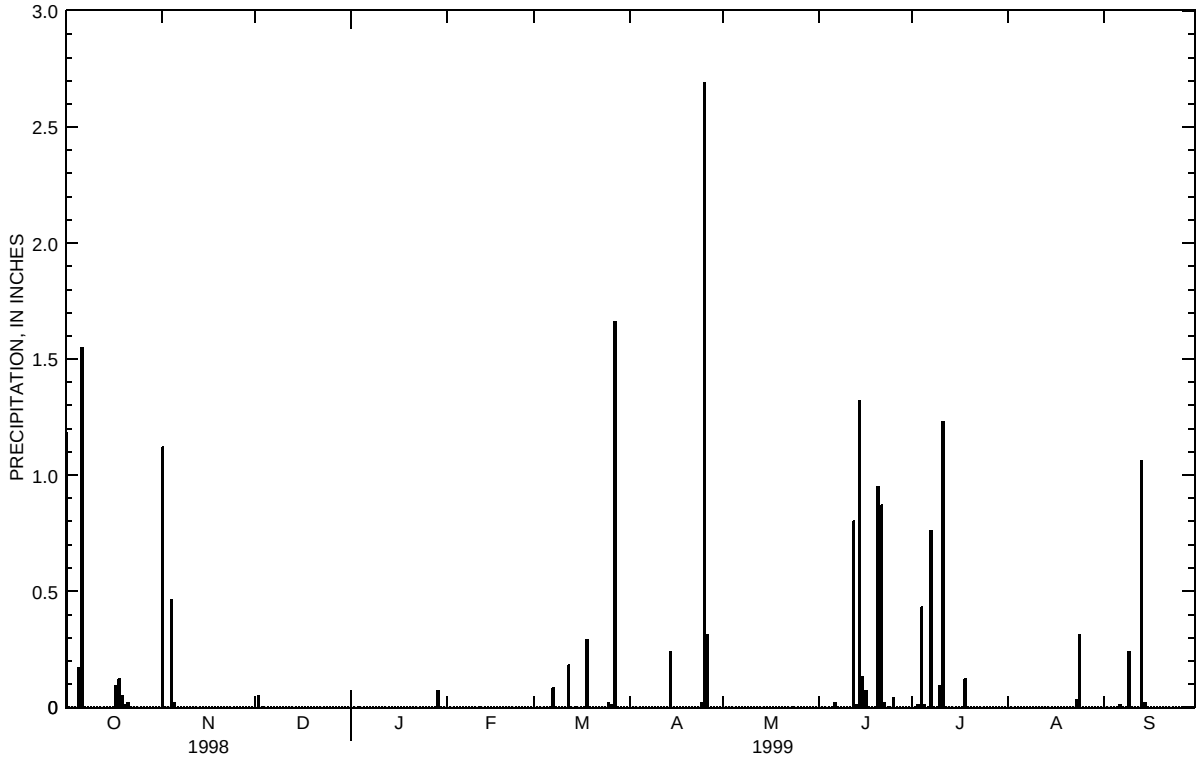
REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 2.69 in., Apr 25.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.18	1.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
4	.00	.46	.00	.00	.00	.00	.00	.00	.00	.43	.00	.00
5	.17	.02	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
6	1.55	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.01
7	.00	.00	.00	.00	.00	.08	.00	.00	.00	.76	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.24
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.23	.00	.00
12	.00	.00	.00	.00	.00	.18	.00	.00	.80	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	1.06
14	.00	.00	.00	.00	.00	.00	.24	.00	1.32	.00	.00	.02
15	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00
17	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.12	.00	.00	.00	.00	.29	.00	.00	.00	.12	.00	.00
19	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.01	.00	.00	.00	.00	.00	.00	.00	.95	.00	.00	.00
21	.02	.00	.00	.00	.00	.00	.00	.00	.87	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00
24	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.31	.00
25	.00	.00	.00	.00	.00	.02	2.69	.00	.04	.00	.00	.00
26	.00	.00	.00	.00	.00	.01	.31	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	1.66	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.07	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	3.19	1.60	0.05	0.07	0.00	2.24	3.26	0.00	4.23	2.65	0.34	1.33
MAX	1.55	1.12	.05	.07	.00	1.66	2.69	.00	1.32	1.23	.31	1.06
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

08190500 WEST NUECES RIVER NEAR BRACKETTVILLE, TX--Continued



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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Apr 1939 to current year. Oct 1927 to Apr 1939, published as "near Uvalde" (station 08191500); records are equivalent only during periods of flood flow.

REVISED RECORDS.--WSP 1732: 1956(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 796.12 ft above sea level. Oct 4, 1927, to Apr 30, 1939, water-stage recorder at site 6.2 mi upstream at different datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. 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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1836, 40.4 ft Jun 14, 1935, from floodmark (discharge at former site, 616,000 ft^3/s, by slope-area measurement). Large floods also occurred in 1901 and 1913, stages unknown.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 6	0315	485	4.19	May 12	0145	453	4.08
Oct 18	1315	10,200	11.21	Jun 21	2115	3,270	6.58
Nov 2	2215	479	4.10	Jul 11	2245	453	4.03
Apr 26	1900	930	4.71				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	386	361	307	221	159	120	163	361	117	295	136	67
2	388	436	305	216	160	117	163	324	113	281	130	67
3	373	477	304	212	160	116	159	303	109	271	126	66
4	361	455	296	209	157	115	156	285	103	268	122	64
5	349	445	298	208	157	115	150	263	99	258	117	62
6	451	423	295	207	156	114	146	241	94	244	114	62
7	464	428	289	204	153	114	141	222	89	242	110	62
8	456	420	282	204	152	114	137	206	85	238	105	61
9	425	412	280	198	150	114	136	195	82	232	101	59
10	400	400	291	196	149	113	133	186	79	226	98	59
11	381	388	287	196	145	113	128	192	76	304	94	58
12	365	384	277	196	141	117	123	423	73	348	92	56
13	354	384	272	195	140	119	123	378	76	274	89	55
14	343	419	268	190	139	127	121	329	78	253	85	55
15	331	403	265	190	141	120	116	291	103	239	81	54
16	322	399	260	188	139	117	111	267	100	228	80	53
17	320	388	259	187	136	114	110	248	92	219	80	53
18	3630	376	259	184	134	112	107	233	87	212	79	53
19	1410	367	257	183	131	111	105	226	82	208	77	51
20	743	358	255	180	129	111	104	209	91	206	75	51
21	603	356	255	179	127	111	101	196	594	197	74	51
22	529	356	246	171	125	115	98	186	1360	189	73	51
23	476	348	242	170	125	119	95	177	735	182	74	51
24	447	344	239	170	125	122	91	171	548	175	81	51
25	421	339	237	170	125	136	100	161	439	171	74	51
26	404	332	234	169	125	131	328	151	393	165	73	50
27	392	328	233	166	124	146	825	145	370	160	73	50
28	379	324	230	165	122	177	608	140	350	155	73	50
29	369	321	228	161	---	167	457	133	329	149	72	50
30	358	314	224	157	---	162	404	127	314	144	70	50
31	348	---	221	157	---	161	---	123	---	139	69	---
TOTAL	16978	11485	8195	5799	3926	3860	5739	7092	7260	6872	2797	1673
MEAN	548	383	264	187	140	125	191	229	242	222	90.2	55.8
MAX	3630	477	307	221	160	177	825	423	1360	348	136	67
MIN	320	314	221	157	122	111	91	123	73	139	69	50
AC-FT	33680	22780	16250	11500	7790	7660	11380	14070	14400	13630	5550	3320

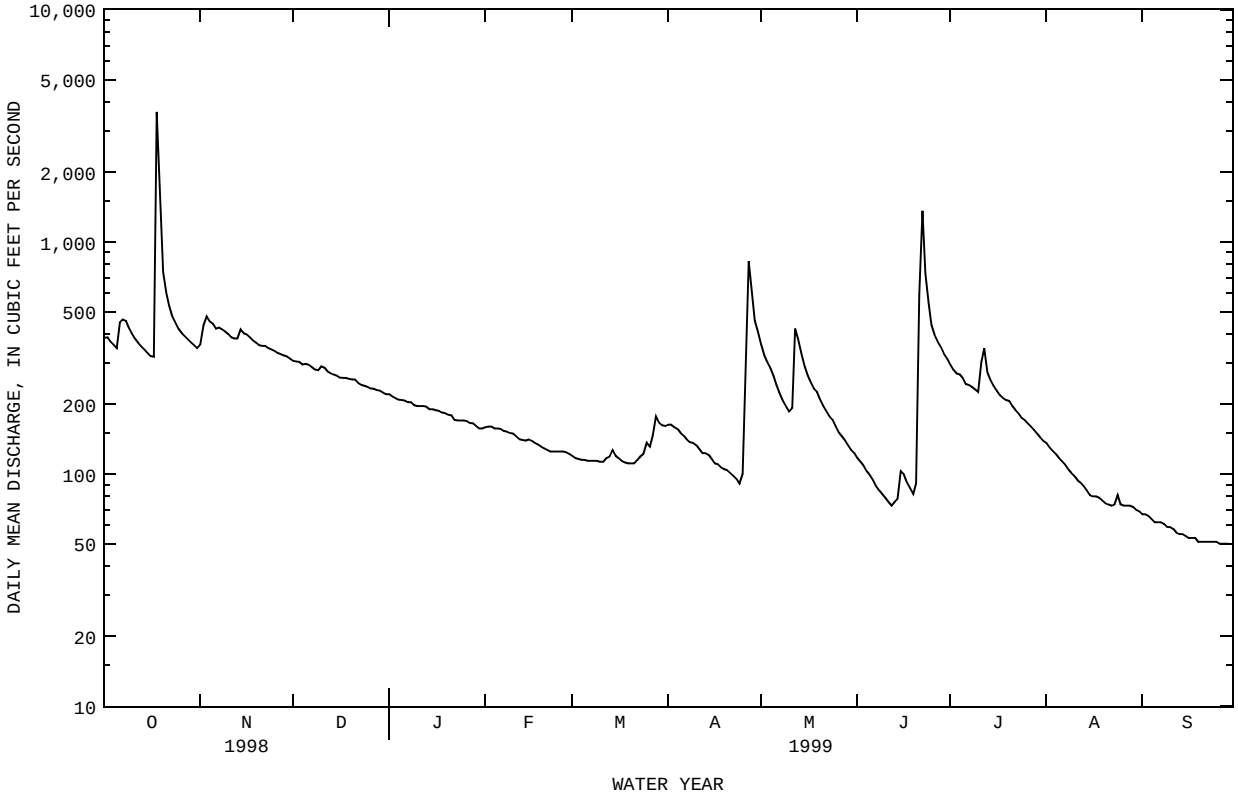
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1999, BY WATER YEAR (WY)

MEAN	273	90.1	81.4	71.1	96.6	62.9	75.8	101	270	141	216	226
MAX	3153	383	811	656	2487	909	785	972	3496	1525	4057	3081
(WY)	1974	1999	1992	1985	1949	1992	1977	1987	1958	1976	1998	1964
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1953	1952	1952	1952	1952	1952	1953	1953	1951	1951	1951

08192000 NUECES RIVER BELOW UVALDE, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1939 - 1999	
ANNUAL TOTAL	190300		81676			
ANNUAL MEAN	521		224		142	
HIGHEST ANNUAL MEAN					678	1997
LOWEST ANNUAL MEAN					3.63	1956
HIGHEST DAILY MEAN	41100	Aug 25	3630	Oct 18	51600	Oct 29 1996
LOWEST DAILY MEAN	11	Jul 26	50	Sep 26	.00	May 10 1951
ANNUAL SEVEN-DAY MINIMUM	11	Jul 30	50	Sep 24	.00	Jun 18 1951
INSTANTANEOUS PEAK FLOW			10200	Oct 18	i201000	Oct 28 1996
INSTANTANEOUS PEAK STAGE			11.21	Oct 18	a24.88	Oct 28 1996
ANNUAL RUNOFF (AC-FT)	377500		162000		102800	
10 PERCENT EXCEEDS	482		395		203	
50 PERCENT EXCEEDS	42		169		27	
90 PERCENT EXCEEDS	14		73		3.0	

a From floodmark.
i From indirect measurement of peak flow.



08192000 NUECES RIVER BELOW UVALDE, TX--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--May 1989 to current year. Unpublished records May 1989 to Sep 1998.

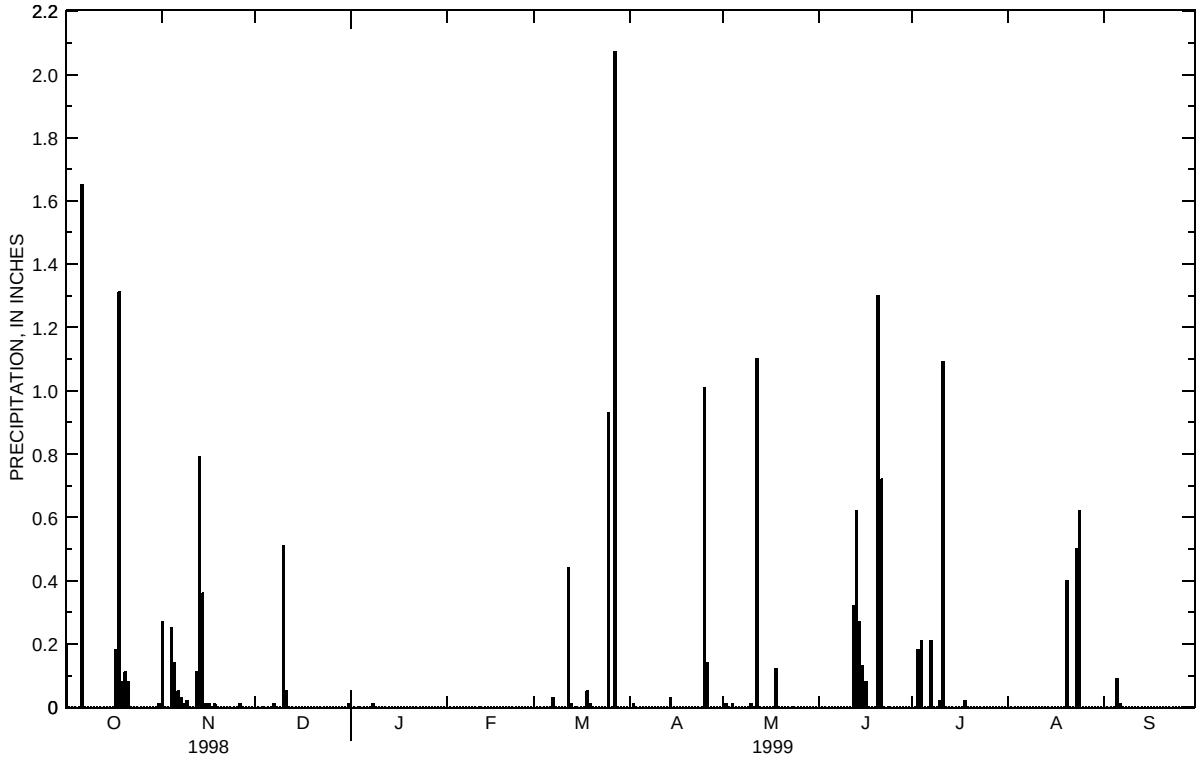
INSTRUMENTATION.--Recording tipping bucket rain gage at site.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 2.07 in., Mar 27.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.18	.00	.00
4	.00	.25	.00	.00	.00	.00	.00	.01	.00	.21	.00	.00
5	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09
6	1.65	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
7	.00	.03	.01	.00	.00	.03	.00	.00	.00	.21	.00	.00
8	.00	.01	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.51	.00	.00	.00	.00	.01	.00	.02	.00	.00
11	.00	.00	.05	.00	.00	.00	.00	.00	.00	1.09	.00	.00
12	.00	.11	.00	.00	.00	.44	.00	1.10	.32	.00	.00	.00
13	.00	.79	.00	.00	.00	.01	.00	.00	.62	.00	.00	.00
14	.00	.36	.00	.00	.00	.00	.03	.00	.27	.00	.00	.00
15	.00	.01	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00
16	.00	.01	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00
17	.18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	1.31	.01	.00	.00	.00	.05	.00	.12	.00	.02	.00	.00
19	.08	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
20	.11	.00	.00	.00	.00	.00	.00	.00	1.30	.00	.40	.00
21	.08	.00	.00	.00	.00	.00	.00	.00	.72	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.62	.00
25	.00	.00	.00	.00	.00	.93	1.01	.00	.00	.00	.00	.00
26	.00	.01	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	2.07	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.01	---	.01	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	3.62	2.07	0.58	0.01	0.00	3.54	1.19	1.25	3.44	1.73	1.52	0.10
MAX	1.65	.79	.51	.01	.00	2.07	1.01	1.10	1.30	1.09	.62	.09
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00


PRECIPITATION, IN INCHES
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
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1998
1999

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 mi^2.

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 sea level. Prior to Feb 2, 1940, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. 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. Since Mar 1948, at least 10% of contributing drainage area has been regulated by Upper Nueces Reservoir (normal storage, 7,590 acre-ft), 13 mi upstream. There are many small diversions above station for irrigation.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--8 years (water years 1940-48), 140 ft^3/s (101,700 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1940-48).--Maximum discharge, 24,000 ft^3/s Sep 2, 1944 (gage height 30.40, corrected); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 33 ft Jun 17, 1935; flood of Jun 30, 1913, reached about same stage, from information by local residents.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	478	456	355	231	138	78	160	386	83	424	78	76
2	470	443	345	238	138	74	158	349	75	370	72	59
3	458	437	338	223	134	71	157	332	63	329	67	49
4	444	468	340	215	126	70	153	310	51	314	60	43
5	435	508	332	201	123	69	147	279	43	310	54	38
6	513	505	329	191	127	67	139	253	37	285	47	35
7	540	495	326	198	132	65	131	225	35	262	40	35
8	734	484	313	201	139	61	128	200	31	245	36	35
9	953	481	303	197	136	59	121	184	25	231	33	34
10	1070	475	305	187	133	56	115	177	21	239	32	34
11	870	458	311	185	132	51	103	160	19	445	32	32
12	648	441	311	184	122	46	99	177	16	288	25	31
13	522	444	307	178	114	45	95	228	32	269	18	29
14	475	508	300	167	114	53	89	309	87	290	13	27
15	445	499	295	158	121	60	82	343	255	262	13	24
16	418	490	289	155	119	69	71	322	606	246	12	21
17	401	479	285	153	112	65	66	294	594	233	12	19
18	484	470	278	150	106	70	62	278	504	206	11	19
19	1900	459	274	151	101	70	60	258	404	185	9.5	19
20	3520	445	266	154	98	66	59	236	348	174	7.6	19
21	2390	434	263	154	94	67	56	230	776	165	5.8	19
22	1510	421	256	154	91	68	55	227	2040	158	4.0	16
23	1230	414	252	167	92	65	49	214	3270	143	e100	12
24	924	410	251	164	102	65	43	195	3470	126	e400	9.5
25	709	407	247	155	104	62	37	175	3490	117	1990	8.8
26	617	392	246	152	95	68	57	157	3020	109	1470	7.9
27	566	383	247	156	88	93	72	147	1770	101	473	7.1
28	551	379	243	158	81	156	107	129	821	97	309	6.7
29	526	375	238	148	---	183	430	112	577	91	222	6.2
30	497	369	236	143	---	190	453	99	488	84	147	4.9
31	472	---	232	139	---	170	---	90	---	81	103	---
TOTAL	25770	13429	8913	5407	3212	2452	3554	7075	23051	6879	5895.9	776.1
MEAN	831	448	288	174	115	79.1	118	228	768	222	190	25.9
MAX	3520	508	355	238	139	190	453	386	3490	445	1990	76
MIN	401	369	232	139	81	45	37	90	16	81	4.0	4.9
AC-FT	51110	26640	17680	10720	6370	4860	7050	14030	45720	13640	11690	1540

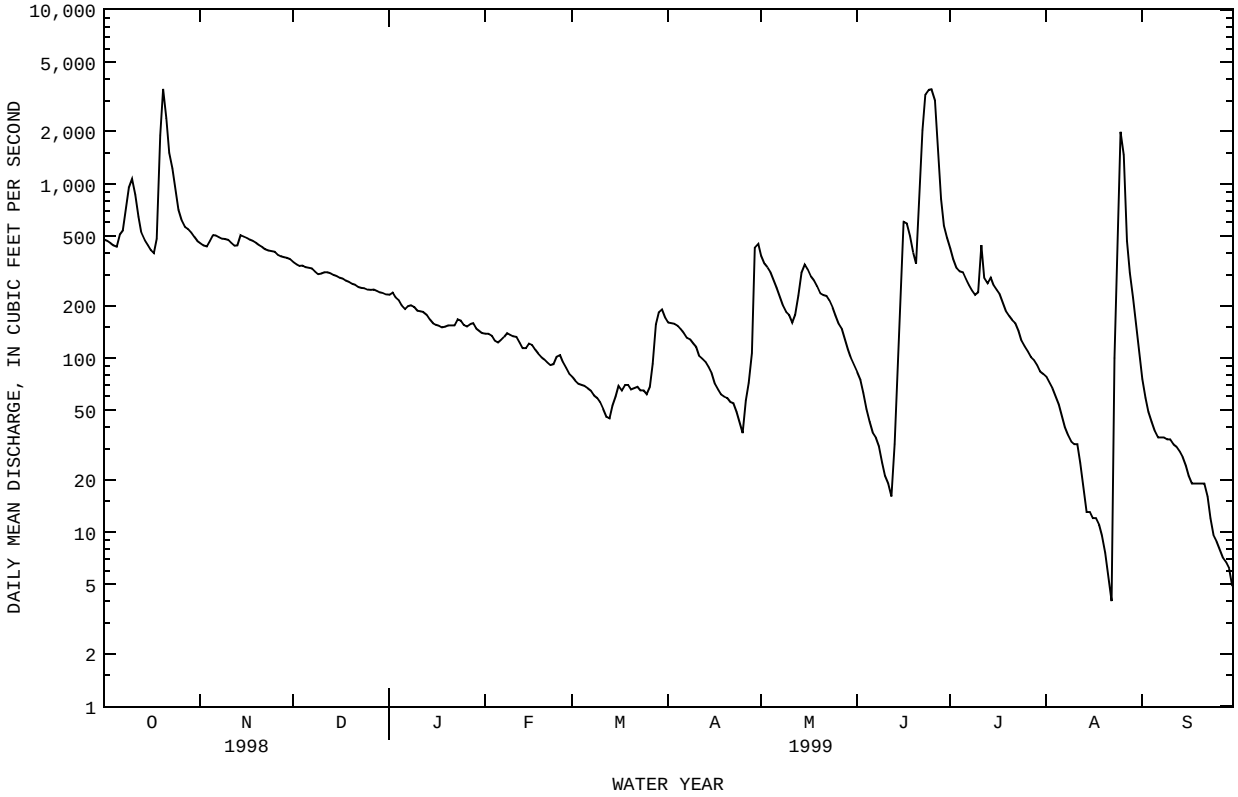
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1999z, BY WATER YEAR (WY)

MEAN	378	107	60.0	65.7	80.8	79.4	96.8	234	457	221	247	286
MAX	3254	831	537	724	1498	1347	1256	1738	4349	1845	5246	3674
(WY)	1960	1997	1992	1985	1949	1949	1957	1957	1987	1971	1971	1964
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1951	1949	1949	1950	1950	1950	1956	1953	1951	1951	1952

08193000 NUECES RIVER NEAR ASHERTON, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1949 - 1999z	
ANNUAL TOTAL	174764.72		106414.0			
ANNUAL MEAN	479		292		193	
HIGHEST ANNUAL MEAN					700	1971
LOWEST ANNUAL MEAN					.003	1989
HIGHEST DAILY MEAN	17900	Aug 28	3520	Oct 20	24800	Oct 6 1959
LOWEST DAILY MEAN	.00	May 10	4.0	Aug 22	.00	Oct 1 1948
ANNUAL SEVEN-DAY MINIMUM	.00	May 10	7.3	Sep 24	.00	Oct 1 1948
INSTANTANEOUS PEAK FLOW			3740	Oct 20	28500	Oct 6 1959
INSTANTANEOUS PEAK STAGE			21.35	Oct 20	30.88	Oct 6 1959
ANNUAL RUNOFF (AC-FT)	346600		211100		139900	
10 PERCENT EXCEEDS	749		501		293	
50 PERCENT EXCEEDS	1.1		158		.26	
90 PERCENT EXCEEDS	.00		32		.00	

e Estimated
z Period of regulated streamflow.



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 mi^2.

PERIOD OF RECORD.--Nov 1923 to current year. Nov 1923 to Sep 1926 monthly discharge only, published in WSP 1312; figures of daily discharge for Oct 31, 1923, to Sep 30, 1926, published in WSP 588, 608, and 628, have been found to be unreliable and should not be used. Gage-height records collected in this vicinity in 1914-17 and since 1922 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1732: 1957(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 368.08 ft above sea level. From Oct 31, 1923, to Aug 3, 1924, nonrecording gage at approximate site of present gage at datum 7.28 ft higher. Aug 4, 1924, to Nov 19, 1934, nonrecording gage at site 5,000 ft downstream at datum 8.42 ft higher. From Nov 20, 1934, to Jul 14, 1938, water-stage recorder, and Jul 15, 1938, to Apr 30, 1963, nonrecording gage, at present site and datum. Satellite telemeter at station.

REMARKS.--Records good. 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. Since Mar 1948, at least 10% of contributing drainage area has been regulated by Upper Nueces Reservoir (normal storage 7,590 acre-ft). There are many small diversions above station for irrigation.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1927-48), 315 ft^3/s (228,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1927-48).--Maximum discharge 82,600 ft^3/s Jun 13, 1935 (gage height 32.4 ft from flood marks), by slope-area method; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jun 19, 1899, reached a stage of 29.7 ft, from information by local residents. Maximum stage since at least 1879, that of Jun 18, 1935.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	515	519	361	241	136	82	229	277	105	1410	84	687
2	488	478	356	239	134	74	235	356	97	834	81	394
3	463	447	346	238	133	66	218	366	91	473	79	273
4	448	425	336	243	132	63	199	336	84	393	73	196
5	434	432	328	234	130	60	181	314	75	353	69	152
6	457	459	326	223	123	60	165	296	66	332	62	127
7	477	502	323	209	118	61	149	271	60	315	57	110
8	520	505	318	197	119	60	141	247	54	291	51	93
9	563	490	314	202	125	59	130	223	49	266	44	80
10	738	475	308	204	131	57	123	196	48	249	39	73
11	913	466	301	204	131	54	116	180	46	233	35	63
12	1020	463	299	193	125	52	110	181	40	293	33	54
13	1060	458	301	189	123	58	101	163	35	399	30	48
14	928	511	302	186	118	49	94	168	29	298	29	42
15	643	492	300	180	110	43	89	220	41	271	25	37
16	498	524	296	171	108	39	84	275	53	280	24	35
17	493	517	292	158	112	44	76	304	233	262	22	32
18	598	499	288	154	113	53	69	309	419	246	21	31
19	716	482	283	151	108	61	63	291	531	232	22	30
20	786	468	278	149	101	61	59	275	503	205	22	28
21	1060	453	273	149	97	63	55	259	439	184	24	27
22	2090	435	265	150	93	61	55	239	474	174	23	24
23	3060	421	264	150	87	57	51	234	567	166	53	21
24	2470	409	262	149	84	57	48	229	776	155	354	19
25	1880	399	257	158	83	59	51	214	941	141	618	18
26	1540	393	254	166	90	58	46	195	1110	126	5830	18
27	1180	390	251	154	97	60	41	179	1590	118	11400	17
28	877	380	249	147	92	71	35	161	2320	112	7450	e16
29	689	371	249	146	---	87	47	148	2560	103	4020	15
30	608	366	247	149	---	139	92	135	2080	98	2200	14
31	558	---	243	143	---	180	---	118	---	91	1300	---
TOTAL	28770	13629	9070	5626	3153	2048	3152	7359	15516	9103	34174	2774
MEAN	928	454	293	181	113	66.1	105	237	517	294	1102	92.5
MAX	3060	524	361	243	136	180	235	366	2560	1410	11400	687
MIN	434	366	243	143	83	39	35	118	29	91	21	14
AC-FT	57070	27030	17990	11160	6250	4060	6250	14600	30780	18060	67780	5500

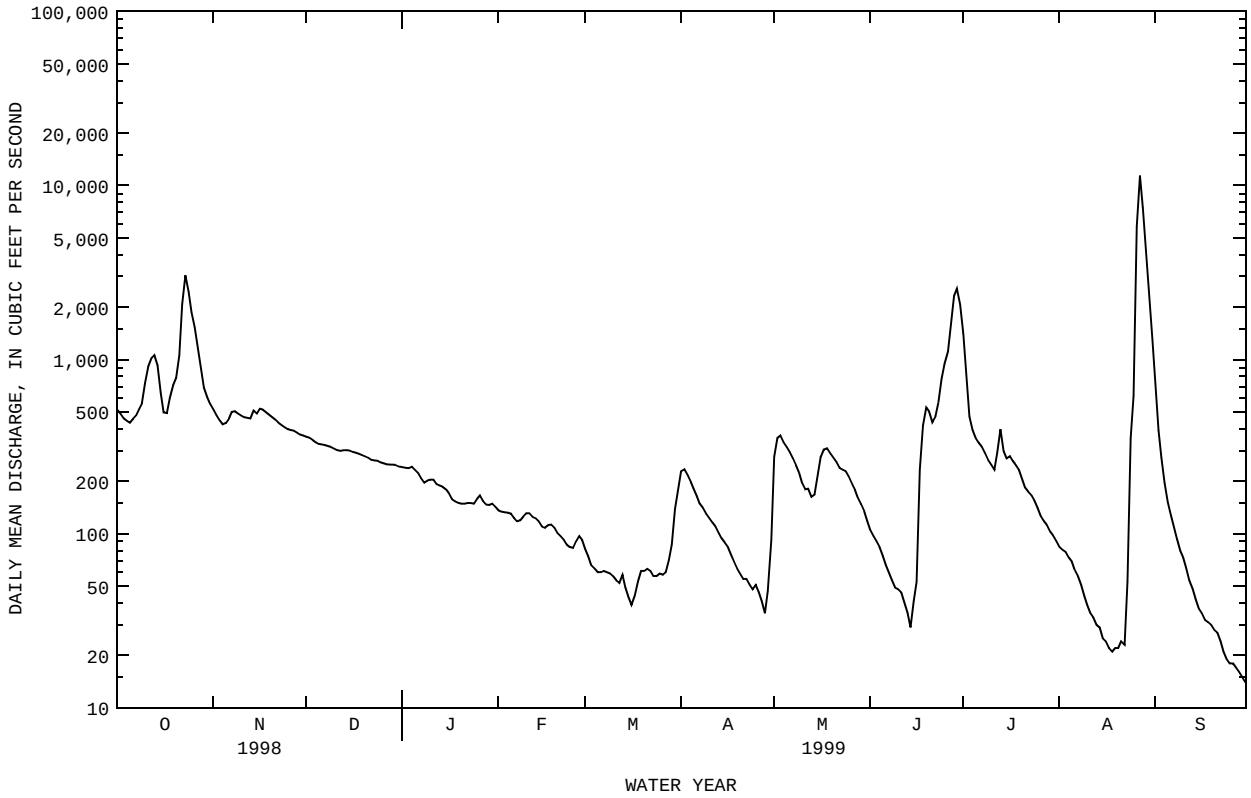
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1999z, BY WATER YEAR (WY)

MEAN	489	145	62.9	71.0	54.9	99.9	112	255	544	294	291	373
MAX	3906	1098	414	761	619	2351	1444	1873	5280	3922	6412	5417
(WY)	1960	1977	1970	1985	1992	1949	1957	1957	1987	1971	1971	1964
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1951	1949	1949	1951	1950	1950	1956	1953	1951	1951	1951

08194000 NUECES RIVER AT COTULLA, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1949 - 1999z	
ANNUAL TOTAL	174380.63		134374			
ANNUAL MEAN	478		368		233	
HIGHEST ANNUAL MEAN					1003	1971
LOWEST ANNUAL MEAN					2.24	1989
HIGHEST DAILY MEAN	16900	Aug 31	11400	Aug 27	37400	Sep 18 1964
LOWEST DAILY MEAN	.00	Feb 26	14	Sep 30	.00	Oct 8 1948
ANNUAL SEVEN-DAY MINIMUM	.00	Feb 26	17	Sep 24	.00	Oct 8 1948
INSTANTANEOUS PEAK FLOW			12100	Aug 27	46000	Sep 17 1964
INSTANTANEOUS PEAK STAGE			19.52	Aug 27	27.75	Sep 17 1964
ANNUAL RUNOFF (AC-FT)	345900		266500		169100	
10 PERCENT EXCEEDS	915		579		372	
50 PERCENT EXCEEDS	9.6		180		.61	
90 PERCENT EXCEEDS	.00		42		.00	

e Estimated
z Period of regulated streamflow.



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 mi^2.

PERIOD OF RECORD.--Jan 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 298 ft above sea level, from Texas Department of Transportation datum. Satellite telemeter at station.

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

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 ft^3/s), occurred in 1954, from information by Texas Department of Transportation.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 29	unknown	1,260	a17.10	Aug 26	0230	7,360	21.86

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	10	.05	.09	e.07	e.00	e9.1
2	.00	.00	.00	.00	.00	.00	6.8	.04	.30	e.03	e.00	e2.7
3	.00	.00	.00	.00	.00	.00	4.8	.04	.09	e.00	e.00	.46
4	.00	.00	.00	.00	.00	.00	2.0	.04	.06	e.00	e.00	.15
5	.00	.00	.00	.00	.00	.00	.88	.04	.04	e.00	.00	e.08
6	.00	.00	.00	.00	.00	.00	.74	.02	.04	e.00	e.00	e.05
7	.00	.00	.00	.00	.00	.00	.43	.00	.03	e.00	e.00	e.05
8	.00	.00	.00	.00	.00	.00	.43	.00	.02	e.00	e.00	e.05
9	.00	.00	.00	.00	.00	.00	.30	.00	.01	e.00	e.00	e.04
10	.00	.00	.00	.00	.00	.00	.20	.02	.01	e.00	e.00	e.04
11	.00	.00	.00	.00	.00	.00	.14	.04	.00	e.00	e.00	e.03
12	.00	.00	.00	.00	.00	.00	.08	.04	.00	e.00	e.00	e.03
13	.00	.00	.00	.00	.00	.00	.07	.01	.00	e.00	e.00	e.02
14	.00	.00	.00	.00	.00	.00	.06	.00	.00	e.00	e.00	e.02
15	.00	.00	.00	.00	.00	.00	.05	.00	.01	e.00	e.00	e.01
16	.00	.00	.00	.00	.00	.00	.04	.00	26	e.00	e.00	e.01
17	.00	.00	.00	.00	.00	.00	.04	.00	e47	e.00	e.00	e.00
18	.00	.00	.00	.00	.00	.00	.04	.09	e28	e.00	e.04	e.00
19	.00	.00	.00	.00	.00	.00	.03	.07	e18	e.00	e.11	e.00
20	.00	.00	.00	.00	.00	.00	.03	.04	e12	e.00	e.36	e.00
21	.00	.00	.00	.00	.00	.00	.03	.01	e9.1	e.00	e1.0	e.00
22	.00	.00	.00	.00	.00	.00	.03	.00	e5.7	e.00	e2.7	e.00
23	.00	.00	.00	.00	.00	.00	.02	.00	e4.8	e.00	e27	e.00
24	.00	.00	.00	.00	.00	.00	.02	.00	e3.2	e.00	584	e.00
25	.00	.00	.00	.00	.00	.00	.09	.00	e.36	e.00	3060	e.00
26	.00	.00	.00	.00	.00	.00	.43	.03	57	e.00	e5720	e.00
27	.00	.00	.00	.00	.00	e.00	.09	3.5	e36	e.00	e1870	e.00
28	.00	.00	.00	.00	.00	e400	.09	3.5	e2.3	e.00	e617	e.00
29	.00	.00	.00	.00	---	e583	.09	.36	e.52	e.00	e284	e.00
30	.00	.00	.00	.00	---	e71	.07	.14	e.14	e.00	e135	e.00
31	.00	---	.00	.00	---	28	---	.07	---	e.00	e36	---
TOTAL	0.00	0.00	0.00	0.00	0.00	1082.00	28.12	8.15	250.82	0.10	12337.21	12.84
MEAN	.000	.000	.000	.000	.000	34.9	.94	.26	8.36	.003	398	.43
MAX	.00	.00	.00	.00	.00	583	10	3.5	57	.07	5720	9.1
MIN	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	2150	56	16	498	.2	24470	25

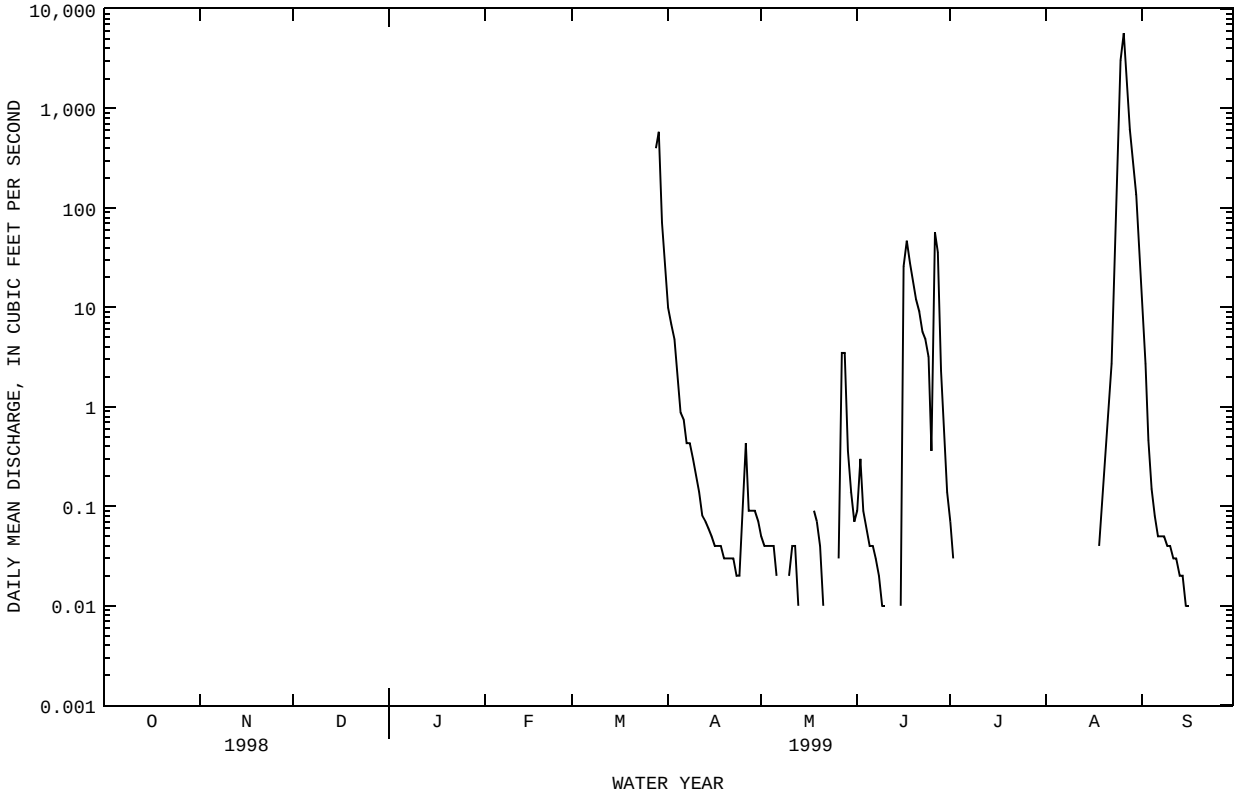
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

MEAN	123	17.7	8.11	2.07	2.23	8.67	18.7	115	78.9	15.6	34.8	136
MAX	3021	288	247	40.2	19.5	145	297	747	606	365	398	2367
(WY)	1972	1986	1977	1977	1973	1985	1985	1981	1981	1976	1999	1967
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1964	1965	1965	1962	1962	1962	1965	1962	1965	1965	1963	1965

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1962 - 1999	
ANNUAL TOTAL	2602.55		13719.24			
ANNUAL MEAN	7.13		37.6		47.8	
HIGHEST ANNUAL MEAN					323	1972
LOWEST ANNUAL MEAN					2.44	1984
HIGHEST DAILY MEAN	1150	Aug 17	5720	Aug 26	36600	Oct 17 1971
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Jan 1 1962
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Jan 1 1962
INSTANTANEOUS PEAK FLOW			7360	Aug 26	82000	Oct 17 1971
INSTANTANEOUS PEAK STAGE			21.86	Aug 26	26.87	Oct 17 1971
ANNUAL RUNOFF (AC-FT)	5160		27210		34630	
10 PERCENT EXCEEDS	.00		.80		16	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
a From floodmark.

08194200 SAN CASIMIRO CREEK NEAR FREER, TX--Continued



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 mi^2.

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 sea level. 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 Nuecec River below Uvalde (station 08192000). Some loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Since Mar 1948, at least 10% of contributing drainage area has been regulated by Upper Nueces Reservoir (normal storage 7,590 acre-ft). There are many small diversions above station for irrigation.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--6 years (water years 1943-48), 510 ft^3/s (369,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1943-48).--Maximum discharge 57,500 ft^3/s, Oct 11, 1946 (gage height 26.46 ft), from rating curve extended above 46,400 ft^3/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in Jun 1935 reached a stage of 23.7 ft and in Jul 1942 about 22 ft, from information by local residents. Maximum stage since about 1902, that of Sep 24, 1967.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1580	2050	368	261	146	62	1140	27	97	761	67	3840
2	1160	1960	360	258	147	64	1240	24	86	802	64	4830
3	592	1560	356	254	145	64	1340	29	74	845	61	5510
4	486	657	352	251	137	61	1360	129	64	896	57	4680
5	445	475	346	248	132	57	654	250	56	963	54	3890
6	473	441	339	246	129	52	245	286	51	1040	52	3300
7	509	437	331	251	126	49	188	267	47	1120	50	2710
8	693	433	324	249	124	46	155	242	43	1190	47	2010
9	853	442	321	241	119	45	135	222	39	1060	43	461
10	987	461	318	228	112	44	120	201	34	410	40	130
11	1010	470	316	218	109	43	108	178	29	271	38	91
12	746	463	313	218	110	43	99	170	23	240	35	71
13	627	455	308	222	112	46	91	145	21	204	29	59
14	675	478	300	222	114	45	84	129	30	183	25	52
15	746	488	298	215	110	46	77	123	22	236	22	47
16	815	522	300	207	107	47	71	112	15	317	20	43
17	877	527	302	204	104	45	63	107	27	257	19	40
18	909	497	302	199	97	38	58	137	84	215	18	38
19	739	487	298	190	92	34	55	191	180	214	15	37
20	540	483	294	180	91	31	52	231	235	200	13	35
21	597	472	290	171	92	277	49	237	417	182	11	32
22	714	456	286	166	90	617	45	220	563	165	9.9	28
23	812	442	283	161	84	748	41	200	584	144	13	25
24	882	429	278	157	78	846	39	183	581	127	15	22
25	943	415	e275	155	73	938	36	163	591	118	28	20
26	1010	402	e272	156	70	880	39	151	592	112	398	19
27	1110	391	e268	157	66	203	45	148	607	106	650	18
28	1250	383	265	159	63	194	36	142	638	97	790	17
29	1430	379	263	168	---	522	35	139	687	86	990	17
30	1670	375	262	161	---	915	31	125	728	78	1320	16
31	1920	---	260	150	---	1070	---	109	---	72	2200	---
TOTAL	27800	17930	9448	6323	2979	8172	7731	5017	7245	12711	7193.9	32088
MEAN	897	598	305	204	106	264	258	162	242	410	232	1070
MAX	1920	2050	368	261	147	1070	1360	286	728	1190	2200	5510
MIN	445	375	260	150	63	31	31	24	15	72	9.9	16
AC-FT	55140	35560	18740	12540	5910	16210	15330	9950	14370	25210	14270	63650

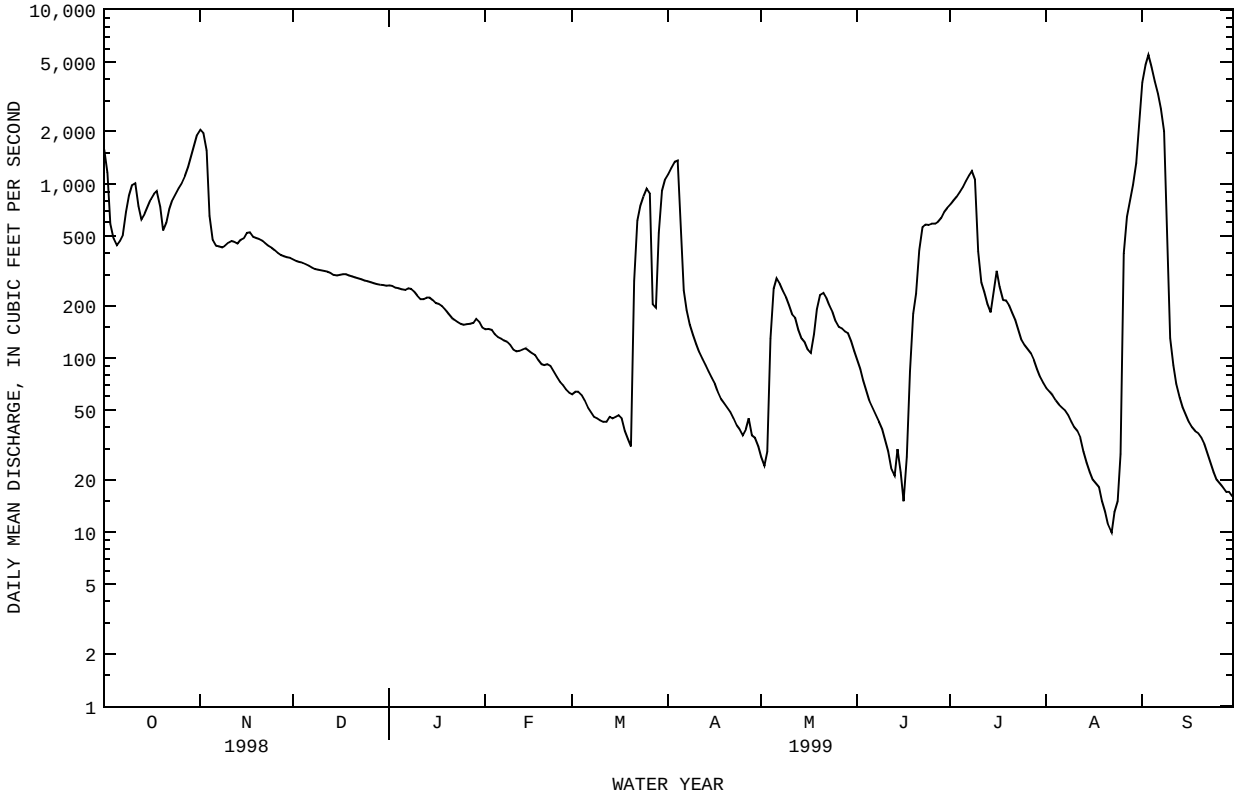
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1999z, BY WATER YEAR (WY)

MEAN	826	278	94.8	119	151	118	165	517	698	421	345	729
MAX	11250	3509	1275	1912	4793	2104	2028	4122	5404	6291	7197	10150
(WY)	1972	1977	1977	1958	1958	1949	1949	1957	1987	1971	1971	1967
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1953	1951	1951	1964	1954	1955	1971	1998	1953	1951	1952

08194500 NUECES RIVER NEAR TILDEN, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1949 - 1999z	
ANNUAL TOTAL	163111.76		144637.9			
ANNUAL MEAN	447		396		372	
HIGHEST ANNUAL MEAN					1736	1971
LOWEST ANNUAL MEAN					14.0	1989
HIGHEST DAILY MEAN	13000	Sep 5	5510	Sep 3	70000	Sep 24 1967
LOWEST DAILY MEAN	.00	Apr 21	9.9	Aug 22	.00	Oct 15 1948
ANNUAL SEVEN-DAY MINIMUM	.00	Apr 21	14	Aug 18	.00	Jan 6 1949
INSTANTANEOUS PEAK FLOW			5710	Sep 3	76500	Sep 24 1967
INSTANTANEOUS PEAK STAGE			18.51	Sep 3	26.57	Sep 24 1967
ANNUAL RUNOFF (AC-FT)	323500		286900		269800	
10 PERCENT EXCEEDS	1120		924		740	
50 PERCENT EXCEEDS	3.5		191		7.3	
90 PERCENT EXCEEDS	.00		34		.00	

e Estimated
z Period of regulated streamflow.



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 1998 TO SEPTEMBER 1999

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)
DEC												
01...	1440	367	510	8.1	21.0	--	--	220	30	66	13	18
MAR												
09...	1325	45	593	8.0	22.0	8.2	95	210	57	57	16	37
MAY												
27...	1506	148	473	--	28.0	6.7	87	190	35	53	13	21
AUG												
25...	1130	14	449	7.7	31.0	6.0	81	170	20	47	11	27

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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)
DEC												
01...	.5	15	2.0	190	26	32	.12	--	274	<.010	1.12	<.020
MAR												
09...	1	27	2.1	150	48	63	.14	2.6	320	<.010	.305	<.020
MAY												
27...	.7	19	1.7	150	27	34	.14	10	253	<.010	.756	.035
AUG												
25...	.9	26	3.3	150	29	40	.14	7.7	255	<.010	<.050	.025

DATE	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	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)
DEC											
01...	--	.19	<.050	.022	.07	<1.0	<1.0	1	76	<1.0	<1.0
MAR											
09...	--	.13	<.050	.011	.03	<1.0	<1.0	1	92	<1.0	<1.0
MAY											
27...	.19	.22	<.050	.030	.09	<1.0	<1.0	2	81	<1.0	<1.0
AUG											
25...	.19	.22	E.039	.035	.11	<1.0	<1.0	2	90	<1.0	<1.0

DATE	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)	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)
DEC											
01...	1.9	<1.0	<1.0	--	<1.0	--	<1.0	<.1	<1.0	<1.0	1
MAR											
09...	7.7	<1.0	1.4	<10	<1.0	6	3.1	<.1	1.1	2.1	<1
MAY											
27...	<1.0	<1.0	1.5	<10	<1.0	<6	1.1	<.1	1.0	<1.0	<1
AUG											
25...	<1.0	<1.0	1.4	<10	<1.0	10	3.1	<.1	1.2	1.4	<1

08194500 NUECES RIVER NEAR TILDEN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)
DEC											
01...	<1.0	--	--	<1.0	<1.0	<.010	<.010	<.010	<.010	<.010	<.010
MAR											
09...	<1.0	361	<10	1.8	1.0	<.010	<.010	<.010	<.010	<.010	<.010
MAY											
27...	<1.0	305	E9	<1.0	<1.0	<.010	<.010	<.010	<.010	<.010	<.010
AUG											
25...	<1.0	281	E9	<1.0	<1.0	<.010	<.010	<.010	<.010	<.010	<.010

DATE	TOTAL TRI-THION (UG/L) (39786)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)
DEC											
01...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
MAR											
09...	<.010	<.010	<.010	<.030	<.010	<.010	<.040	<.010	<.010	<.010	<.010
MAY											
27...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
AUG											
25...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1923 to Sep 1929, Oct 1930 to current year.
Water-quality data.--Chemical data: Jun 1952, Dec 1964 to Jul 1965, Aug 1968 to Sep 1993, Apr 1996 to Apr 1998; Biochemical data: Aug 1968 to Sep 1993, Apr 1996 to Apr 1998; Pesticide data: Aug 1968 to Sepember 1993; Sediment data: Apr 1996 to Apr 1998.

REVISED RECORDS.--WSP 1342: Drainage area. WSP 1512: 1926, 1931-32, 1934(M), 1935-36. WSP 1712: 1958. WSP 1923: 1954(M), 1957(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,203.71 ft above sea level. Oct 26, 1923, to Jul 28, 1924, nonrecording gage at site 86 ft upstream at datum 5.08 ft lower. Jul 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 good. No known regulation. Many small diversions for irrigation above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1869, that of July 1, 1932, from information by local residents.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 18	0330	3,640	7.06	Jun 21	2145	1,260	5.48
Apr 25	2345	760	5.01				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	161	283	180	129	102	86	105	158	89	190	105	66
2	158	317	180	126	102	84	105	151	88	181	103	65
3	158	289	177	122	100	83	102	148	85	174	100	65
4	158	266	176	122	98	83	101	150	81	170	98	64
5	158	267	175	122	98	84	97	143	80	166	95	63
6	166	276	171	122	98	83	93	131	80	160	94	67
7	168	272	167	122	98	84	92	123	77	154	91	66
8	166	257	163	120	95	86	92	121	77	155	91	63
9	160	249	162	117	95	84	92	117	75	150	91	67
10	153	235	177	115	95	83	92	115	72	144	89	67
11	148	228	175	115	96	87	89	119	72	212	86	64
12	145	222	165	115	92	89	89	150	70	202	85	62
13	143	222	163	115	92	91	86	151	101	191	83	60
14	140	247	159	113	92	86	86	141	79	175	80	60
15	137	247	155	111	92	83	84	135	108	164	78	58
16	137	242	154	111	92	83	83	131	106	156	77	58
17	137	235	150	109	92	83	83	126	86	150	75	56
18	957	230	150	108	92	89	83	132	81	149	75	56
19	276	228	147	111	90	90	83	127	80	144	72	56
20	241	224	145	111	89	86	80	131	88	140	72	54
21	227	219	145	111	89	86	80	123	464	135	71	53
22	e213	213	142	108	89	83	80	118	637	133	70	52
23	e203	206	141	105	86	83	79	114	349	132	70	52
24	e196	202	137	105	86	83	77	109	280	128	72	52
25	e188	199	137	105	87	85	197	105	244	122	75	52
26	e181	196	137	105	89	88	500	102	244	121	75	52
27	e176	194	133	105	89	89	288	99	236	116	72	52
28	e171	194	133	105	87	115	215	98	220	115	70	52
29	e167	190	130	103	---	108	182	95	204	111	70	50
30	163	186	129	102	---	102	167	92	200	108	67	48
31	158	---	129	102	---	102	---	92	---	107	67	---
TOTAL	6110	7035	4784	3492	2602	2731	3682	3847	4753	4655	2519	1752
MEAN	197	235	154	113	92.9	88.1	123	124	158	150	81.3	58.4
MAX	957	317	180	129	102	115	500	158	637	212	105	67
MIN	137	186	129	102	86	83	77	92	70	107	67	48
AC-FT	12120	13950	9490	6930	5160	5420	7300	7630	9430	9230	5000	3480
CFSM	.51	.60	.40	.29	.24	.23	.32	.32	.41	.39	.21	.15
IN.	.58	.67	.46	.33	.25	.26	.35	.37	.45	.45	.24	.17

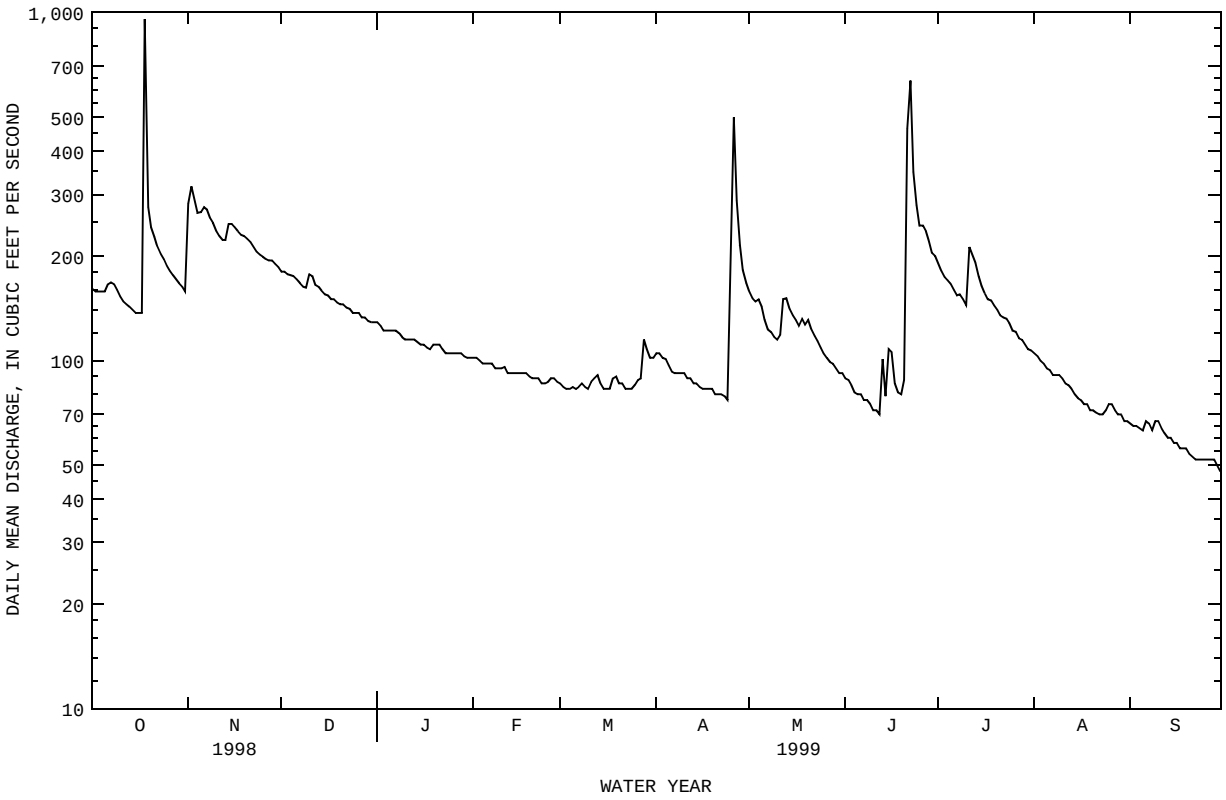
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1999h, BY WATER YEAR (WY)

MEAN	147	102	101	90.6	96.6	97.4	108	136	189	168	111	141
MAX	648	391	767	525	613	762	859	1041	2468	2823	1050	1333
(WY)	1970	1959	1992	1992	1992	1992	1981	1935	1935	1932	1971	1936
MIN	.000	.000	.000	3.01	8.25	11.8	8.52	6.48	1.08	1.25	.019	.000
(WY)	1957	1957	1957	1957	1957	1956	1956	1956	1956	1953	1956	1956

08195000 FRIO RIVER AT CONCAN, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1924 - 1999h	
ANNUAL TOTAL	73701		47962			
ANNUAL MEAN	202		131		124	
HIGHEST ANNUAL MEAN					434	1992
LOWEST ANNUAL MEAN					8.80	1956
HIGHEST DAILY MEAN	21100	Aug 23	957	Oct 18	52000	Jul 1 1932
LOWEST DAILY MEAN	21	Aug 4	48	Sep 30	.00	Aug 5 1956
ANNUAL SEVEN-DAY MINIMUM	22	Jul 30	51	Sep 24	.00	Aug 5 1956
INSTANTANEOUS PEAK FLOW			3640	Oct 18	i162000	Jul 1 1932
INSTANTANEOUS PEAK STAGE			7.06	Oct 18	a34.44	Jul 1 1932
ANNUAL RUNOFF (AC-FT)	146200		95130		89800	
ANNUAL RUNOFF (CFSM)	.52		.34		.32	
ANNUAL RUNOFF (INCHES)	7.05		4.59		4.33	
10 PERCENT EXCEEDS	252		214		198	
50 PERCENT EXCEEDS	98		108		69	
90 PERCENT EXCEEDS	40		70		19	

e Estimated
a From floodmark.
i From indirect measurement of peak flow.
h See Period of Record paragraph



08195000 FRIO RIVER AT CONCAN, TX--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--Jun 1993 to current year. Unpublished records Jun 1993 to Sep 1998.

INSTRUMENTATION.--Recording tipping bucket rain gage at site.

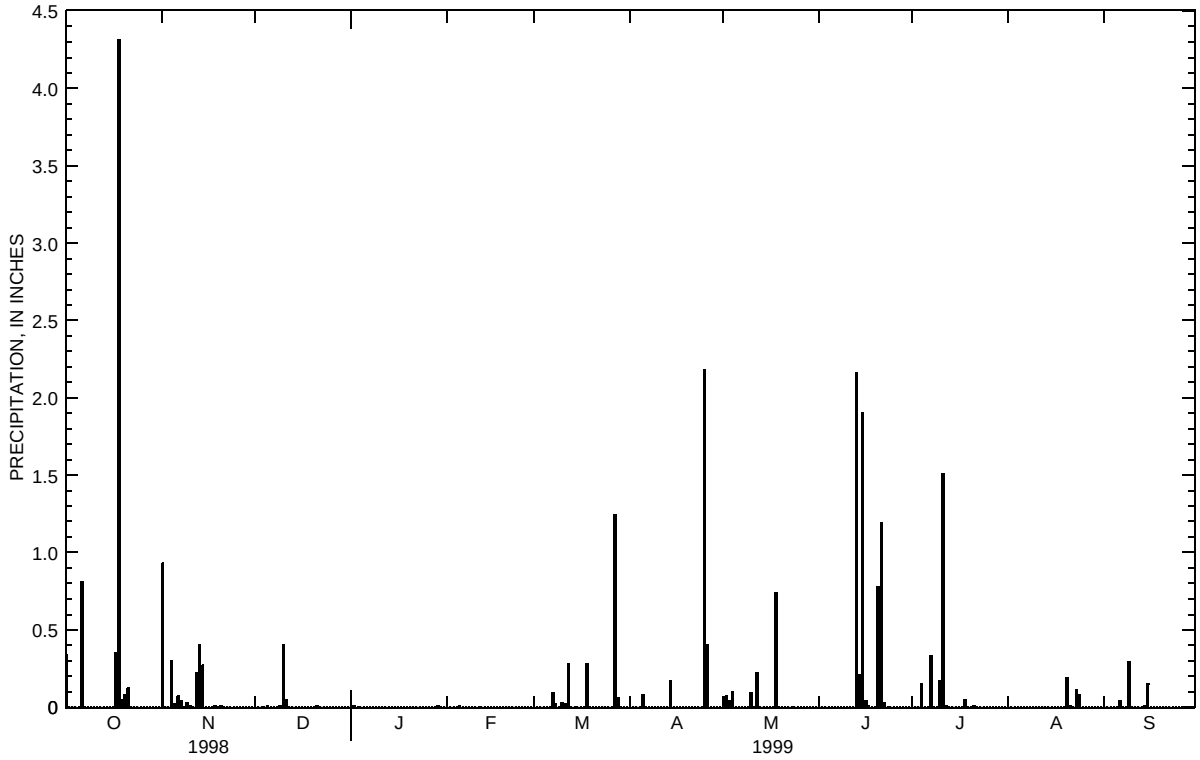
REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 4.31 in., Oct 18.

PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	.93	.00	.01	.00	.00	---	.01	.00	.00	.00	.00
2	.00	.00	.00	.01	.00	.00	---	.07	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	---	.04	.00	.00	.00	.00
4	.00	.30	.00	.00	.00	.00	.00	.10	.00	.15	.00	.00
5	.00	.02	.01	.00	.01	.00	.08	.00	.00	.00	.00	.00
6	.81	.07	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04
7	.00	.04	.00	.00	.00	.09	.00	.00	.00	.33	.00	.00
8	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
9	.00	.03	.01	.00	.00	.00	.00	.00	.00	.00	.00	.29
10	.00	.01	.40	.00	.00	.03	.00	.09	.00	.17	.00	.00
11	.00	.00	.05	.00	.00	.02	.00	.00	.00	1.51	.00	.00
12	.00	.22	.00	.00	.00	.28	.00	.22	.00	.01	.00	.00
13	.00	.40	.00	.00	.00	.00	.00	.00	2.16	.00	.00	.00
14	.00	.27	.00	.00	.00	.00	.17	.00	.21	.00	.00	.01
15	.00	.00	.00	.00	.00	.00	.00	.00	1.90	.00	.00	.15
16	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00
17	.35	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
18	4.31	.01	.00	.00	.00	.28	.00	.74	.00	.05	.00	.00
19	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.08	.01	.00	.00	.00	.00	.00	.00	.78	.00	.19	.00
21	.12	.00	.01	.00	.00	.00	.00	.00	1.19	.01	.01	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00
25	.00	.00	.00	.00	.00	.00	2.18	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	1.24	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.01	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	---	---	.00	---	.00	.00	---
TOTAL	6.06	2.31	0.48	0.03	0.01	---	---	1.27	6.32	2.23	0.39	0.49
MAX	4.31	.93	.40	.01	.01	---	---	.74	2.16	1.51	.19	.29
MIN	.00	.00	.00	.00	.00	---	---	.00	.00	.00	.00	.00

08195000 FRIO RIVER AT CONCAN, TX--Continued



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 mi^2.

PERIOD OF RECORD.--Sep 1952 to current year.
Water-quality records.--Chemical data: Jan 1966 to Sep 1993. Biochemical data: Jan 1966 to Sep 1993. Pesticide data: Jan 1974 to Sep 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 sea level, 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.

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 ft^3/s, determined at site 2.6 mi upstream), and flood of Jul 1, 1932, reached a stage of 23 ft (discharge, 30,700 ft^3/s, determined at site 2.0 mi upstream), from information by local residents.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 18	0345	12,500	a14.89	Apr 26	0030	378	3.25
Nov 1	1015	253	2.79	Jun 21	1245	3,810	8.36

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	188	55	27	21	16	22	21	14	46	e18	8.4
2	51	182	53	27	21	16	21	19	14	40	e17	8.0
3	42	151	52	26	21	15	20	19	16	36	e16	7.5
4	37	135	51	26	21	15	19	19	15	34	e15	7.4
5	34	130	49	26	20	15	18	18	14	31	e14	7.7
6	111	121	48	26	21	15	17	17	14	28	e13	5.5
7	85	117	46	26	21	16	17	16	13	26	e12	6.5
8	64	110	43	25	21	16	18	16	13	20	11	7.0
9	58	106	42	25	21	15	18	16	12	16	e11	8.4
10	55	98	52	25	20	15	17	17	11	27	e11	15
11	52	89	47	25	19	15	16	17	12	51	e12	8.3
12	50	86	43	25	19	16	15	19	12	48	e11	6.7
13	48	87	41	25	19	18	15	19	20	48	e11	6.3
14	46	105	39	24	19	18	15	19	19	43	e10	6.2
15	44	103	37	24	19	16	14	19	24	39	e10	6.0
16	43	97	36	23	18	16	13	19	29	e37	e10	5.8
17	43	92	34	22	18	15	12	19	23	e35	e9.8	5.0
18	2010	88	33	22	18	18	13	23	22	e33	e9.8	4.2
19	298	85	33	22	18	17	17	24	22	e32	e9.7	4.1
20	208	80	33	22	18	16	18	23	24	e30	e9.7	4.0
21	175	76	33	22	17	16	20	21	839	e29	e9.6	4.0
22	155	73	32	22	17	15	20	21	363	e28	e9.6	3.7
23	137	71	30	22	16	15	19	20	179	e26	e9.6	3.4
24	123	68	30	22	16	15	17	19	118	e25	e9.6	3.2
25	114	67	30	21	16	15	45	19	89	e24	e9.5	3.2
26	107	64	28	21	18	15	154	18	125	e23	e9.5	3.5
27	98	62	28	21	18	17	45	18	90	e22	e9.5	3.5
28	96	60	28	21	17	26	25	16	72	e21	e9.4	3.4
29	89	60	28	21	---	24	22	16	62	e20	9.4	3.3
30	83	58	27	21	---	23	22	15	54	e19	9.3	3.1
31	78	---	27	21	---	22	---	14	---	e18	8.5	---
TOTAL	4668	2909	1188	728	528	522	724	576	2334	955	344.5	172.3
MEAN	151	97.0	38.3	23.5	18.9	16.8	24.1	18.6	77.8	30.8	11.1	5.74
MAX	2010	188	55	27	21	26	154	24	839	51	18	15
MIN	34	58	27	21	16	15	12	14	11	16	8.5	3.1
AC-FT	9260	5770	2360	1440	1050	1040	1440	1140	4630	1890	683	342
CFSM	1.20	.77	.30	.19	.15	.13	.19	.15	.62	.24	.09	.05
IN.	1.38	.86	.35	.21	.16	.15	.21	.17	.69	.28	.10	.05

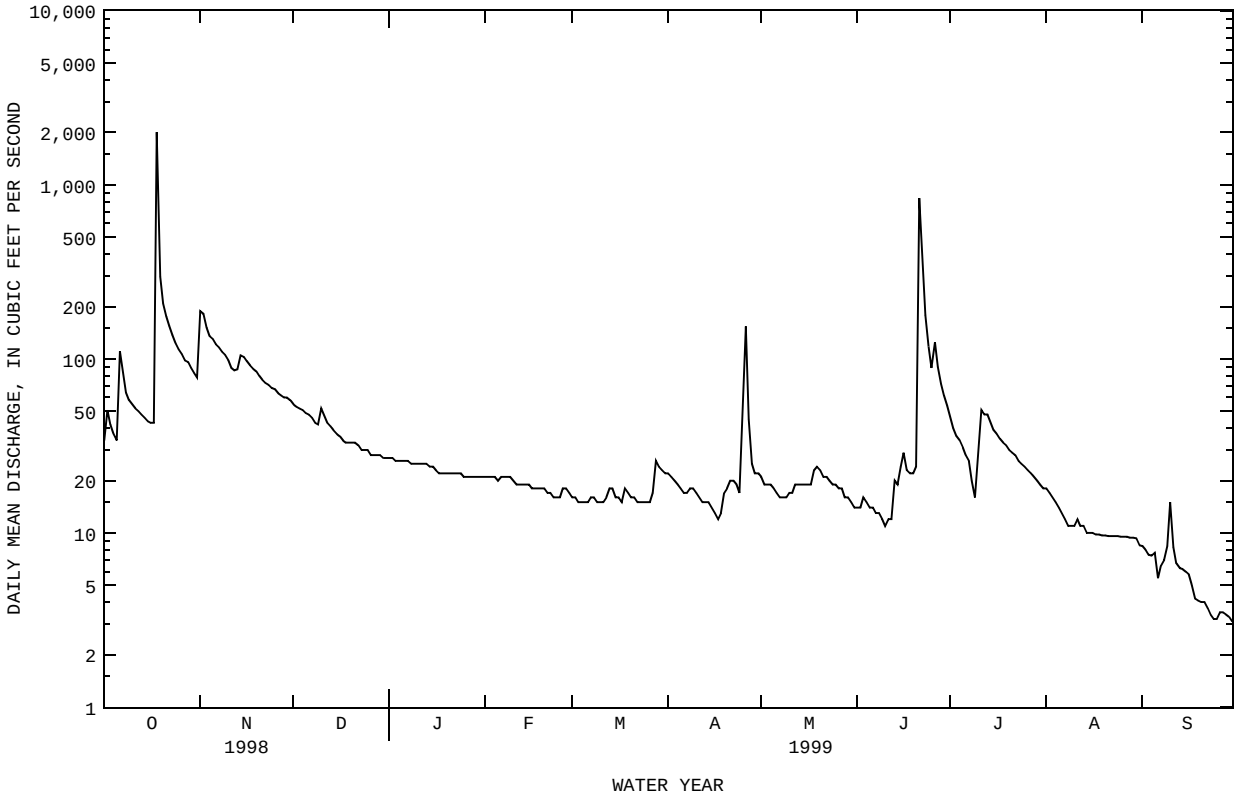
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1999, BY WATER YEAR (WY)

MEAN	56.9	30.7	27.7	22.5	24.3	28.2	29.6	38.9	63.9	37.0	38.3	37.9
MAX	258	134	185	120	131	208	257	338	483	277	365	277
(WY)	1970	1968	1992	1992	1992	1992	1981	1987	1987	1976	1966	1958
MIN	.000	.000	.055	.51	.87	2.24	1.50	.86	.19	.077	.000	.000
(WY)	1957	1957	1957	1957	1957	1954	1956	1956	1953	1953	1956	1956

08196000 DRY FRIO RIVER NEAR REAGAN WELLS, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1952 - 1999	
ANNUAL TOTAL	23753.2		15648.8			
ANNUAL MEAN	65.1		42.9		36.4	
HIGHEST ANNUAL MEAN					121	1987
LOWEST ANNUAL MEAN					2.99	1956
HIGHEST DAILY MEAN	5440	Aug 23	2010	Oct 18	8100	Aug 13 1966
LOWEST DAILY MEAN	1.4	Aug 6	3.1	Sep 30	.00	Jul 10 1953
ANNUAL SEVEN-DAY MINIMUM	1.5	Aug 1	3.3	Sep 24	.00	Jul 30 1953
INSTANTANEOUS PEAK FLOW			12500	Oct 18	i123000	Aug 13 1966
INSTANTANEOUS PEAK STAGE			a14.89	Oct 18	a27.60	Aug 13 1966
ANNUAL RUNOFF (AC-FT)	47110		31040		26390	
ANNUAL RUNOFF (CFSM)	.52		.34		.29	
ANNUAL RUNOFF (INCHES)	7.01		4.62		3.93	
10 PERCENT EXCEEDS	105		88		64	
50 PERCENT EXCEEDS	22		21		15	
90 PERCENT EXCEEDS	3.1		9.6		2.4	

e Estimated
i From indirect measurement of peak flow.
a From floodmark.



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 mi^2.

PERIOD OF RECORD.--Sep 1952 to current year. Sum of records published as Frio River at Knippa and Dry Frio River at Knippa for period Sep 1952 to Sep 1953 is equivalent to record for this station.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 882.47 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. 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.

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.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 18	0945	27,900	15.28	Jun 22	0645	1,380	5.94

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	90	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.5	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.96	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.45	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00
18	5170	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00
19	242	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00
20	23	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
21	4.7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	1.6	.00	.00	.00	.00	.00	.00	.00	723	.00	.00	.00
23	1.3	.00	.00	.00	.00	.00	.00	.00	147	.00	.00	.00
24	1.1	.00	.00	.00	.00	.00	.00	.00	41	.00	.00	.00
25	1.0	.00	.00	.00	.00	.00	.00	.00	4.0	.00	.00	.00
26	.85	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00
27	.65	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.57	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.45	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.37	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.30	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	5447.89	1.18	0.00	0.00	0.00	0.00	0.00	0.00	915.14	97.58	0.00	0.00
MEAN	176	.039	.000	.000	.000	.000	.000	.000	30.5	3.15	.000	.000
MAX	5170	.27	.00	.00	.00	.00	.00	.00	723	90	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	10810	2.3	.00	.00	.00	.00	.00	.00	1820	194	.00	.00

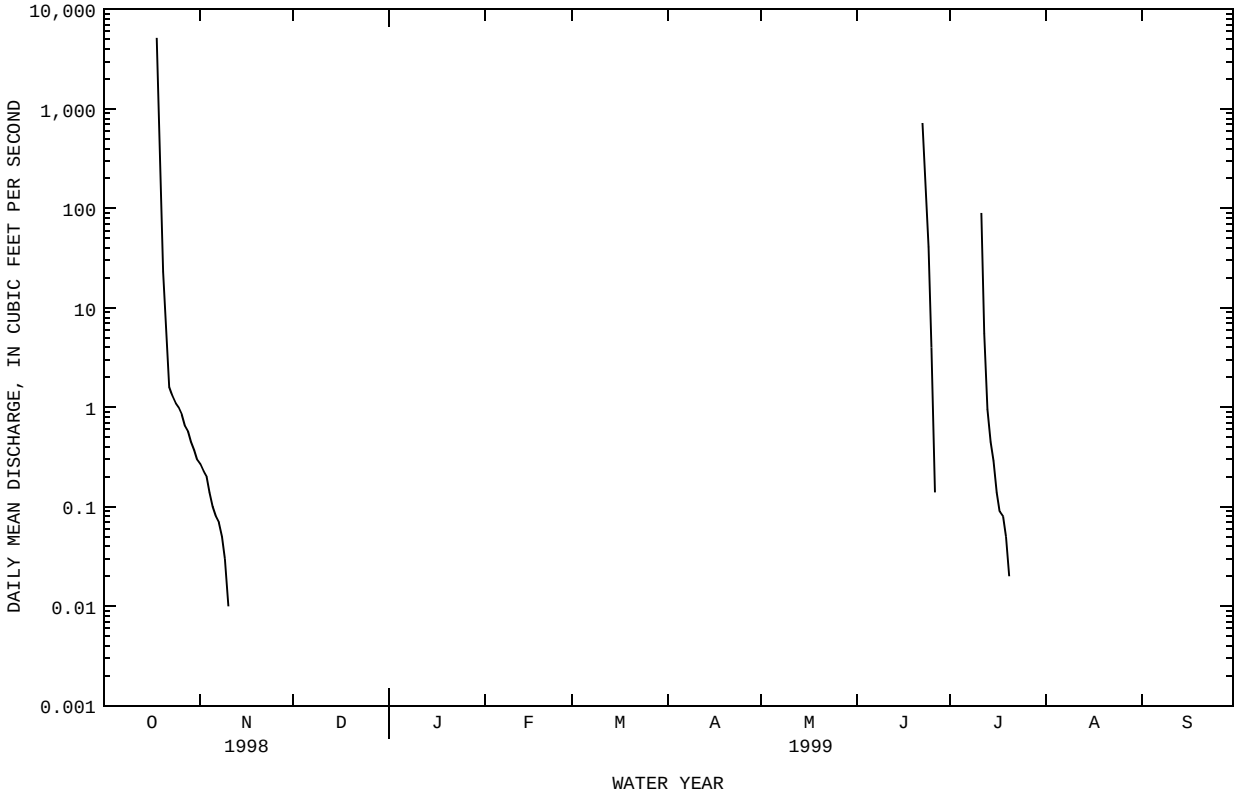
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1999h, BY WATER YEAR (WY)

MEAN	77.8	3.94	28.4	10.9	6.93	11.3	27.1	37.9	121	35.7	70.2	47.7
MAX	842	81.3	710	241	300	455	702	865	1584	597	1224	699
(WY)	1997	1959	1985	1992	1992	1992	1981	1987	1997	1973	1998	1958
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1954	1954	1954	1954	1954	1954	1954	1955	1954	1954	1954	1954

08197500 FRIO RIVER BELOW DRY FRIO RIVER NEAR UVALDE, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1954 - 1999h	
ANNUAL TOTAL	44761.27		6461.79			
ANNUAL MEAN	123		17.7		40.1	
HIGHEST ANNUAL MEAN					221	1987
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	30000	Aug 24	5170	Oct 18	32300	Jun 22 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1 1953
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 1 1953
INSTANTANEOUS PEAK FLOW			27900	Oct 18	c100000	Jun 22 1997
INSTANTANEOUS PEAK STAGE			15.28	Oct 18	a25.09	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	88780		12820		29020	
10 PERCENT EXCEEDS	.25		.04		.15	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

c From rating curve extended above indirect measurement of 88,500 ft^3/s.
a From floodmark
h See PERIOD OF RECORD paragraph



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 mi^2.

PERIOD OF RECORD.--Oct 1942 to current year.
Water-quality data.--Chemical data: Nov 1964 to Jul 1965, Feb 1970 to Sep 1993, Apr 1996 to Apr 1998. Biochemical data: Feb 1970 to Sep 1993, Apr 1996 to Apr 1998. Pesticide data: Aug 1971 to Sep 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 sea level. Prior to Apr 9, 1971, at site 0.3 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. No known regulation. There are several small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1892, about 33 ft Jul 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.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 2	0230	2,100	7.49	Oct 18	0330	7,360	10.38

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	367	155	89	58	43	44	60	68	65	26	11
2	460	283	152	87	57	42	42	60	66	63	25	11
3	107	237	150	87	56	41	41	60	65	62	24	11
4	88	225	146	86	54	42	39	60	63	63	23	10
5	82	233	140	84	52	42	38	57	62	62	23	10
6	130	229	139	83	51	41	36	55	61	60	22	9.9
7	115	229	135	81	52	41	37	53	59	59	21	10
8	100	217	133	81	52	41	37	51	59	60	21	11
9	93	213	132	78	51	41	36	51	57	57	20	11
10	89	209	150	78	50	41	35	53	56	71	20	12
11	87	193	141	76	49	40	33	63	55	114	19	11
12	86	196	133	75	49	40	33	67	54	77	19	9.9
13	83	203	128	75	50	44	33	71	58	59	18	9.5
14	82	231	124	73	50	45	33	67	59	54	18	9.5
15	81	216	121	73	49	43	32	63	59	50	17	9.6
16	80	212	119	e73	49	41	33	61	58	47	17	9.0
17	82	209	115	e71	48	40	33	60	56	44	17	8.0
18	1770	206	113	e70	47	46	32	250	54	44	17	7.6
19	313	203	111	e68	46	42	32	120	53	42	15	7.6
20	273	200	108	e68	45	41	30	93	64	40	15	7.3
21	254	196	107	68	44	39	28	85	83	39	15	7.0
22	237	192	105	66	44	38	28	81	92	38	14	6.7
23	225	188	105	64	45	37	27	78	86	36	15	6.7
24	213	184	103	63	45	37	27	75	78	34	16	7.2
25	203	180	102	63	46	37	122	73	73	33	15	7.4
26	193	175	100	61	45	37	91	72	71	31	14	7.5
27	184	172	98	61	45	41	72	71	72	30	13	7.3
28	178	167	96	60	43	52	66	70	71	29	12	6.7
29	171	164	93	60	---	55	62	75	70	28	13	6.4
30	164	159	90	59	---	49	61	74	68	27	12	6.2
31	160	---	89	58	---	45	---	71	---	26	12	---
TOTAL	6443	6288	3733	2239	1372	1304	1293	2300	1950	1544	548	265.0
MEAN	208	210	120	72.2	49.0	42.1	43.1	74.2	65.0	49.8	17.7	8.83
MAX	1770	367	155	89	58	55	122	250	92	114	26	12
MIN	60	159	89	58	43	37	27	51	53	26	12	6.2
AC-FT	12780	12470	7400	4440	2720	2590	2560	4560	3870	3060	1090	526
CFSM	1.01	1.02	.58	.35	.24	.20	.21	.36	.32	.24	.09	.04
IN.	1.16	1.14	.67	.40	.25	.24	.23	.42	.35	.28	.10	.05

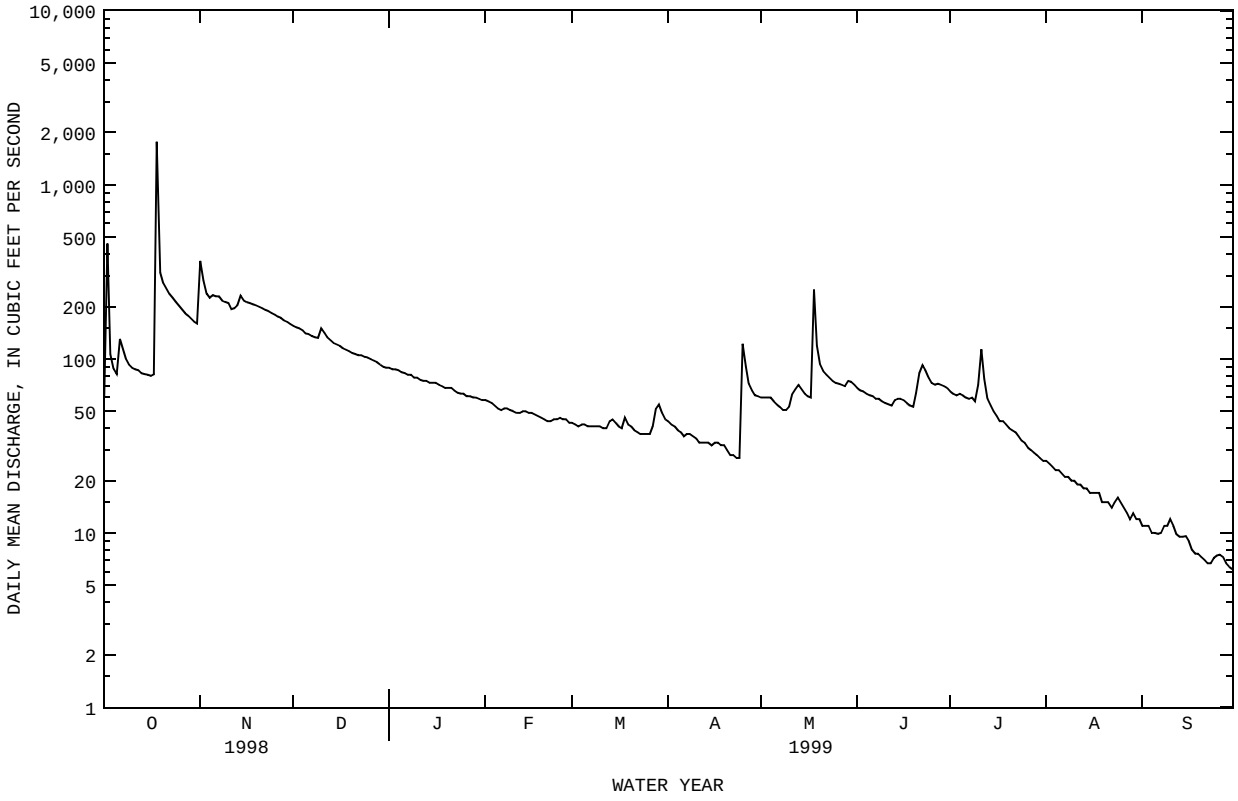
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1999, BY WATER YEAR (WY)

MEAN	67.7	51.0	50.3	46.7	52.7	58.8	58.1	69.2	125	78.5	57.8	50.0
MAX	318	321	612	408	584	624	392	389	1527	1035	669	306
(WY)	1972	1959	1992	1992	1992	1992	1992	1987	1987	1973	1971	1980
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1952	1952	1952	1952	1952	1952	1954	1953	1953	1953	1948	1951

08198000 SABINAL RIVER NEAR SABINAL, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1943 - 1999	
ANNUAL TOTAL	38331.5		29279.0			
ANNUAL MEAN	105		80.2		63.8	
HIGHEST ANNUAL MEAN					340	1992
LOWEST ANNUAL MEAN					.82	1955
HIGHEST DAILY MEAN	6900	Aug 23	1770	Oct 18	13000	Jun 17 1958
LOWEST DAILY MEAN	2.9	Aug 4	6.2	Sep 30	.00	Aug 10 1946
ANNUAL SEVEN-DAY MINIMUM	3.3	Jul 30	7.0	Sep 24	.00	Aug 10 1946
INSTANTANEOUS PEAK FLOW			7360	Oct 18	c56500	Jun 22 1997
INSTANTANEOUS PEAK STAGE			10.38	Oct 18	a28.50	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	76030		58070		46250	
ANNUAL RUNOFF (CFSM)	.51		.39		.31	
ANNUAL RUNOFF (INCHES)	6.92		5.29		4.21	
10 PERCENT EXCEEDS	194		182		122	
50 PERCENT EXCEEDS	53		59		26	
90 PERCENT EXCEEDS	8.6		14		.00	

e Estimated
c From rating curve extended above indirect measurement of 55,200 ft^3/s.
a From floodmark.



08198500 SABINAL RIVER AT SABINAL, TX

LOCATION.--Lat 29°18'05", long 99°28'46", Uvalde County, Hydrologic Unit 12110106, on left bank 80 ft downstream from bridge on U.S. Highway 90, 1,100 ft downstream from Southern Pacific Lines railroad bridge, 0.8 mi west of Sabinal, 5.8 mi upstream from Ranchero Creek, and 223 mi upstream from mouth.

DRAINAGE AREA.--241 mi^2.

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

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 882.17 ft above sea level. Prior to 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.--Records good. 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).

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 ft^3/s), from information by Southern Pacific Lines. Information indicates that a flood in 1858 covered the townsite of Sabinal. The stage would have been 70 to 80 ft, which seems unlikely. However, it is possible that a flood occurred in 1858 that covered part of the townsite and was higher than any flood since that date.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 18	0730	6,690	14.71	Jul 11	0800	208	5.87
Nov 1	2230	377	6.45	Jul 11	2145	143	5.49
Nov 14	1800	109	5.10				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	92	34	6.8	3.6	2.4	2.4	e2.1	1.8	1.8	e2.4	2.0
2	24	225	32	6.6	3.5	2.4	2.4	e2.1	1.7	1.7	e2.4	2.0
3	37	126	30	6.5	3.4	2.4	2.3	e2.1	1.7	1.7	e2.4	1.9
4	12	99	28	6.3	3.4	2.3	2.2	e2.0	1.8	1.7	e2.4	1.9
5	8.4	101	25	6.1	3.4	2.3	2.2	e2.0	1.8	1.7	e2.4	1.8
6	10	112	22	5.9	3.3	2.2	2.3	2.0	1.8	1.7	e2.3	1.9
7	8.1	106	20	5.8	3.2	2.2	2.3	1.9	1.7	1.6	e2.3	2.2
8	7.3	99	18	5.7	3.1	2.2	2.2	1.9	1.7	1.6	2.3	2.0
9	7.0	88	16	5.4	3.0	2.1	2.3	1.9	1.7	1.6	2.3	2.0
10	6.8	80	16	5.3	3.0	2.1	2.2	1.9	1.8	1.5	2.3	2.0
11	6.6	69	27	5.3	2.9	2.1	2.2	1.9	1.7	55	2.3	2.0
12	6.3	66	28	5.1	2.9	2.3	2.2	2.0	1.8	14	2.3	1.9
13	6.1	69	23	5.0	2.9	2.4	2.1	1.9	2.1	4.4	2.3	1.9
14	5.9	98	19	4.8	2.8	2.3	2.1	2.0	2.3	4.1	2.4	1.9
15	5.8	101	16	4.6	2.7	2.4	2.1	1.9	2.2	3.9	2.4	2.0
16	5.6	89	14	4.6	2.7	2.4	2.1	1.9	2.1	3.7	2.3	1.7
17	5.6	84	13	4.4	2.7	2.3	2.1	1.9	2.1	3.8	2.4	1.7
18	1470	80	12	4.3	2.6	2.3	2.1	1.9	2.2	3.7	2.5	1.7
19	283	77	11	4.3	2.6	2.3	2.0	1.8	2.1	3.4	2.5	1.6
20	185	73	11	4.1	2.6	2.2	2.0	1.8	2.8	3.3	2.4	1.5
21	152	69	9.9	4.0	2.6	2.2	2.1	1.8	3.1	3.1	2.6	1.5
22	129	66	9.7	3.9	2.6	2.2	2.1	1.8	2.2	3.1	2.5	1.4
23	111	63	9.5	4.1	2.7	2.1	2.0	1.7	2.1	3.0	2.6	1.4
24	98	59	9.0	4.3	2.7	2.1	1.9	1.7	2.1	3.0	3.1	1.3
25	87	56	8.6	4.1	2.7	2.1	2.4	1.7	2.1	2.9	2.7	1.3
26	79	52	8.4	4.0	2.6	2.2	2.3	1.6	2.1	2.9	2.4	1.3
27	69	48	8.1	4.0	2.5	2.6	2.1	1.7	2.1	2.7	2.2	1.3
28	60	46	7.8	3.9	2.5	2.7	e2.1	1.6	2.0	2.5	2.1	1.3
29	53	43	7.5	3.8	---	2.4	e2.1	1.7	2.0	e2.5	2.0	1.3
30	46	39	7.2	3.7	---	2.4	e2.1	1.8	1.9	e2.5	2.0	1.6
31	40	---	7.0	3.7	---	2.4	---	1.8	---	e2.5	2.0	---
TOTAL	3032.7	2475	507.7	150.4	81.2	71.0	65.0	57.8	60.6	146.6	73.5	51.3
MEAN	97.8	82.5	16.4	4.85	2.90	2.29	2.17	1.86	2.02	4.73	2.37	1.71
MAX	1470	225	34	6.8	3.6	2.7	2.4	2.1	3.1	55	3.1	2.2
MIN	5.6	39	7.0	3.7	2.5	2.1	1.9	1.6	1.7	1.5	2.0	1.3
AC-FT	6020	4910	1010	298	161	141	129	115	120	291	146	102

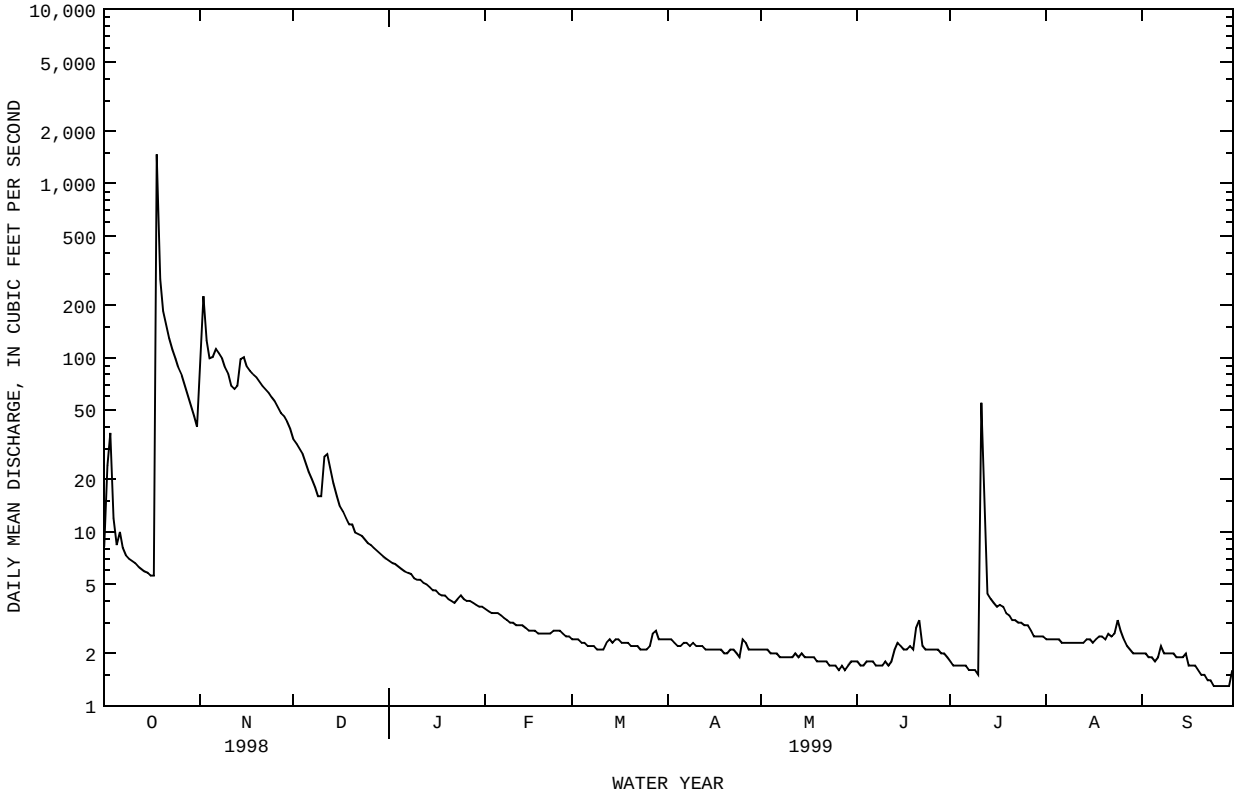
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1999, BY WATER YEAR (WY)

MEAN	36.4	16.1	19.7	15.5	21.3	25.1	27.6	34.1	116	58.1	36.7	22.1
MAX	261	219	498	292	510	535	349	427	1493	1066	709	210
(WY)	1970	1959	1992	1992	1992	1992	1992	1987	1987	1973	1971	1958
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1953	1953	1953	1953	1956	1956	1953	1953	1953	1962	1962

08198500 SABINAL RIVER AT SABINAL, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1953 - 1999	
ANNUAL TOTAL	15174.64		6772.8			
ANNUAL MEAN	41.6		18.6		35.7	
HIGHEST ANNUAL MEAN					265	1992
LOWEST ANNUAL MEAN					.070	1963
HIGHEST DAILY MEAN	6060	Aug 23	1470	Oct 18	17100	Jun 17 1958
LOWEST DAILY MEAN	.52	Jul 18	1.3	Sep 24	.00	Oct 1 1952
ANNUAL SEVEN-DAY MINIMUM	.53	Jul 18	1.3	Sep 23	.00	Oct 1 1952
INSTANTANEOUS PEAK FLOW			6690	Oct 18	c93500	Jun 22 1997
INSTANTANEOUS PEAK STAGE			14.71	Oct 18	a35.86	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	30100		13430		25860	
10 PERCENT EXCEEDS	71		55		44	
50 PERCENT EXCEEDS	4.2		2.5		1.6	
90 PERCENT EXCEEDS	.71		1.7		.10	

e Estimated
a From floodmark.
c From rating curve extended above current-meter discharge measurements of 43,400 ft^3/s and 71,300 ft^3/s.



08200000 HONDO CREEK NEAR TARPLEY, TX

LOCATION.--Lat 29°34'10", long 99°14'47", Medina County, Hydrologic Unit 12110107, on left bank 460 ft downstream from bridge on Ranch Road 462, 6.3 mi southeast of Tarpley, and 16.6 mi northwest of Hondo.

DRAINAGE AREA.--95.6 mi^2.

PERIOD OF RECORD.--Aug 1952 to current year.
Water-quality records.--Chemical data: Nov 1965 to Sep 1969, Feb 1970 to Sep 1993. Biochemical data: Feb 1970 to Sep 1993. Pesticide data: Aug 1971 to Sep 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, from Magnolia Oil Co. datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There are several small diversions for irrigation above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jul 1932 reached a stage of about 26 ft (discharge, 58,500 ft^3/s), from information by local resident. Maximum stage since at least 1907, that of Jun 17, 1958.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 2	0315	4,540	7.09	Oct 18	0330	5,290	7.69
Oct 6	0415	980	3.96				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	186	87	36	20	14	14	14	18	37	25	8.5
2	743	142	85	34	19	13	13	16	17	35	24	8.2
3	145	131	83	33	19	13	13	15	17	35	24	7.7
4	118	131	80	34	19	13	13	15	16	36	23	7.4
5	105	151	78	34	19	13	13	14	16	34	23	7.5
6	300	136	75	34	19	12	12	14	15	32	21	8.0
7	152	139	72	33	19	13	12	13	15	32	20	7.5
8	132	134	69	33	18	13	12	13	15	31	20	7.3
9	119	132	66	31	18	12	12	13	15	29	19	7.2
10	114	127	91	30	18	13	12	31	15	38	18	6.8
11	113	122	73	30	17	13	11	22	13	160	17	6.8
12	108	123	66	30	16	13	12	31	14	105	17	6.6
13	102	127	63	29	16	15	12	21	18	64	16	6.3
14	99	166	61	28	16	12	12	20	16	59	16	6.6
15	97	161	59	28	16	12	11	19	16	55	15	6.3
16	95	159	57	27	16	11	11	19	15	51	14	6.0
17	132	154	56	26	16	11	11	19	14	50	14	5.6
18	1520	151	55	26	16	16	11	42	14	48	14	5.5
19	347	147	54	26	15	15	11	24	14	47	13	5.3
20	281	141	52	26	16	12	11	22	36	44	12	5.2
21	240	134	52	26	15	12	11	22	99	42	12	5.0
22	213	130	49	24	15	11	11	22	85	40	12	4.9
23	192	127	48	24	13	11	11	22	63	38	12	4.9
24	174	123	46	24	14	11	11	21	54	36	12	4.4
25	163	119	45	23	14	11	17	20	50	34	12	4.5
26	152	114	44	22	15	11	47	20	60	33	11	4.6
27	143	112	43	22	14	13	18	20	46	31	11	4.3
28	134	105	39	22	14	23	15	19	43	30	10	4.1
29	125	101	38	22	---	15	14	19	41	29	9.4	4.0
30	117	93	37	21	---	14	14	18	39	28	9.2	3.9
31	112	---	37	20	---	13	---	18	---	26	8.7	---
TOTAL	6603	4018	1860	858	462	404	408	618	909	1389	484.3	180.9
MEAN	213	134	60.0	27.7	16.5	13.0	13.6	19.9	30.3	44.8	15.6	6.03
MAX	1520	186	91	36	20	23	47	42	99	160	25	8.5
MIN	16	93	37	20	13	11	11	13	13	26	8.7	3.9
AC-FT	13100	7970	3690	1700	916	801	809	1230	1800	2760	961	359
CFSM	2.23	1.40	.63	.29	.17	.14	.14	.21	.32	.47	.16	.06
IN.	2.57	1.56	.72	.33	.18	.16	.16	.24	.35	.54	.19	.07

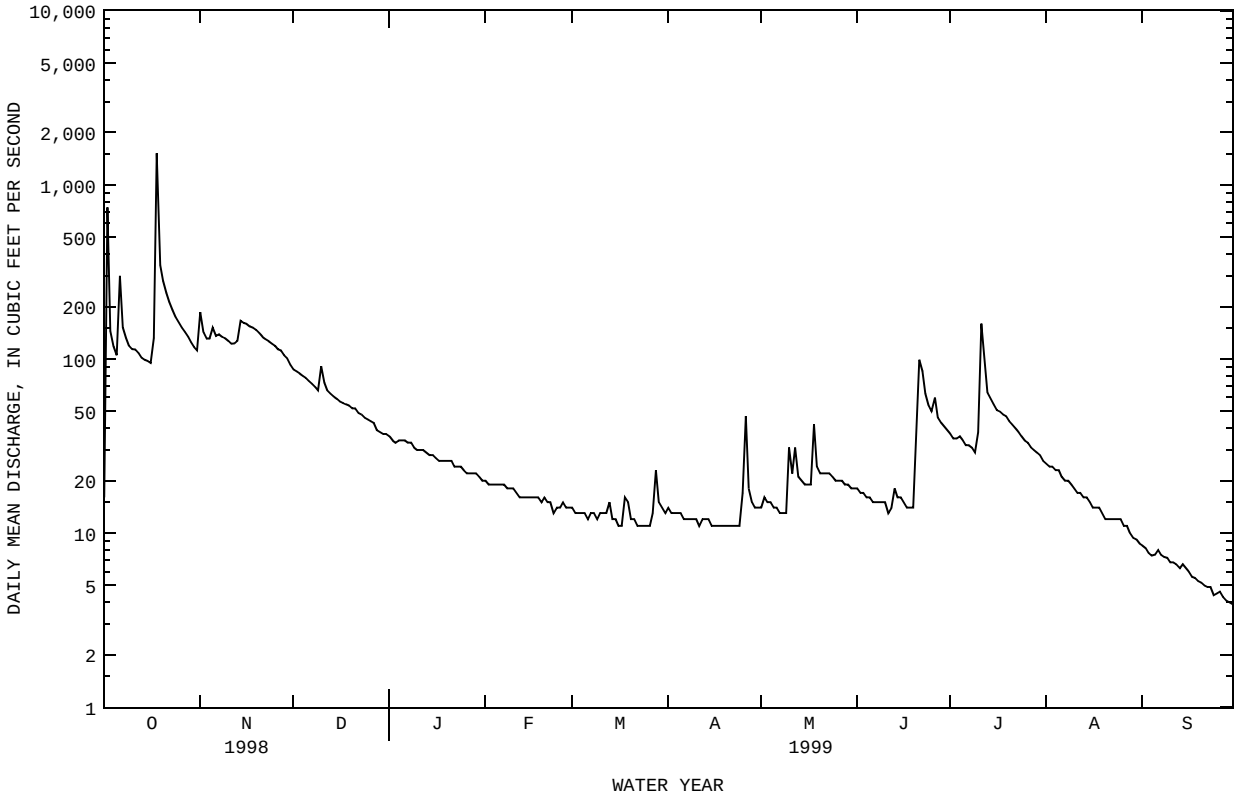
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1999, BY WATER YEAR (WY)

MEAN	37.1	26.7	33.1	26.4	34.0	36.8	37.5	65.0	98.9	38.8	38.0	27.7
MAX	254	134	541	172	342	323	178	402	1056	574	654	153
(WY)	1972	1999	1992	1992	1992	1992	1992	1987	1987	1973	1971	1958
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1956	1955	1955	1956	1956	1956	1956	1956	1996	1996	1984	1955

08200000 HONDO CREEK NEAR TARPLEY, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1952 - 1999	
ANNUAL TOTAL	24270.00		18194.2			
ANNUAL MEAN	66.5		49.8		41.7	
HIGHEST ANNUAL MEAN					205	1992
LOWEST ANNUAL MEAN					.41	1956
HIGHEST DAILY MEAN	3060	Aug 23	1520	Oct 18	11900	Jun 17 1958
LOWEST DAILY MEAN	.67	Aug 4	3.9	Sep 30	.00	Sep 1 1952
ANNUAL SEVEN-DAY MINIMUM	.89	Jul 29	4.3	Sep 24	.00	Sep 1 1952
INSTANTANEOUS PEAK FLOW			5290	Oct 18	c76900	Jun 22 1997
INSTANTANEOUS PEAK STAGE			7.69	Oct 18	a29.64	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	48140		36090		30200	
ANNUAL RUNOFF (CFSM)	.70		.52		.44	
ANNUAL RUNOFF (INCHES)	9.44		7.08		5.92	
10 PERCENT EXCEEDS	137		128		82	
50 PERCENT EXCEEDS	31		20		12	
90 PERCENT EXCEEDS	4.0		11		.20	

a From floodmark.
c From rating curve extended above indirect measurement of 69,800 ft^3/s.



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 mi^2.

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 sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. 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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 21 ft in Sep 1919, from information by local resident. Other outstanding floods occurred in Jul 1932, stage 18 ft, and Jun 17, 1958, stage 17 ft.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 2	0900	842	3.33	Oct 18	0630	11,700	8.89

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	138	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	1.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	2450	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	58	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	9.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	2657.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	85.7	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	2450	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	5270	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

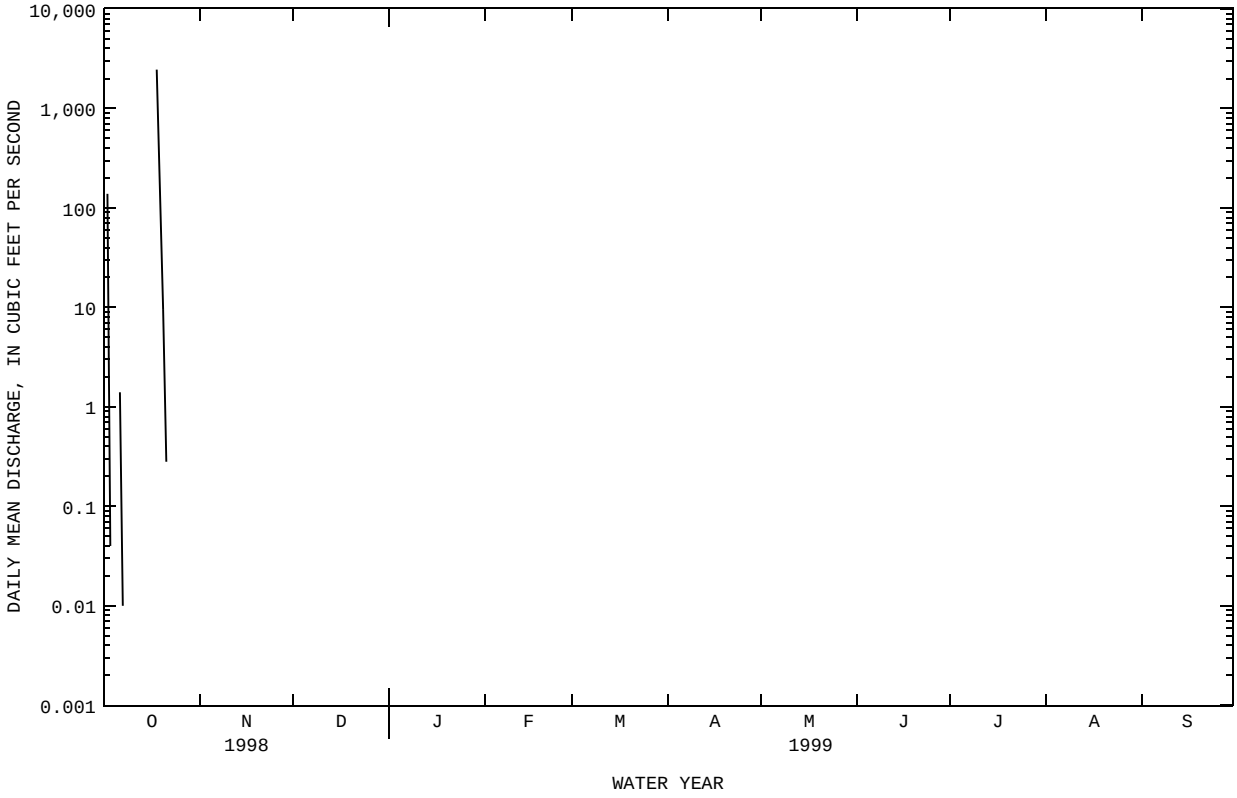
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

MEAN	10.8	.48	10.8	2.81	7.02	9.23	7.18	29.7	63.3	14.2	34.6	7.17
MAX	160	10.8	379	56.9	187	168	89.5	468	1060	509	1015	151
(WY)	1972	1972	1992	1968	1992	1992	1981	1987	1987	1973	1971	1980
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1962	1961	1962	1961	1962	1962	1961	1961	1962	1962	1961	1961

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	6938.09		2657.33			
ANNUAL MEAN	19.0		7.28		16.5	
HIGHEST ANNUAL MEAN					128	1987
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	3090	Aug 23	2450	Oct 18	13900	Jun 22 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 8	.00	Oct 1 1960
INSTANTANEOUS PEAK FLOW			11700	Oct 18	i63600	Jun 22 1997
INSTANTANEOUS PEAK STAGE			8.89	Oct 18	18.96	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	13760		5270		11950	
10 PERCENT EXCEEDS	.00		.00		.25	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

i From indirect measurement of peak flow

08200700 HONDO CREEK AT KING WATERHOLE NEAR HONDO, TX--Continued



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 mi^2.

WATER-DISCHARGE RECORDS

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

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1901, 16.4 ft Jun 17, 1958, from floodmarks (discharge, 52,600 ft^3/s, by slope-area measurement of peak flow).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 2	0045	1,190	3.87	Oct 18	0215	7,000	a7.04

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	122	47	19	11	6.4	8.0	7.6	5.3	17	9.1	2.9
2	232	94	47	18	11	6.3	7.7	8.0	5.1	15	8.8	2.7
3	67	85	45	18	10	5.9	7.4	7.9	4.9	15	8.5	2.5
4	56	81	44	18	10	6.2	6.7	7.8	4.7	15	8.2	2.3
5	50	90	43	18	10	6.5	6.6	6.4	4.5	14	8.3	2.4
6	95	82	42	17	9.8	6.2	6.0	5.8	4.3	13	7.5	2.2
7	65	83	39	17	9.5	6.0	6.2	5.6	4.2	13	7.2	2.1
8	60	78	37	17	9.4	6.4	6.2	5.4	4.1	12	6.9	2.1
9	56	77	36	16	9.3	5.9	6.1	5.4	3.9	11	6.6	3.9
10	53	72	51	16	9.1	6.1	5.7	8.7	3.8	11	6.5	4.1
11	50	68	40	16	8.9	6.3	5.2	6.3	3.7	e38	6.4	2.3
12	48	68	36	16	8.2	6.5	5.1	10	3.7	25	6.2	2.0
13	45	67	34	15	8.3	8.0	5.4	6.8	7.3	20	6.0	1.8
14	43	87	33	15	8.2	5.7	5.1	6.3	4.2	19	5.8	1.8
15	40	84	32	14	8.2	5.7	4.3	6.3	5.3	18	5.5	2.0
16	38	81	31	14	8.3	5.6	4.3	6.0	4.6	17	5.3	1.8
17	50	78	29	14	8.1	6.0	4.4	5.9	4.0	16	5.0	1.6
18	e990	76	29	14	8.0	10	4.2	21	3.6	16	4.8	1.5
19	195	75	27	14	7.7	8.0	4.0	9.0	3.4	16	4.4	1.5
20	166	72	26	13	7.9	6.4	3.8	8.6	71	15	4.2	1.3
21	146	68	26	13	7.4	6.1	3.7	8.5	42	14	4.4	1.3
22	131	66	24	12	6.9	5.9	4.0	8.4	43	13	4.0	1.1
23	119	64	24	12	7.0	6.0	3.7	8.0	36	13	4.1	1.1
24	110	62	23	12	6.9	6.0	3.6	7.6	31	12	5.0	1.2
25	103	60	22	12	7.0	5.8	36	7.2	27	11	4.5	1.3
26	96	57	22	11	7.0	5.5	15	6.9	24	11	4.1	1.5
27	86	56	21	11	6.9	8.3	11	6.6	22	11	3.8	1.3
28	81	54	21	11	6.3	14	9.5	6.3	21	11	3.6	1.1
29	77	52	20	11	---	8.4	8.6	6.0	19	10	3.4	1.2
30	73	50	19	11	---	8.0	8.2	5.8	18	9.8	3.4	1.1
31	70	---	20	11	---	7.8	---	5.7	---	9.5	3.1	---
TOTAL	3540	2209	990	446	236.3	211.9	215.7	231.8	438.6	461.3	174.6	57.0
MEAN	114	73.6	31.9	14.4	8.44	6.84	7.19	7.48	14.6	14.9	5.63	1.90
MAX	990	122	51	19	11	14	36	21	71	38	9.1	4.1
MIN	38	50	19	11	6.3	5.5	3.6	5.4	3.4	9.5	3.1	1.1
AC-FT	7020	4380	1960	885	469	420	428	460	870	915	346	113
CFSM	2.54	1.64	.71	.32	.19	.15	.16	.17	.32	.33	.13	.04
IN.	2.93	1.83	.82	.37	.20	.18	.18	.19	.36	.38	.14	.05

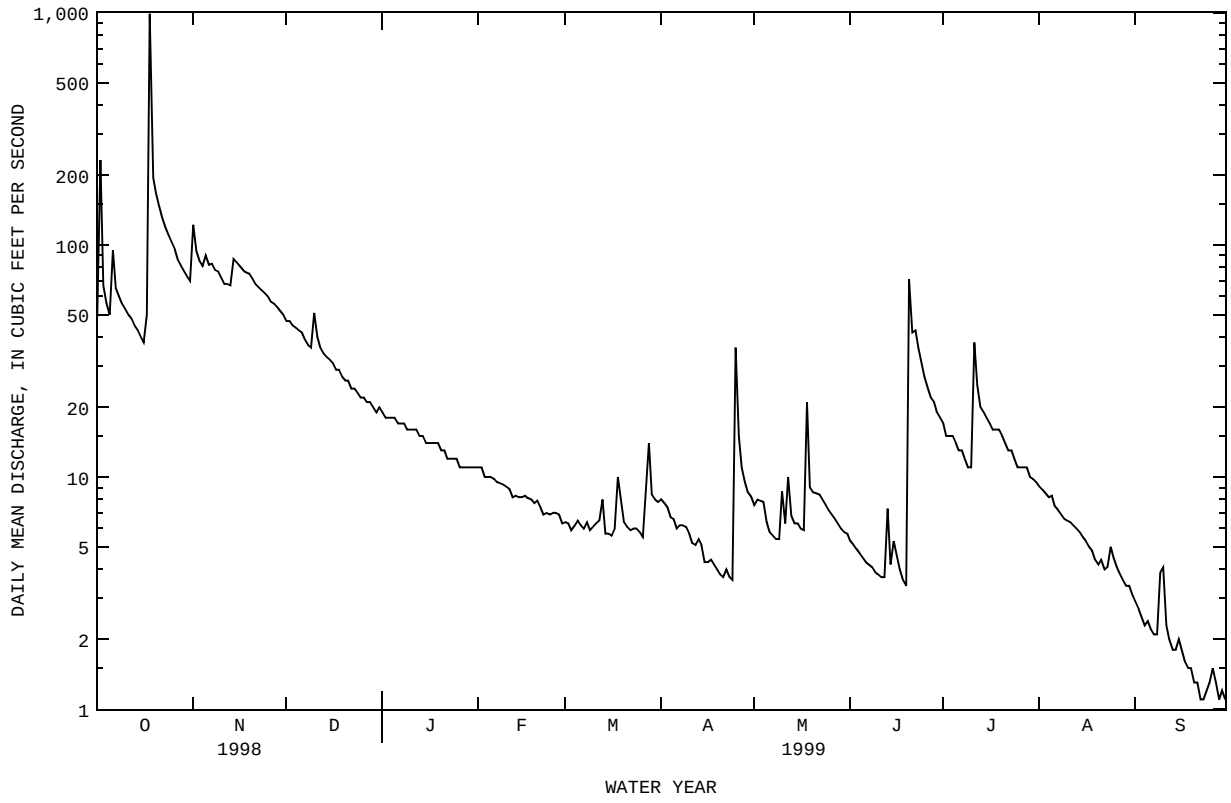
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

MEAN	20.8	12.7	17.0	12.4	14.5	16.3	15.7	26.5	43.1	22.7	21.8	14.9
MAX	169	73.6	241	92.9	136	134	91.1	120	471	276	279	63.1
(WY)	1972	1999	1992	1992	1992	1992	1992	1987	1987	1973	1971	1967
MIN	.24	.50	.40	.67	1.08	.70	1.29	.64	.15	.010	.005	.000
(WY)	1964	1964	1964	1963	1963	1963	1996	1984	1989	1989	1989	1989

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	12596.02		9212.2			
ANNUAL MEAN	34.5		25.2		20.0	
HIGHEST ANNUAL MEAN					87.4	1992
LOWEST ANNUAL MEAN					.97	1989
HIGHEST DAILY MEAN	1430	Aug 23	990	Oct 18	5000	Jun 22 1997
LOWEST DAILY MEAN	.24	Aug 5	1.1	Sep 22	.00	Jul 30 1963
ANNUAL SEVEN-DAY MINIMUM	.30	Jul 30	1.2	Sep 22	.00	Jul 30 1963
INSTANTANEOUS PEAK FLOW			7000	Oct 18	i64900	Jun 22 1997
INSTANTANEOUS PEAK STAGE			a7.04	Oct 18	a17.70	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	24980		18270		14460	
ANNUAL RUNOFF (CFSM)	.77		.56		.44	
ANNUAL RUNOFF (INCHES)	10.41		7.62		6.03	
10 PERCENT EXCEEDS	77		68		41	
50 PERCENT EXCEEDS	15		9.1		5.6	
90 PERCENT EXCEEDS	1.6		3.7		.80	

e Estimated
a From floodmark
i From indirect measurement of peak flow



08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Nov 1965 to Sep 1969 to Jul 1999 (discontinued).
BIOCHEMICAL DATA: Mar 1970 to Jul 1999 (discontinued).
BACTERIA DATA: Nov 1976 to Jul 1999 (discontinued).
PESTICIDE DATA: Jan 1974 to Sep 1998.
SEDIMENT DATA: Nov 1965, Aug 1994 to Sep 1998.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
DEC										
02...	1200	46	458	8.0	19.5	9.5	107	.4	61	38
MAR										
24...	1255	6.2	415	8.1	20.0	9.5	109	.4	25	66
JUL										
01...	1210	18	400	8.0	28.0	8.5	115	.2	K6	K4

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
DEC										
02...	220	25	71	10	6.6	.2	6	.94	200	24
MAR										
24...	200	18	63	11	6.9	.2	7	1.0	180	39
JUL										
01...	190	28	58	10	5.9	.2	6	1.1	160	31

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, 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,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
DEC										
02...	10	.19	12	257	--	<.010	.453	<.020	<.10	<.050
MAR										
24...	11	.17	11	255	--	<.010	.161	<.020	E.10	<.050
JUL										
01...	9.3	.18	12	225	.251	.011	.262	.021	E.10	<.050

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	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)
DEC										
02...	<.010	<1	30	<1.6	<8.0	<14	<7.0	<10	<10	<100
MAR										
24...	<.010	<1	28	<1.6	<8.0	<14	<7.0	<10	<10	<1.0
JUL										
01...	<.010	<1	27	<1.6	<8.0	<14	<7.0	<10	<10	<100

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
DEC										
02...	E3	<3.0	<.1	<50	<40	<1	<4.0	415	<10	<20
MAR										
24...	E4	E1.5	<.1	<50	<40	<1	<4.0	410	<10	<20
JUL										
01...	<6	<3.0	<.1	<50	<40	<1	<4.0	377	<10	<20

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08202450 SECO CREEK RESERVOIR INFLOW NEAR UTOPIA, TX

LOCATION.--Lat 29°31'34", long 99°23'42", Medina County, Hydrologic Unit 12110107, on right bank 0.7 mi east of Seco Valley Road, 0.8 mi upstream from Seco Creek Reservoir dam, 2.8 mi upstream from Little Seco Creek, 4.2 mi downstream from gaging station 08201500, 10.0 mi southeast of Utopia, and 53.8 mi upstream from mouth.

DRAINAGE AREA.--59.5 mi^2.

PERIOD OF RECORD.--Mar 1991 to Sep 1999 (discontinued). Prior to Oct 1995, published in OFR 98-627.

GAGE.--Water-stage recorder. Datum of gage is 1199.47 ft above sea level, from Edwards Aquifer Authority datum, adjustment unknown. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Most of the 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 known diversions above station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 2	0200	1,710	8.95	Oct 18	0230	9,450	a14.52

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	109	25	3.5	.00	.00	.00	.00	.00	.99	.00	.00
2	323	74	25	2.5	.00	.00	.00	.00	.00	.00	.00	.00
3	54	64	24	2.1	.00	.00	.00	.00	.00	.00	.00	.00
4	39	60	22	2.5	.00	.00	.00	.00	.00	.00	.00	.00
5	30	73	20	2.8	.00	.00	.00	.00	.00	.00	.00	.00
6	91	62	19	3.1	.00	.00	.00	.00	.00	.00	.00	.00
7	51	62	17	2.2	.00	.00	.00	.00	.00	.00	.00	.00
8	44	57	17	1.8	.00	.00	.00	.00	.00	.00	.00	.00
9	39	54	17	.79	.00	.00	.00	.00	.00	.00	.00	.00
10	34	49	31	.80	.00	.00	.00	.00	.00	.00	.00	.00
11	30	45	22	.94	.00	.00	.00	.00	.00	22	.00	.00
12	30	45	18	.60	.00	.00	.00	.00	.00	20	.00	.00
13	30	46	17	.24	.00	.00	.00	.00	.00	6.9	.00	.00
14	25	72	15	.00	.00	.00	.00	.00	.00	4.7	.00	.00
15	20	64	13	.00	.00	.00	.00	.00	.00	3.3	.00	.00
16	17	61	12	.00	.00	.00	.00	.00	.00	1.7	.00	.00
17	51	59	12	.00	.00	.00	.00	.00	.00	.71	.00	.00
18	1650	56	11	.00	.00	.00	.00	4.2	.00	1.5	.00	.00
19	198	53	10	.00	.00	.00	.00	.00	.00	.30	.00	.00
20	158	50	9.2	.00	.00	.00	.00	.00	74	.00	.00	.00
21	135	48	8.9	.00	.00	.00	.00	.00	41	.00	.00	.00
22	117	46	7.2	.00	.00	.00	.00	.00	39	.00	.00	.00
23	103	43	8.7	.00	.00	.00	.00	.00	27	.00	.00	.00
24	93	41	9.0	.00	.00	.00	.00	.00	21	.00	.00	.00
25	84	38	8.7	.00	.00	.00	32	.00	16	.00	.00	.00
26	76	36	8.3	.00	.00	.00	11	.00	11	.00	.00	.00
27	69	34	7.3	.00	.00	.00	.16	.00	8.8	.00	.00	.00
28	63	32	6.1	.00	.00	.00	.00	.00	7.5	.00	.00	.00
29	58	30	4.9	.00	---	.00	.00	.00	4.7	.00	.00	.00
30	52	27	4.0	.00	---	.00	.00	.00	3.4	.00	.00	.00
31	48	---	3.8	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	3847	1590	433.1	23.87	0.00	0.00	43.16	4.20	253.40	62.10	0.00	0.00
MEAN	124	53.0	14.0	.77	.000	.000	1.44	.14	8.45	2.00	.000	.000
MAX	1650	109	31	3.5	.00	.00	32	4.2	74	22	.00	.00
MIN	17	27	3.8	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	7630	3150	859	47	.00	.00	86	8.3	503	123	.00	.00

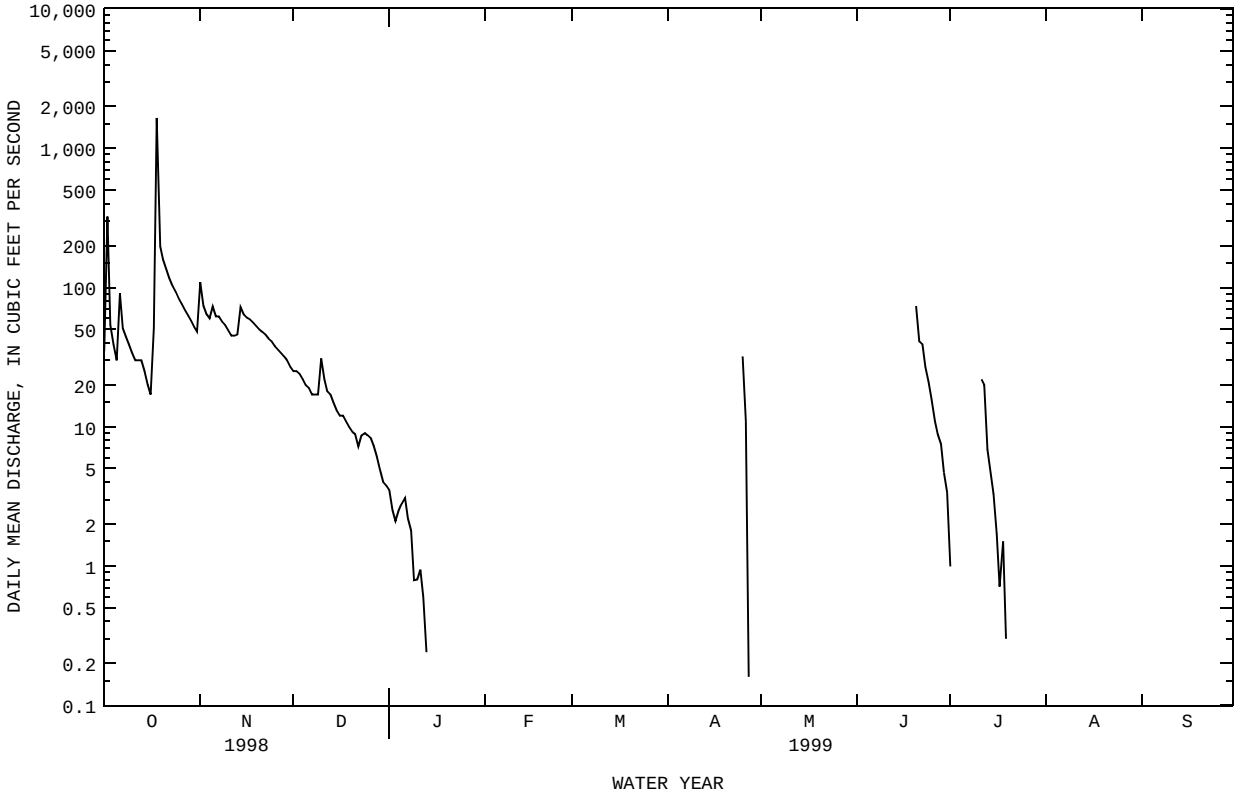
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1999, BY WATER YEAR (WY)

MEAN	15.8	6.88	18.9	6.63	14.1	16.2	12.3	13.5	34.8	3.74	9.39	3.71
MAX	124	53.0	136	48.4	107	105	63.8	48.6	191	26.9	84.5	16.9
(WY)	1999	1999	1992	1992	1992	1992	1992	1992	1997	1997	1998	1995
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1992	1994	1993	1994	1993	1994	1993	1996	1991	1993	1991	1992

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1991 - 1999	
ANNUAL TOTAL	9495.76		6256.83			
ANNUAL MEAN	26.0		17.1		13.6	
HIGHEST ANNUAL MEAN					52.0	1992
LOWEST ANNUAL MEAN					.002	1996
HIGHEST DAILY MEAN	1840	Aug 23	1650	Oct 18	3590	Jun 22 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Jan 14	.00	Mar 15 1991
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Jan 14	.00	Mar 15 1991
INSTANTANEOUS PEAK FLOW			9450	Oct 18	c40000	Jun 22 1997
INSTANTANEOUS PEAK STAGE			a14.52	Oct 18	a23.71	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	18830		12410		9860	
10 PERCENT EXCEEDS	56		48		25	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

a From floodmark.
c From rating curve extended above slope-area measurement of 17,000 ft^3/s.

08202450 SECO CREEK RESERVOIR INFLOW NEAR UTOPIA, TX--Continued



08202700 SECO CREEK AT ROWE RANCH NEAR D'HANIS, TX

LOCATION.--Lat 29°21'43", long 99°17'05", Medina County, Hydrologic Unit 12110107, on left bank 2.9 mi north of D'Hanis and 8.0 mi downstream from Rocky Creek.

DRAINAGE AREA.--168 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 900.88 ft above sea level. Prior to Oct 1970, published as "at Crook Ranch, near D'Hanis". Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. 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.

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; Sep 1919, 28 ft; Jul 2, 1932, 28.2 ft (discharge, 35,800 ft^3/s, by slope-area measurement); and Jun 17, 1958, 32.4 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 18	0645	26,800	a23.56	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	3450	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	136	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	69	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	55	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	44	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	34	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	5.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	1.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	3829.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	124	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	3450	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	7600	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

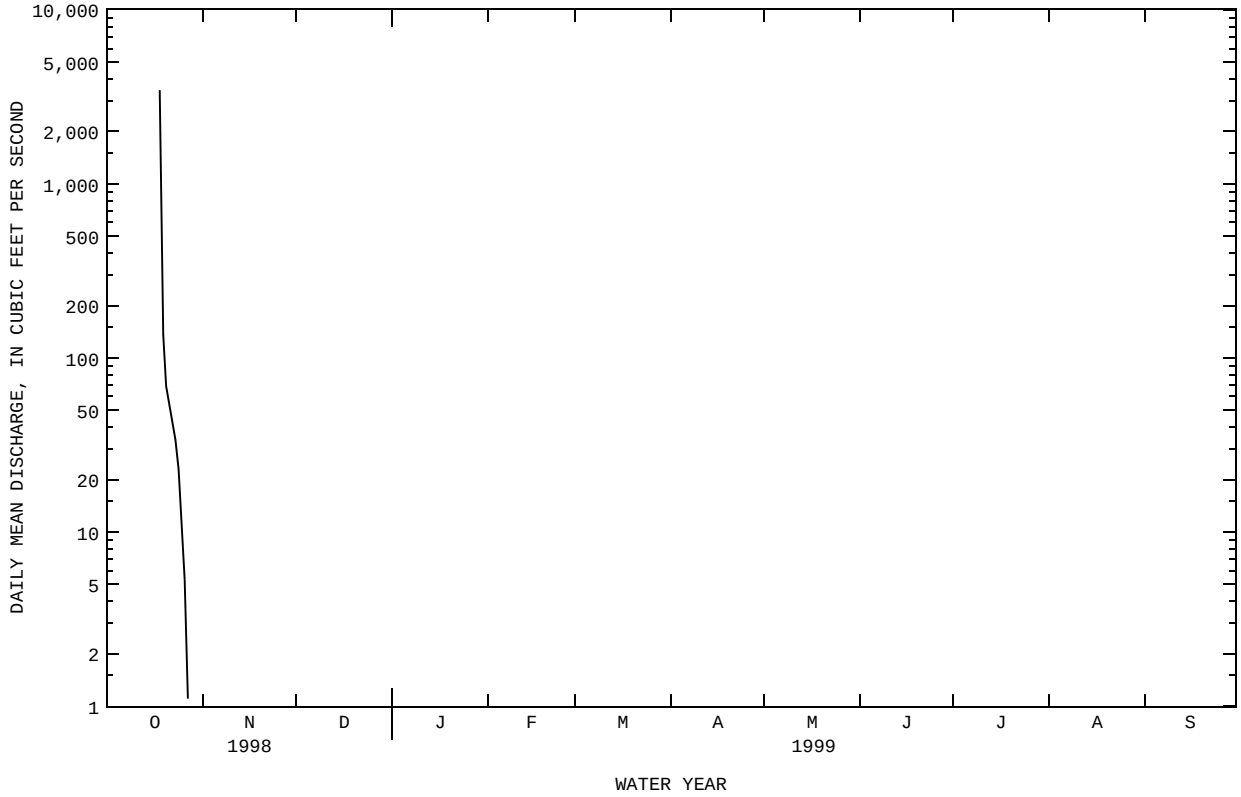
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999, BY WATER YEAR (WY)

MEAN	9.70	.002	4.45	.65	.98	1.74	3.39	11.5	28.7	7.91	29.1	4.32
MAX	183	.057	117	24.7	33.2	27.0	74.6	277	411	275	862	58.5
(WY)	1972	1977	1992	1968	1992	1992	1981	1987	1997	1973	1971	1980
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1962	1961	1961	1961	1961	1961	1961	1961	1962	1962	1961	1961

08202700 SECO CREEK AT ROWE RANCH NEAR D'HANIS, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999	
ANNUAL TOTAL	8703.67		3829.40			
ANNUAL MEAN	23.8		10.5		8.69	
HIGHEST ANNUAL MEAN					73.3	1971
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	4470	Aug 23	3450	Oct 18	11800	Jun 22 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Nov 1 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Nov 1 1960
INSTANTANEOUS PEAK FLOW			26800	Oct 18	i51400	Jun 22 1997
INSTANTANEOUS PEAK STAGE			23.56	Oct 18	a30.62	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	17260		7600		6300	
10 PERCENT EXCEEDS	.00		.00		.00	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

a From floodmark
i From indirect measurement of peak flow



08205500 FRIO RIVER NEAR DERBY, TX

LOCATION.--Lat 28°44'11", long 99°08'40", Frio County, Hydrologic Unit 12110106, on right bank 17 ft downstream from centerline of railroad tracks, 35 ft right of the Missouri Pacific Railroad Co. bridge abutment, 167 ft downstream from Interstate Highway 35, 917 ft downstream from Leona River, 2.5 mi south of Derby, and 115.1 mi upstream from mouth.

DRAINAGE AREA.--3,429 mi^2.

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 sea level. Aug 1, 1915, to Apr 21, 1931, nonrecording gage, and Apr 22, 1931, to Mar 6, 1940, water-stage recorder at same site and datum. Mar 7, 1940, to May 4, 1972, water-stage recorder, and May 5 to Nov 1, 1972, nonrecording gage at site 167 ft upstream at same datum. 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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, that of Jul 4, 1932, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 20	0315	17,400	13.95	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	246	164	99	69	44	187	45	20	39	17	17
2	18	237	156	97	71	45	119	41	18	35	17	18
3	17	239	147	97	67	45	91	41	18	32	16	19
4	35	338	143	99	64	44	80	41	17	32	15	21
5	95	286	137	93	64	42	75	41	14	33	14	21
6	67	256	134	88	64	41	69	41	12	30	13	21
7	112	246	132	87	63	41	67	41	11	30	13	21
8	164	257	125	90	60	43	67	40	10	29	14	21
9	150	250	118	95	59	43	62	37	11	27	14	20
10	141	245	113	95	56	43	58	35	9.2	26	13	20
11	91	230	110	93	56	45	56	31	8.2	26	13	20
12	64	213	108	92	55	48	56	60	8.3	25	13	20
13	51	208	111	90	53	56	57	39	8.7	277	14	20
14	44	248	114	90	50	98	57	36	9.2	324	14	19
15	40	262	119	92	48	91	53	61	9.5	174	13	20
16	39	307	122	92	48	56	50	62	12	84	13	21
17	70	298	119	90	50	53	47	47	27	53	12	20
18	377	267	115	85	51	50	44	50	38	43	13	18
19	4870	244	113	86	52	49	41	38	49	37	14	17
20	12400	230	111	89	52	48	39	41	34	36	14	17
21	4090	221	112	89	51	48	37	43	26	33	13	16
22	1150	212	104	84	49	46	38	41	28	32	13	15
23	797	202	103	74	48	47	37	38	86	30	14	14
24	613	195	102	74	49	42	37	36	327	27	18	13
25	491	189	98	74	51	41	36	34	386	24	22	13
26	411	185	96	73	48	40	36	31	271	22	22	13
27	362	180	97	69	47	38	35	28	145	21	22	13
28	332	175	100	71	45	57	62	25	85	19	24	13
29	304	169	103	74	---	103	65	24	60	18	22	13
30	278	165	102	70	---	180	56	24	46	19	19	14
31	255	---	102	67	---	241	---	22	---	18	18	---
TOTAL	27948	7000	3630	2658	1540	1908	1814	1214	1804.1	1655	486	528
MEAN	902	233	117	85.7	55.0	61.5	60.5	39.2	60.1	53.4	15.7	17.6
MAX	12400	338	164	99	71	241	187	62	386	324	24	21
MIN	17	165	96	67	45	38	35	22	8.2	18	12	13
AC-FT	55430	13880	7200	5270	3050	3780	3600	2410	3580	3280	964	1050

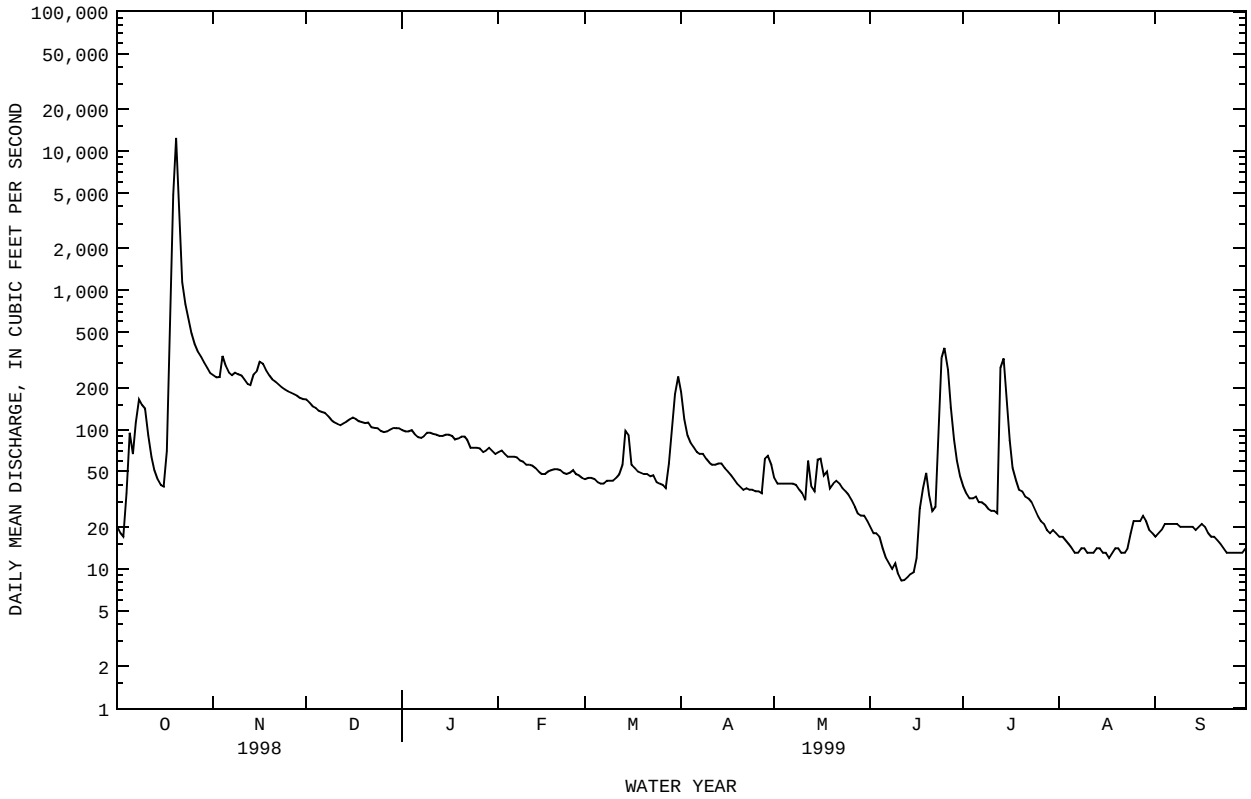
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 1999, BY WATER YEAR (WY)

MEAN	168	48.3	46.3	51.2	60.1	49.8	115	197	376	251	147	193
MAX	1813	674	950	559	988	1079	1072	2320	8069	8943	5648	3247
(WY)	1920	1920	1992	1992	1992	1992	1957	1935	1935	1932	1971	1919
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1918	1916	1916	1916	1916	1916	1917	1917	1918	1918	1917	1922

08205500 FRIO RIVER NEAR DERBY, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1915 - 1999	
ANNUAL TOTAL	76462.50		52185.1			
ANNUAL MEAN	209		143		142	
HIGHEST ANNUAL MEAN					1087	1935
LOWEST ANNUAL MEAN					1.76	1952
HIGHEST DAILY MEAN	12400	Oct 20	12400	Oct 20	135000	Jul 4 1932
LOWEST DAILY MEAN	.00	May 18	8.2	Jun 11	.00	Aug 1 1915
ANNUAL SEVEN-DAY MINIMUM	.00	May 18	9.2	Jun 9	.00	Aug 1 1915
INSTANTANEOUS PEAK FLOW			17400	Oct 20	i230000	Jul 4 1932
INSTANTANEOUS PEAK STAGE			13.95	Oct 20	a29.45	Jul 4 1932
ANNUAL RUNOFF (AC-FT)	151700		103500		102800	
10 PERCENT EXCEEDS	259		233		152	
50 PERCENT EXCEEDS	14		49		5.4	
90 PERCENT EXCEEDS	.00		14		.00	

a From floodmark
i From indirect measurement of peak flow



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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 216.04 ft above sea level. Jul 14, 1978, to Sep 13, 1994, at site 80 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 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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jul 1932 reached a stage of 38.44 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 24	0600	9,160	24.80	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	197	131	85	59	47	199	41	28	59	16	20
2	26	179	127	85	60	45	210	53	26	46	15	18
3	24	165	124	84	58	44	216	50	25	38	16	17
4	22	158	123	83	56	43	167	46	23	34	15	16
5	20	154	117	81	57	43	111	41	22	31	14	15
6	60	196	113	80	58	43	81	40	20	29	13	15
7	159	238	111	81	56	44	67	39	20	27	13	16
8	137	209	106	81	55	44	62	38	19	26	12	18
9	78	188	103	77	56	43	57	38	17	25	11	19
10	78	182	102	75	55	42	55	38	16	24	10	18
11	105	185	99	76	53	41	54	38	15	24	10	18
12	99	182	97	78	51	43	52	38	13	24	9.5	17
13	96	182	94	79	50	47	49	36	13	23	9.9	17
14	74	294	91	78	51	63	47	37	13	22	10	17
15	59	341	90	77	50	158	46	50	12	21	9.6	17
16	52	235	91	74	49	92	47	49	15	148	9.3	17
17	47	216	93	72	49	79	47	39	24	201	9.1	17
18	44	215	95	72	49	86	45	39	19	106	9.8	16
19	48	231	96	73	48	62	43	51	16	57	9.7	16
20	104	220	95	72	46	53	42	49	17	41	9.6	17
21	404	195	94	71	46	51	41	43	33	35	9.5	16
22	692	180	93	69	46	49	39	41	40	31	8.8	15
23	4920	170	91	68	46	47	39	36	40	27	12	15
24	8610	162	91	68	46	46	40	38	33	27	63	14
25	4290	156	88	68	45	46	38	38	31	26	73	14
26	1900	150	85	65	43	46	39	36	87	24	62	13
27	981	145	84	62	45	47	39	34	315	23	156	13
28	486	142	83	62	47	76	38	34	309	21	84	12
29	306	140	81	62	---	273	37	34	194	19	42	12
30	250	135	82	61	---	411	36	33	95	18	30	12
31	220	---	83	58	---	280	---	30	---	17	23	---
TOTAL	24418	5742	3053	2277	1430	2534	2083	1247	1550	1274	794.8	477
MEAN	788	191	98.5	73.5	51.1	81.7	69.4	40.2	51.7	41.1	25.6	15.9
MAX	8610	341	131	85	60	411	216	53	315	201	156	20
MIN	20	135	81	58	43	41	36	30	12	17	8.8	12
AC-FT	48430	11390	6060	4520	2840	5030	4130	2470	3070	2530	1580	946

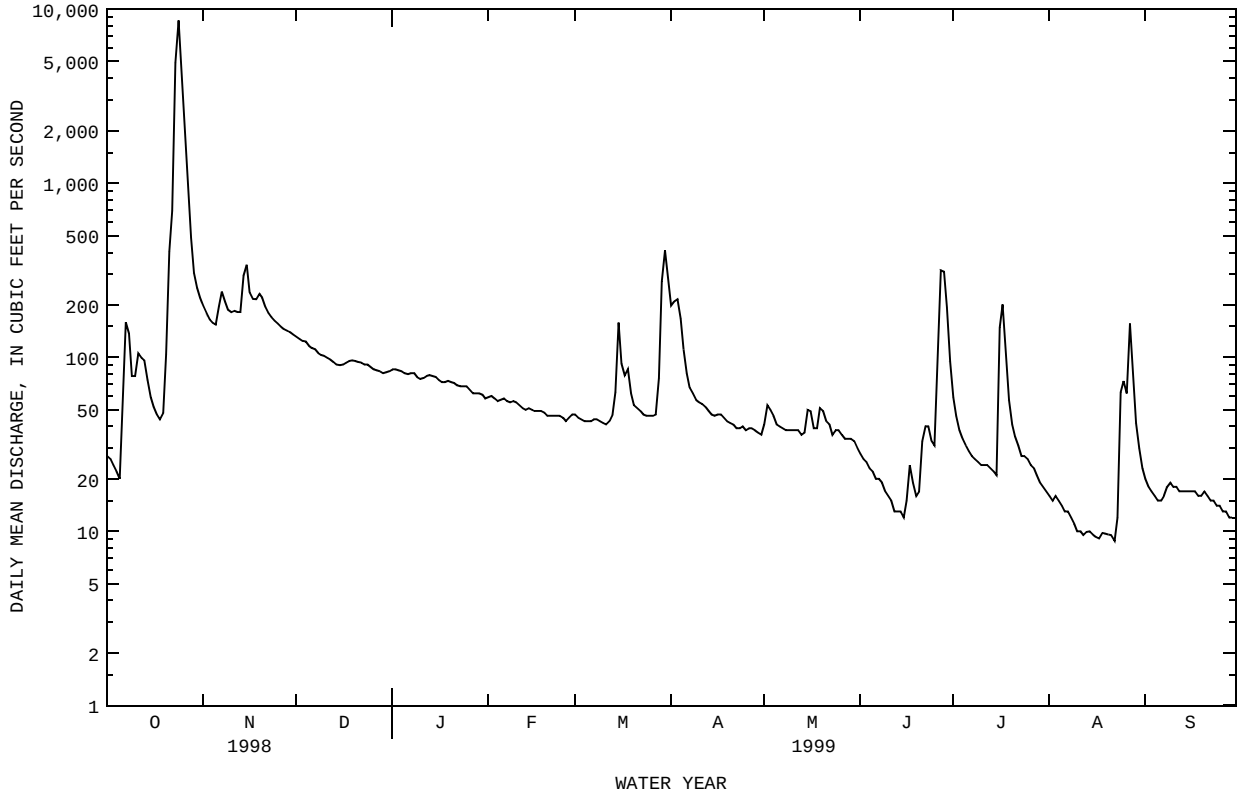
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1999, BY WATER YEAR (WY)

MEAN	200	64.4	111	111	127	110	127	196	822	195	124	103
MAX	861	191	1314	877	1745	1188	935	1171	8992	1232	842	315
(WY)	1986	1999	1992	1992	1992	1992	1992	1980	1987	1990	1998	1991
MIN	.12	.25	.27	.45	.32	2.91	.55	.46	.025	.000	.045	.52
(WY)	1991	1991	1991	1991	1990	1984	1984	1998	1998	1996	1985	1989

08206600 FRIO RIVER AT TILDEN, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1978 - 1999	
ANNUAL TOTAL	70060.02		46879.8			
ANNUAL MEAN	192		128		188	
HIGHEST ANNUAL MEAN					1000	1987
LOWEST ANNUAL MEAN					7.06	1984
HIGHEST DAILY MEAN	8610	Oct 24	8610	Oct 24	20100	Jun 9 1987
LOWEST DAILY MEAN	.00	May 24	8.8	Aug 22	.00	Apr 16 1984
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 12	9.4	Aug 16	.00	Apr 22 1984
INSTANTANEOUS PEAK FLOW			9160	Oct 24	20900	Jun 9 1987
INSTANTANEOUS PEAK STAGE			24.80	Oct 24	p29.56	Jun 28 1997
ANNUAL RUNOFF (AC-FT)	139000		92990		136200	
10 PERCENT EXCEEDS	231		182		238	
50 PERCENT EXCEEDS	15		47		28	
90 PERCENT EXCEEDS	.00		15		.29	

p Observed.



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 1998 TO SEPTEMBER 1999

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)
DEC												
01...	1555	131	1430	8.0	21.0	--	--	430	210	130	28	117
MAR												
09...	1420	43	2030	8.0	21.0	7.9	90	560	370	150	43	207
MAY												
27...	1619	34	1390	--	28.0	7.6	99	400	240	110	27	129
AUG												
25...	1215	57	1130	7.8	27.0	5.8	73	310	160	90	21	133

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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												
01...	2	37	3.5	220	180	210	.16	--	815	4.46	.012	4.47
MAR												
09...	4	44	3.8	200	300	350	.21	7.5	1210	5.48	.017	5.50
MAY												
27...	3	41	3.1	160	200	200	.21	11	787	--	<.010	2.35
AUG												
25...	3	48	5.4	150	200	180	.23	13	741	1.55	.030	1.58

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	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)
DEC												
01...	.027	.33	.36	<.050	.025	.08	<1.0	<1.0	2	84	<1.0	<1.0
MAR												
09...	.022	.22	.24	<.050	.017	.05	1.7	<1.0	1	105	<1.0	<1.0
MAY												
27...	.037	.33	.37	<.050	.014	.04	1.2	<1.0	2	72	<1.0	<1.0
AUG												
25...	<.020	--	.63	.085	.079	.24	2.9	<1.0	3	88	<1.0	<1.0

DATE	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)	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)
DEC											
01...	2.3	<1.0	1.3	--	<1.0	--	1.6	<.1	<1.0	1.6	2
MAR											
09...	10	<1.0	2.4	<10	<1.0	42	2.5	<.1	1.3	8.7	<1
MAY											
27...	<1.0	<1.0	1.4	<10	<1.0	28	5.2	<.1	1.3	1.6	<1
AUG											
25...	11	<1.0	2.2	12	<1.0	30	3.6	--	1.7	2.7	<1

08206600 FRIO RIVER AT TILDEN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)
DEC											
01...	<1.0	--	--	7.6	1.4	<.010	<.010	<.010	<.010	<.010	<.010
MAR											
09...	<1.0	1260	<10	1.9	1.8	<.010	<.010	<.010	<.010	<.010	<.010
MAY											
27...	<1.0	900	E9	1.3	1.6	<.010	<.010	<.010	<.010	<.010	.018
AUG											
25...	<1.0	739	E8	<1.0	1.2	--	--	--	--	--	--

DATE	TOTAL TRI-THION (UG/L) (39786)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)
DEC											
01...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
MAR											
09...	<.010	<.010	<.010	<.030	<.010	<.010	<.040	<.010	<.010	<.010	<.010
MAY											
27...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
AUG											
25...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010

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 mi^2.

PERIOD OF RECORD.--Jan 1964 to current year.
Water-quality records.--Chemical data: Jul 1978 to Sep 1984. Biochemical data: Jul 1978 to Sep 1984.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 242.95 ft above sea level. 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, excessive amount of water from Bexar-Medina-Atascosa Counties Water Improvement District No. 1 system enters San Miguel Creek basin via Chacon Creek 52 mi upstream (amounts unknown).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1919, 32.6 ft in 1942; stage of 1919 flood not known, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 21	1815	2,670	15.93	No other peak greater than base discharge.			

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

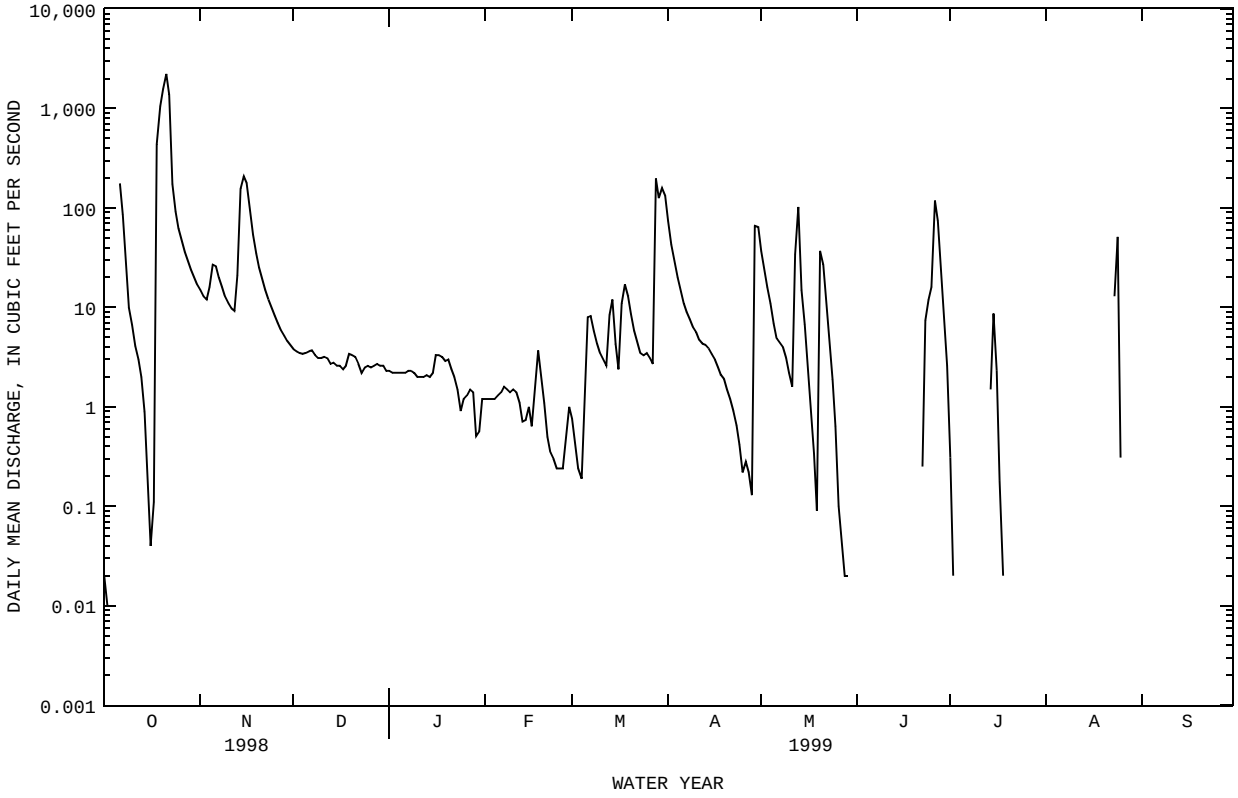
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	15	3.8	2.3	1.2	.76	74	37	.00	.31	.00	.00
2	.01	13	3.6	2.2	1.2	.42	43	24	.00	.02	.00	.00
3	.00	12	3.5	2.2	1.2	.24	29	16	.00	.00	.00	.00
4	.00	16	3.4	2.2	1.2	.19	20	11	.00	.00	.00	.00
5	.00	27	3.5	2.2	1.3	1.5	15	6.9	.00	.00	.00	.00
6	177	26	3.6	2.2	1.4	8.0	11	4.9	.00	.00	.00	.00
7	86	20	3.7	2.3	1.6	8.2	9.0	4.4	.00	.00	.00	.00
8	26	16	3.3	2.3	1.5	5.8	7.6	4.0	.00	.00	.00	.00
9	10	13	3.1	2.2	1.4	4.3	6.3	3.1	.00	.00	.00	.00
10	6.7	11	3.1	2.0	1.5	3.5	5.6	2.2	.00	.00	.00	.00
11	4.1	9.8	3.2	2.0	1.4	3.0	4.7	1.6	.00	.00	.00	.00
12	3.0	9.3	3.1	2.0	1.1	2.6	4.3	34	.00	.00	.00	.00
13	2.0	21	2.7	2.1	.71	8.4	4.2	102	.00	.00	.00	.00
14	.89	156	2.8	2.0	.74	12	3.9	15	.00	1.5	.00	.00
15	.20	208	2.6	2.2	1.0	4.3	3.4	6.8	.00	8.7	.00	.00
16	.04	178	2.6	3.3	.64	2.4	3.0	2.6	.00	2.3	.00	.00
17	.11	95	2.4	3.3	1.6	11	2.5	.84	.00	.18	.00	.00
18	437	54	2.6	3.2	3.7	17	2.1	.34	.00	.02	.00	.00
19	1060	35	3.4	2.9	1.9	13	1.9	.09	.00	.00	.00	.00
20	1570	25	3.3	3.0	1.1	8.6	1.5	37	.00	.00	.00	.00
21	2230	19	3.2	2.4	.50	5.8	1.2	27	.00	.00	.00	.00
22	1380	15	2.7	2.0	.35	4.4	.91	9.4	.25	.00	.00	.00
23	175	12	2.2	1.5	.30	3.5	.65	4.2	7.4	.00	13	.00
24	92	10	2.5	.91	.24	3.3	.42	1.9	12	.00	51	.00
25	62	8.2	2.6	1.2	.24	3.5	.22	.64	16	.00	.31	.00
26	47	7.0	2.5	1.3	.24	3.1	.28	.10	119	.00	.00	.00
27	36	5.9	2.6	1.5	.48	2.7	.22	.04	74	.00	.00	.00
28	29	5.2	2.7	1.4	1.0	197	.13	.02	23	.00	.00	.00
29	24	4.6	2.6	.51	---	126	66	.02	8.1	.00	.00	.00
30	20	4.2	2.6	.57	---	158	64	.00	2.6	.00	.00	.00
31	17	---	2.3	1.2	---	133	---	.00	---	.00	.00	---
TOTAL	7495.07	1051.2	91.8	62.59	30.74	755.51	386.03	357.09	262.35	13.03	64.31	0.00
MEAN	242	35.0	2.96	2.02	1.10	24.4	12.9	11.5	8.74	.42	2.07	.000
MAX	2230	208	3.8	3.3	3.7	197	74	102	119	8.7	51	.00
MIN	.00	4.2	2.2	.51	.24	.19	.13	.00	.00	.00	.00	.00
AC-FT	14870	2090	182	124	61	1500	766	708	520	26	128	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

MEAN	70.4	20.8	16.7	26.9	24.9	10.0	57.0	121	102	38.0	53.2	86.8
MAX	486	286	226	641	352	78.0	1065	900	690	748	741	1233
(WY)	1982	1993	1987	1968	1992	1992	1977	1980	1987	1990	1980	1967
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1980	1995	1989	1989	1995	1996	1996	1971	1967	1996	1991	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1964 - 1999	
ANNUAL TOTAL	16098.29		10569.72			
ANNUAL MEAN	44.1		29.0		53.4	
HIGHEST ANNUAL MEAN					161	1968
LOWEST ANNUAL MEAN					2.43	1984
HIGHEST DAILY MEAN	2230	Oct 21	2230	Oct 21	16700	May 16 1980
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 3	.00	Feb 1 1964
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 25	.00	May 30	.00	Feb 7 1964
INSTANTANEOUS PEAK FLOW			2670	Oct 21	20600	May 16 1980
INSTANTANEOUS PEAK STAGE			15.93	Oct 21	27.31	May 16 1980
ANNUAL RUNOFF (AC-FT)	31930		20970		38720	
10 PERCENT EXCEEDS	64		27		36	
50 PERCENT EXCEEDS	.74		2.0		2.0	
90 PERCENT EXCEEDS	.00		.00		.00	

08206700 SAN MIGUEL CREEK NEAR TILDEN, TX--Continued



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 mi^2.

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Oct 1984 to current year.

GAGE.--Nonrecording gage read twice daily. Supplemental water-stage recorder operated by city of Corpus Christi. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--The reservoir is formed by a rolled earthfill dam, 3.5 mi long. The dam was completed and deliberate impoundment began on Oct 12, 1982. The spillway has seven radial gates, each 50 ft long and 24 ft high. Water for municipal and industrial use to meet the needs of the Coastal Bend area is released downstream through a 5.0- x 5.0-foot square slide gate. Figures given herein represent total contents. 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 Jun 1, 1983, provided by the city of Corpus Christi. Elevation and reservoir contents record provided by the city of Corpus Christi.

EXTREMES (AT 0600 HOURS) FOR PERIOD OF RECORD.--Maximum daily contents, 733,100 acre-ft Jun 21, 1987 (elevation, 222.1 ft); minimum daily, 4,500 acre-ft Oct 1-9, 1984 (elevation, 156.9 ft).

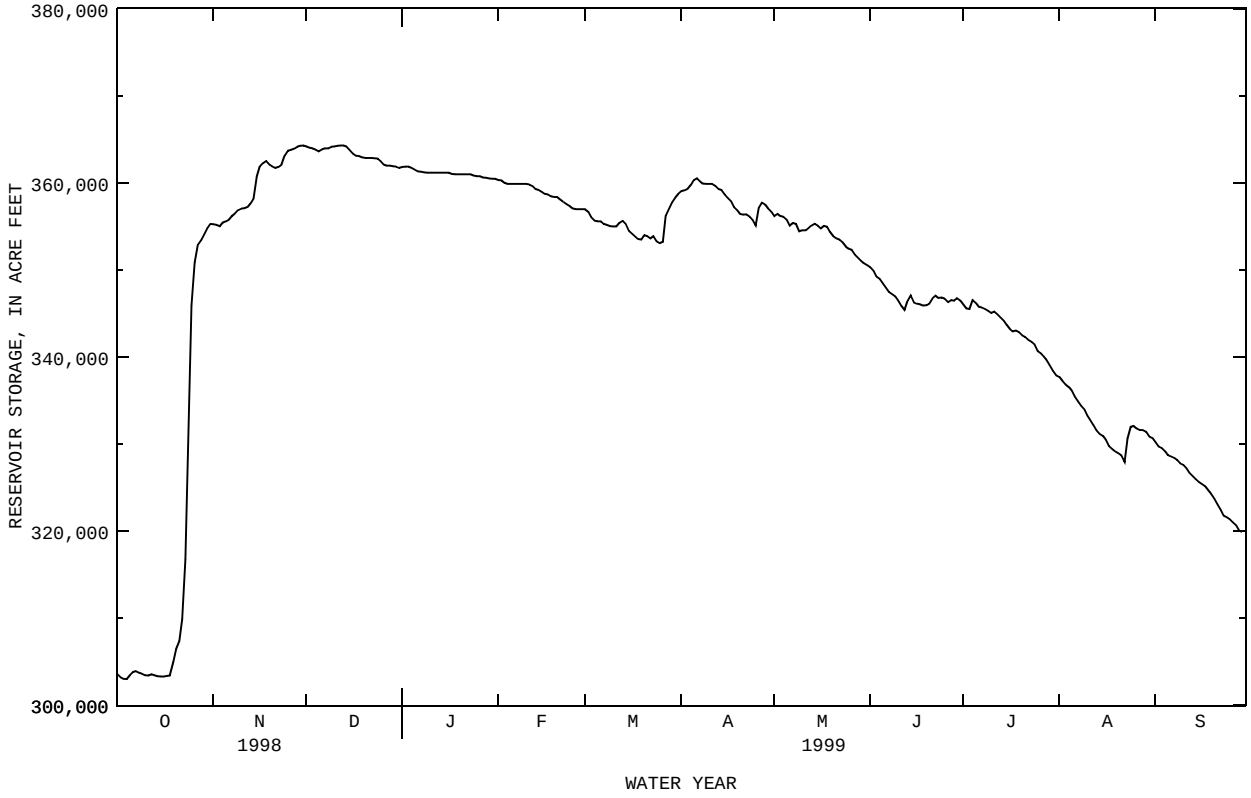
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 0600 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	303600	355400	364300	361700	360500	357000	358900	356600	350500	346400	337800	330700
2	303600	355200	364200	361900	360300	357000	359100	356100	350300	345900	337700	330100
3	303100	355200	364000	361900	360300	356600	359200	356600	349800	345500	337100	329600
4	303000	355000	364000	361900	359900	355900	359400	356100	349100	345500	336800	329600
5	303000	355600	363800	361700	359900	355600	359900	356100	349000	346900	336500	329100
6	303600	355600	363600	361500	359900	355600	360500	355700	348300	346000	336000	328600
7	303900	355900	364000	361300	359900	355600	360600	354900	347900	345700	335300	328600
8	303900	356300	364000	361300	359900	355200	360100	355600	347400	345700	334800	328400
9	303700	356600	364000	361200	359900	355200	359900	355200	347200	345500	334300	328100
10	303600	357000	364200	361200	359900	355000	359900	354200	346900	345300	333900	327700
11	303400	357100	364200	361200	359900	355000	359900	354700	346400	345000	333100	327600
12	303400	357100	364300	361200	359800	355000	359900	354500	345700	345300	332600	327100
13	303600	357300	364300	361200	359600	355600	359600	354900	345300	344800	332100	326600
14	303400	357800	364300	361200	359200	355700	359200	355200	346900	344500	331400	326200
15	303300	358400	364200	361200	359200	355200	359200	355400	347200	344100	331100	325900
16	303300	361500	363600	361200	358900	354300	358500	355000	346000	343600	330900	325600
17	303300	362000	363300	361200	358700	354200	358200	354700	346200	343100	330400	325400
18	303400	362400	363100	361000	358700	353800	357800	355200	346000	342900	329600	325100
19	303400	362600	363100	361000	358400	353500	357100	354900	345900	343100	329400	324600
20	305500	362000	362900	361000	358400	353500	356800	354200	346000	342800	329100	324200
21	306800	361900	362900	361000	358400	354200	356300	353800	346200	342400	328900	323600
22	307600	361700	362900	361000	358000	353800	356400	353600	346900	342300	328700	322900
23	310700	361900	362900	361000	357800	353600	356400	353500	347100	341900	327700	322300
24	318800	362200	362800	361000	357500	354000	356100	353100	346700	341700	331600	321600
25	340000	363500	362800	360800	357300	353100	355700	352600	346900	341400	332100	321600
26	347900	363800	362400	360800	357000	353100	354900	352400	346700	340500	332100	321300
27	351900	363800	362000	360800	357000	353300	358000	352300	346200	340400	331700	320900
28	353300	364000	362000	360600	357000	357300	357700	351600	346700	339900	331600	320600
29	353500	364200	362000	360600	---	357000	357500	351400	346400	339500	331600	319900
30	354300	364300	361900	360500	---	358000	357000	351000	346900	338800	331400	319900
31	355000	---	361900	360500	---	358400	---	350700	---	338300	330700	---
MAX	355000	364300	364300	361900	360500	358400	360600	356600	350500	346900	337800	330700
MIN	303000	355000	361900	360500	357000	353100	354900	350700	345300	338300	327700	319900
(+)	204.8	205.3	205.2	205.1	204.9	205.0	204.9	204.5	204.3	203.8	203.4	202.7
(@)	+51100	+9300	-2400	-1400	-3500	+1400	-1400	-6300	-3800	-8600	-7600	-10800

CAL YR 1998 MAX 364300 MIN 235900 (@) +85,100
WTR YR 1999 MAX 364300 MIN 303000 (@) +16,000

(+) Elevation, in feet, at end of month (0600).
(@) Change in contents, in acre-feet.

08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX--Continued



08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Mar 1999 to Sep 1999.
PESTICIDE DATA: Mar 1999 to Sep 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

08206890 - CHOKE CANYON RESERVOIR SITE AC

DATE	TIME	RESER-VOIR STORAGE (AC-FT) (00054)	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
MAR												
08...	0830	358000	1.00	663	8.2	18.0	8.86	7.4	78	180	25	52
08...	0832	--	10.0	663	8.2	18.0	--	7.4	78	--	--	--
08...	0834	--	20.0	663	8.2	18.0	--	7.3	77	--	--	--
08...	0836	--	30.0	663	8.1	18.0	--	7.3	77	--	--	--
08...	0838	--	40.0	663	8.1	18.0	--	7.3	77	--	--	--
08...	0840	--	50.0	663	8.1	18.0	--	7.3	77	--	--	--
08...	0842	--	60.0	664	7.9	17.5	--	5.3	55	--	--	--
08...	0844	--	72.0	665	7.6	17.5	--	3.8	40	180	24	52
MAY												
04...	0840	357000	1.00	709	8.4	23.5	8.86	7.0	83	190	38	56
04...	0842	--	10.0	708	8.4	23.5	--	6.7	80	--	--	--
04...	0844	--	20.0	709	8.4	23.0	--	6.7	79	--	--	--
04...	0846	--	30.0	710	8.3	23.0	--	5.6	66	--	--	--
04...	0848	--	35.0	711	8.2	23.0	--	5.3	63	--	--	--
04...	0850	--	40.0	711	8.2	23.0	--	5.1	60	--	--	--
04...	0852	--	50.0	709	7.6	22.0	--	.6	7	--	--	--
04...	0854	--	60.0	706	7.5	21.0	--	.2	2	--	--	--
04...	0856	--	65.0	706	7.5	21.0	--	.0	0	--	--	--
04...	0858	--	72.0	707	7.4	20.5	--	.0	0	190	29	56
04...	0900	--	--	--	--	--	--	--	--	--	--	--
SEP												
08...	0750	329000	1.00	742	8.0	29.0	13.1	6.3	82	180	50	49
08...	0752	--	10.0	746	7.6	28.0	--	4.0	51	--	--	--
08...	0754	--	20.0	747	7.5	28.0	--	3.7	48	--	--	--
08...	0756	--	30.0	749	7.4	28.0	--	2.7	35	--	--	--
08...	0758	--	40.0	750	7.2	28.0	--	.4	5	--	--	--
08...	0800	--	50.0	755	7.1	28.0	--	.0	0	--	--	--
08...	0802	--	60.0	760	7.0	27.0	--	.0	0	--	--	--
08...	0804	--	70.0	795	6.4	25.0	--	.0	0	220	12	64

08206890 - CHOKE CANYON RESERVOIR SITE AC

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)
MAR												
08...	12	58	2	40	10	150	48	85	.18	17	374	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	12	57	2	39	11	160	46	85	.17	17	374	--
MAY												
04...	13	63	2	40	10	160	53	93	.16	18	400	<1
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	<1
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	13	62	2	39	10	170	51	90	.16	20	403	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
08...	14	73	2	45	11	130	58	110	.17	20	410	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	14	66	2	38	10	210	35	96	.15	26	440	--

08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

08206890 - CHOKE CANYON RESERVOIR SITE AC

DATE	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)
MAR												
08...	<1.0	<1.0	4	91	<1.0	<1.0	6.1	<1.0	1.8	<10	<1.0	15
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	<1.0	<1.0	5	94	<1.0	<1.0	3.4	<1.0	2.0	<10	<1.0	14
MAY												
04...	<1.0	<1.0	5	100	<1.0	<1.0	<1.0	<1.0	1.4	<10	<1.0	14
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	<1.0	<1.0	6	114	<1.0	<1.0	<1.0	<1.0	<1.0	33	<1.0	14
04...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
08...	<1.0	<1.0	6	93	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	16
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	<1.0	<1.0	6	198	<1.0	<1.0	<1.0	<1.0	<1.0	53	<1.0	16

08206890 - CHOKE CANYON RESERVOIR SITE AC

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)	2,4,5-T TOTAL (UG/L) (39740)
MAR											
08...	<1.0	<.1	1.7	1.8	<1	<1.0	345	E7	1.5	<1.0	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	18	<.1	1.8	1.8	<1	<1.0	345	E6	4.5	<1.0	<.010
MAY											
04...	5.1	<.1	1.8	1.1	<1	<1.0	376	<10	1.9	<1.0	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	942	<.1	1.4	1.2	<1	<1.0	374	<10	2.9	<1.0	<.010
04...	--	--	--	--	--	--	--	--	--	--	--
SEP											
08...	<1.0	<.1	1.7	1.6	<1	<1.0	395	<10	2.5	<1.0	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	1410	<.1	<1.0	1.3	<1	--	435	<10	1.8	<1.0	<.010

08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

08206890 - CHOKE CANYON RESERVOIR SITE AC

DATE	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRI-THION (UG/L) (39786)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.030
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	<.010	<.010	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.010
04...	--	--	--	--	--	--	<.200	--	--	<.200	--
SEP											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	<.010	--	--	--	--	--	--

08206890 - CHOKE CANYON RESERVOIR SITE AC

DATE	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)	PARA-THION, TOTAL (UG/L) (39540)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39541)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<.010	--	<.010	<.040	--	<.010	--	<.010	--	<.010	<.010
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	<.010	--	<.010	<.010	--	<.010	--	<.010	--	<.010	<.010
04...	--	<.200	--	--	<.200	--	<.200	--	<.200	--	--
SEP											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--

08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

08206880 - CHOKE CANYON RESERVOIR SITE BC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
MAR							
08...	0920	1.00	663	8.3	20.0	7.8	86
08...	0922	10.0	663	8.3	20.0	7.8	86
08...	0924	21.0	662	8.3	19.5	7.7	84
MAY							
04...	0950	1.00	708	8.6	24.0	6.7	81
04...	0952	10.0	708	8.5	24.0	6.6	80
04...	0954	22.0	710	8.5	24.0	6.0	73
SEP							
08...	0840	1.00	735	8.1	30.0	7.0	93
08...	0842	10.0	736	8.1	30.0	6.7	89
08...	0844	18.0	744	7.5	29.0	1.5	20

08206870 - CHOKE CANYON RESERVOIR SITE CC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L) (00556)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)
MAR											
08...	0950	1.00	713	8.1	19.5	--	7.0	77	--	--	--
08...	0952	10.0	714	8.1	19.5	--	6.9	76	--	--	--
08...	0954	20.0	715	8.1	19.5	--	6.9	76	--	<.010	.010
08...	0956	30.0	716	8.1	19.5	--	6.8	74	--	--	--
08...	0958	40.0	749	8.0	19.0	--	6.1	66	--	--	--
08...	1000	46.0	735	8.0	19.0	--	6.1	66	--	<.010	<.010
MAY											
04...	1010	1.00	742	8.4	24.0	5.58	6.1	74	<1	--	--
04...	1012	10.0	743	8.4	24.0	--	5.9	71	--	--	--
04...	1014	20.0	745	8.3	24.0	--	5.7	69	--	<.010	<.010
04...	1016	30.0	739	8.3	24.0	--	5.7	69	--	--	--
04...	1018	40.0	745	8.3	24.0	--	5.6	68	--	--	--
04...	1020	46.0	748	8.2	24.0	--	5.2	63	--	<.010	<.010
04...	1022	--	--	--	--	--	--	--	--	--	--
SEP											
08...	0910	1.00	737	7.9	29.5	10.5	5.3	70	--	--	--
08...	0912	10.0	737	7.9	29.5	--	5.2	69	--	--	--
08...	0914	22.0	739	7.8	29.0	--	4.6	60	--	<.010	<.010
08...	0916	30.0	945	7.7	29.0	--	4.3	56	--	--	--
08...	0918	40.0	940	6.9	28.0	--	.0	0	--	<.010	<.010

08206870 - CHOKE CANYON RESERVOIR SITE CC

DATE	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PICLORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	CHLORPYRIFOS TOTAL RECOVER (UG/L) (38932)	DIAZINON, TOTAL (UG/L) (39570)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DISULFOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.030	<.010
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.030	<.010
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	<.010	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.010	<.010
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	<.010	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.010	<.010
04...	--	--	--	--	--	<.200	--	--	<.200	--	--
SEP											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	--	--	--	--	--	--	--

08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

08206870 - CHOKE CANYON RESERVOIR SITE CC

DATE	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	FONOFOS (DYFONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)
MAR										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	<.010	<.040	--	<.010	--	<.010	--	<.010	<.010
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	<.010	<.040	--	<.010	--	<.010	--	<.010	<.010
MAY										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	<.010	<.010	--	<.010	--	<.010	--	<.010	<.010
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	<.010	<.010	--	<.010	--	<.010	--	<.010	<.010
04...	<.200	--	--	<.200	--	<.200	--	<.200	--	--
SEP										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--

08206860 - CHOKE CANYON RESERVOIR SITE DC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
MAR							
08...	1055	1.00	689	8.3	20.0	7.5	83
08...	1057	10.0	689	8.3	20.0	7.5	83
08...	1059	16.0	689	8.3	20.0	7.4	82
MAY							
04...	1010	1.00	724	8.6	24.5	6.9	84
04...	1012	10.0	728	8.5	24.0	6.4	78
04...	1014	16.0	728	8.5	24.0	6.2	75
SEP							
08...	0955	1.00	732	8.1	30.5	5.9	79
08...	0957	10.0	733	8.0	30.5	5.6	75
08...	0959	15.0	733	7.8	30.5	4.1	55

08206850 - CHOKE CANYON RESERVOIR SITE EC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)
MAR											
08...	1010	1.00	710	8.2	20.0	--	7.3	81	--	--	--
08...	1012	10.0	710	8.2	20.0	--	7.3	81	--	--	--
08...	1014	23.0	710	8.2	19.5	--	7.0	77	<.010	<.010	<.010
MAY											
04...	1040	1.00	732	8.4	24.0	6.56	6.0	73	--	--	--
04...	1042	10.0	740	8.4	24.0	--	5.6	68	--	--	--
04...	1044	22.0	744	8.3	24.0	--	4.8	58	<.010	<.010	<.010
04...	1046	--	--	--	--	--	--	--	--	--	--
SEP											
08...	0940	1.00	732	7.8	29.5	13.4	4.9	65	--	--	--
08...	0942	10.0	733	7.8	29.5	--	4.3	57	--	--	--
08...	0944	20.0	738	7.4	29.5	--	1.8	24	<.010	<.010	<.010

08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

08206850 - CHOKE CANYON RESERVOIR SITE EC

DATE	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRI-THION (UG/L) (39786)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)
MAR										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.030	<.010
MAY										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.010	<.010
04...	--	--	--	--	<.200	--	--	<.200	--	--
SEP										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	--	--	--	--	--	--	--

08206850 - CHOKE CANYON RESERVOIR SITE EC

DATE	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)	PARA-THION, TOTAL (UG/L) (39540)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39541)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)
MAR										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	<.010	<.040	--	<.010	--	<.010	--	<.010	<.010
MAY										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	<.010	<.010	--	<.010	--	<.010	--	<.010	<.010
04...	<.200	--	--	<.200	--	<.200	--	<.200	--	--
SEP										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--

08206840 - CHOKE CANYON RESERVOIR SITE FC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)
MAR											
08...	1245	1.00	1080	7.6	21.0	--	5.0	56	--	--	--
08...	1247	10.0	1170	7.5	20.0	--	4.3	48	--	--	--
08...	1249	20.0	1380	7.5	20.0	--	4.4	49	--	--	--
08...	1251	30.0	1810	7.4	20.5	7.22	4.2	47	<.010	<.010	<.010
MAY											
04...	1220	1.00	1080	7.9	25.5	8.53	3.9	49	--	--	--
04...	1222	10.0	1100	7.8	24.5	--	3.1	38	--	--	--
04...	1224	20.0	1430	7.7	24.0	--	2.2	27	--	--	--
04...	1226	30.0	1490	7.6	24.0	--	2.4	29	<.010	<.010	<.010
04...	1228	--	--	--	--	--	--	--	--	--	--
SEP											
08...	1105	1.00	885	7.7	30.5	--	4.5	60	--	--	--
08...	1107	10.0	912	7.3	30.0	--	1.8	24	--	--	--
08...	1109	20.0	1320	6.9	28.5	--	.0	0	--	--	--
08...	1111	28.0	1420	6.8	28.0	--	.0	0	<.010	<.010	<.010

08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

08206840 - CHOKE CANYON RESERVOIR SITE FC

DATE	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRI-THION (UG/L) (39786)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)
MAR										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.030	<.010
MAY										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.010	<.010
04...	--	--	--	--	<.200	--	--	<.200	--	--
SEP										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	--	--	--	--	--	--	--

08206840 - CHOKE CANYON RESERVOIR SITE FC

DATE	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)	PARA-THION, TOTAL (UG/L) (39540)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39541)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)
MAR										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	<.010	<.040	--	<.010	--	<.010	--	<.010	<.010
MAY										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	<.010	<.010	--	<.010	--	<.010	--	<.010	<.010
04...	<.200	--	--	<.200	--	<.200	--	<.200	--	--
SEP										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--

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08206910 CHOKE CANYON RESERVOIR OWC NEAR THREE RIVERS, TX

LOCATION.--Lat 28°29'09", long 98°14'29", Live Oak County, Hydrologic Unit 12110108, 0.2 mi downstream from Choke Canyon Dam on Frio River, 3.7 mi upstream from Atascosa River, and 3.8 mi west of Three Rivers.

DRAINAGE AREA.--5,490 mi^2.

PERIOD OF RECORD.--Nov 1991 to current year (daily mean discharges when instantaneous discharge is below 73 ft^3/s).

GAGE.--Water-stage recorder. Datum of gage is 124.06 ft above sea level.

REMARKS.--Records good. Flow regulated by Choke Canyon Reservoir (station 08206900, capacity 677,300 acre-ft) 0.2 mi upstream.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	34	34	35	37	37	29	34	33	38	41	38
2	32	34	33	35	37	37	29	33	34	40	41	38
3	32	34	34	35	37	37	29	32	34	39	42	38
4	32	34	34	35	37	37	29	31	35	37	42	38
5	32	34	34	35	37	37	29	30	35	37	42	38
6	32	34	34	35	37	37	29	30	34	37	42	38
7	32	34	34	35	37	37	29	30	34	38	42	37
8	32	34	35	35	37	37	29	30	32	38	43	37
9	32	34	35	35	37	37	29	31	32	38	43	37
10	32	35	35	35	37	38	30	36	33	38	40	37
11	32	35	35	35	37	39	30	37	33	38	37	37
12	32	35	35	35	37	40	30	37	32	38	43	37
13	32	35	34	35	37	40	29	38	33	39	41	37
14	32	35	34	35	37	40	29	36	33	39	38	37
15	32	35	34	35	37	39	29	33	33	38	41	37
16	32	34	35	35	37	39	29	33	34	38	38	37
17	32	34	35	35	37	39	29	33	34	37	38	37
18	32	34	35	35	37	40	29	32	34	37	38	36
19	32	34	35	35	37	40	29	33	34	37	38	36
20	32	34	35	35	37	40	29	33	34	38	38	36
21	---	34	35	36	37	40	29	32	35	38	38	36
22	---	34	35	36	38	40	29	32	35	37	38	35
23	35	34	35	36	37	40	30	32	37	38	38	37
24	34	34	35	36	38	40	31	32	39	38	38	37
25	34	34	35	36	37	40	31	32	38	38	38	37
26	34	34	35	36	37	40	32	32	38	38	38	37
27	34	34	35	36	37	40	31	32	---	39	38	37
28	---	34	35	36	37	40	29	33	---	39	38	37
29	33	33	35	36	---	---	33	33	---	39	38	37
30	33	33	34	37	---	---	34	35	39	40	38	37
31	34	---	34	37	---	---	---	33	---	41	38	---
TOTAL	---	1024	1072	1098	1038	---	892	1020	---	1184	1226	1110
MEAN	---	34.1	34.6	35.4	37.1	---	29.7	32.9	---	38.2	39.5	37.0
MAX	---	35	35	37	38	---	34	38	---	41	43	38
MIN	---	33	33	35	37	---	29	30	---	37	37	35

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08208000 ATASCOSA RIVER AT WHITSETT, TX

LOCATION.--Lat 28°37'19", long 98°16'52", Live Oak County, Hydrologic Unit 12110110, on right bank at downstream side of bridge on Farm Road 99, 1.1 mi southwest of Whitsett, 4.2 mi downstream from La Parita Creek, and 12.9 mi upstream from mouth.

DRAINAGE AREA.--1,171 mi^2.

PERIOD OF RECORD.--Sep 1924 to May 1926, May 1932 to current year.

GAGE.--Water-stage recorder. Datum of gage is 159.04 ft above sea level. Prior to May 8, 1926, nonrecording gage at bridge destroyed in 1956 at site 200 ft downstream at 1.38 ft higher datum. May 21, 1932, to Feb 16, 1983, water-stage recorder at site 1,000 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--Records poor. Considerable loss of flow into various permeable formations occurs upstream from this station. The Campbellton water wells discharge into the Atascosa River 12 mi upstream from this station to supplement streamflow during dry periods; however, records provided by the city of Corpus Christi indicate that during the current year, the Campbellton water wells did not discharge into the Atascosa River. No known regulation. There are several small diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1881, that of Sep 23, 1967. Second highest stage, 41 ft (discharge 106,000 ft^3/s), occurred in Sep 1919.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 21	2245	1,780	16.92	Jun 27	2130	2,960	20.63
Mar 30	0015	3,910	a22.44				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.92	23	4.6	2.8	3.9	4.8	105	20	3.4	37	1.9	1.9
2	e.88	21	4.5	2.6	4.0	4.7	69	15	2.9	25	1.6	1.4
3	e.81	20	4.2	2.6	4.3	4.6	53	13	2.4	19	1.5	1.0
4	e.78	20	4.0	2.8	4.4	4.4	42	12	2.1	17	1.2	.82
5	e.77	19	3.8	2.8	4.3	4.2	33	11	1.8	17	1.0	.66
6	e67	25	3.5	3.0	4.3	4.2	27	9.7	1.5	19	1.0	.50
7	e648	23	3.5	3.1	4.4	4.1	24	8.2	1.3	19	.92	.47
8	e444	22	3.2	3.1	4.4	3.9	21	6.9	1.2	15	1.0	9.8
9	86	19	3.1	3.1	4.3	3.9	19	6.1	1.2	12	.99	25
10	36	19	3.2	3.1	4.5	3.8	17	7.0	.93	9.7	.89	12
11	21	17	3.4	3.2	4.6	3.6	16	7.4	.80	8.5	.82	8.2
12	15	15	3.3	3.2	4.1	3.6	15	14	.67	7.6	1.0	5.3
13	11	18	3.4	3.3	3.9	3.7	14	393	1.4	7.0	1.1	3.5
14	7.7	e306	3.5	3.7	3.6	3.5	13	118	55	6.2	1.0	2.4
15	5.6	e954	3.4	3.9	3.5	5.2	13	37	48	6.1	.80	1.8
16	4.1	e756	3.2	3.7	3.8	5.1	12	24	53	7.7	.55	1.3
17	3.0	e264	3.2	4.0	6.4	6.2	12	17	16	7.6	.44	1.0
18	e72	e109	3.1	4.2	30	5.2	12	16	7.6	7.9	.62	.83
19	e413	52	3.1	4.0	29	4.4	11	27	45	10	.53	.67
20	e999	30	3.0	4.1	15	3.9	11	29	38	22	.35	.60
21	e1550	19	3.0	4.4	9.7	3.6	11	28	46	15	.35	.51
22	e1490	14	2.7	4.1	7.3	3.3	10	20	91	11	.41	.40
23	e692	11	2.5	4.2	6.7	3.1	11	14	47	7.6	2.6	.34
24	e166	9.2	2.7	4.1	7.1	3.7	11	11	22	5.7	9.7	.30
25	89	7.6	2.7	4.1	5.9	3.6	11	8.6	17	4.6	13	.24
26	65	7.0	2.6	4.1	5.0	3.0	13	7.2	290	4.1	12	.21
27	48	6.4	2.7	3.9	4.6	2.7	151	6.1	2130	3.7	16	.22
28	39	5.9	3.0	4.1	4.7	300	136	5.0	1710	3.2	13	.28
29	33	5.6	3.0	4.0	---	2250	54	4.6	135	2.8	7.6	.28
30	28	5.0	2.8	4.2	---	2660	29	4.2	62	2.4	4.3	.27
31	25	---	2.7	4.1	---	270	---	3.9	---	2.1	2.8	---
TOTAL	7061.56	2822.7	100.6	111.6	197.7	5590.0	976	903.9	4834.20	342.5	100.97	82.20
MEAN	228	94.1	3.25	3.60	7.06	180	32.5	29.2	161	11.0	3.26	2.74
MAX	1550	954	4.6	4.4	30	2660	151	393	2130	37	16	25
MIN	.77	5.0	2.5	2.6	3.5	2.7	10	3.9	.67	2.1	.35	.21
AC-FT	14010	5600	200	221	392	11090	1940	1790	9590	679	200	163

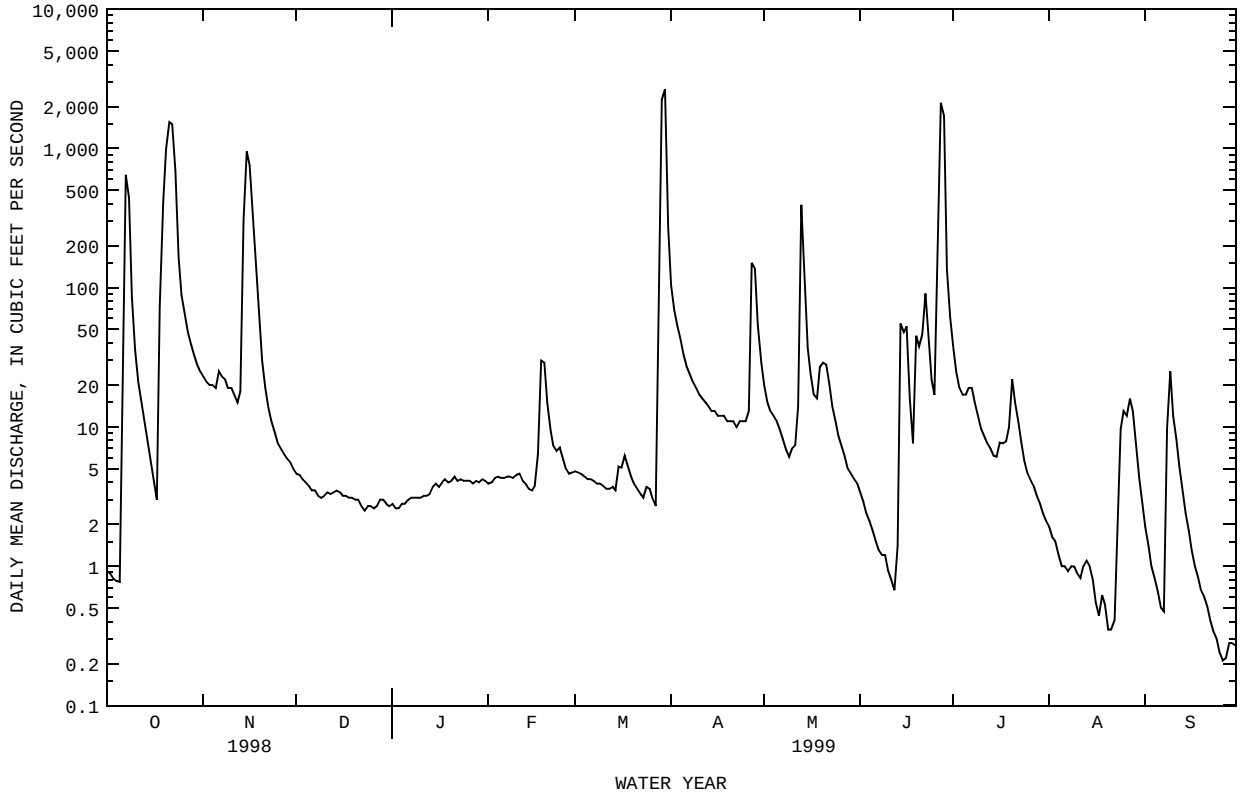
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1999, BY WATER YEAR (WY)

MEAN	104	50.1	57.7	79.2	95.7	34.4	149	227	238	118	76.1	243
MAX	788	399	1060	2053	1590	250	2298	1365	3445	2879	1207	5006
(WY)	1947	1941	1992	1968	1992	1970	1977	1957	1935	1942	1946	1967
MIN	.048	.21	.19	1.52	1.57	1.51	.57	.000	.000	.000	.000	.001
(WY)	1989	1989	1989	1996	1990	1996	1996	1996	1989	1998	1954	1997

08208000 ATASCOSA RIVER AT WHITSETT, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1932 - 1999	
ANNUAL TOTAL	30120.09		23123.93			
ANNUAL MEAN	82.5		63.4		123	
HIGHEST ANNUAL MEAN					472	1935
LOWEST ANNUAL MEAN					2.29	1989
HIGHEST DAILY MEAN	2080	Feb 2	2660	Mar 30	65000	Sep 23 1967
LOWEST DAILY MEAN	.00	Jun 16	.21	Sep 26	.00	Jun 11 1934
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 16	.26	Sep 24	.00	Jun 11 1934
INSTANTANEOUS PEAK FLOW			3910	Mar 30	i121000	Sep 23 1967
INSTANTANEOUS PEAK STAGE			a22.44	Mar 30	a41.30	Sep 23 1967
INSTANTANEOUS LOW FLOW			.19	Sep 26		
ANNUAL RUNOFF (AC-FT)	59740		45870		89020	
10 PERCENT EXCEEDS	130		53		93	
50 PERCENT EXCEEDS	4.4		4.8		11	
90 PERCENT EXCEEDS	.00		.97		.90	

e Estimated
i From indirect measurement of peak flow.
a From floodmark.



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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 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 sea level. Prior to Apr 5, 1932, nonrecording gage at railroad bridge 0.8 mi upstream at datum 1.87 ft higher. Apr 5, 1932, to Aug 9, 1983, recording gage at a site 0.8 mi upstream at datum 1.87 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. 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. Since Mar 1948, at least 10% of contributing drainage area has been regulated by the Upper Nueces Reservoir (normal storage 7,590 acre-ft). Since Oct 1982, flow of the Frio River has been regulated by Choke Canyon Reservoir (station 08206900, normal storage 677,300 acre-ft), about 11 mi upstream from this station on the Frio River. There are many small diversions for irrigation and for municipal supply above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--33 years (water years 1916-48) 945 ft^3/s (684,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1916-48).--Maximum discharge, 85,000 ft^3/s Sep 18, 1919 (gage height, 46.0 ft), site and datum then in use; no flow at times. Maximum stage since about 1875, that of Sep 23, 1967.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1510	1660	409	269	188	132	1230	108	176	826	134	1340
2	1540	1820	399	269	186	133	1160	98	161	842	129	1780
3	1310	1920	388	262	186	133	1210	96	148	869	122	2670
4	722	1820	383	260	186	134	1280	93	137	910	121	3700
5	581	986	376	258	182	133	1310	197	125	963	115	4370
6	756	585	370	257	179	129	800	314	115	1010	110	4430
7	1010	546	360	255	176	125	351	343	107	1070	107	4060
8	1390	530	349	257	174	121	290	330	102	1140	104	3540
9	1020	519	340	254	172	117	254	310	97	1200	100	2940
10	982	522	340	244	169	115	230	292	91	1130	96	1470
11	1060	537	337	234	164	114	211	273	85	517	90	309
12	1070	545	332	226	160	113	197	271	79	358	87	219
13	860	545	328	226	162	117	185	327	73	310	84	177
14	730	715	321	228	165	114	173	533	151	279	79	151
15	762	1320	315	228	168	113	166	260	231	260	75	136
16	819	1600	313	223	167	117	157	226	138	307	71	127
17	876	1100	315	218	165	120	149	199	147	368	69	119
18	956	789	316	214	162	118	140	193	140	329	69	111
19	1340	659	316	211	178	115	134	222	163	320	67	107
20	2000	611	312	207	177	107	129	282	299	294	64	104
21	1840	585	308	200	163	101	124	314	337	320	60	99
22	2240	559	302	194	159	325	121	318	500	275	57	95
23	2010	535	295	189	155	630	115	300	640	248	73	91
24	1320	512	292	186	151	760	109	276	629	224	121	90
25	1060	491	287	185	147	849	104	255	615	205	117	87
26	1060	472	281	183	143	925	197	235	759	192	84	84
27	1090	453	278	185	139	876	159	224	1360	184	412	82
28	1160	436	278	188	135	446	230	219	2600	172	654	80
29	1240	425	276	191	---	1040	165	214	1780	162	795	81
30	1360	416	273	197	---	2720	126	210	841	149	927	82
31	1480	---	270	194	---	2760	---	193	---	141	1120	---
TOTAL	37154	24213	10059	6892	4658	13852	11206	7725	12826	15574	6313	32731
MEAN	1199	807	324	222	166	447	374	249	428	502	204	1091
MAX	2240	1920	409	269	188	2760	1310	533	2600	1200	1120	4430
MIN	581	416	270	183	135	101	104	93	73	141	57	80
AC-FT	73690	48030	19950	13670	9240	27480	22230	15320	25440	30890	12520	64920

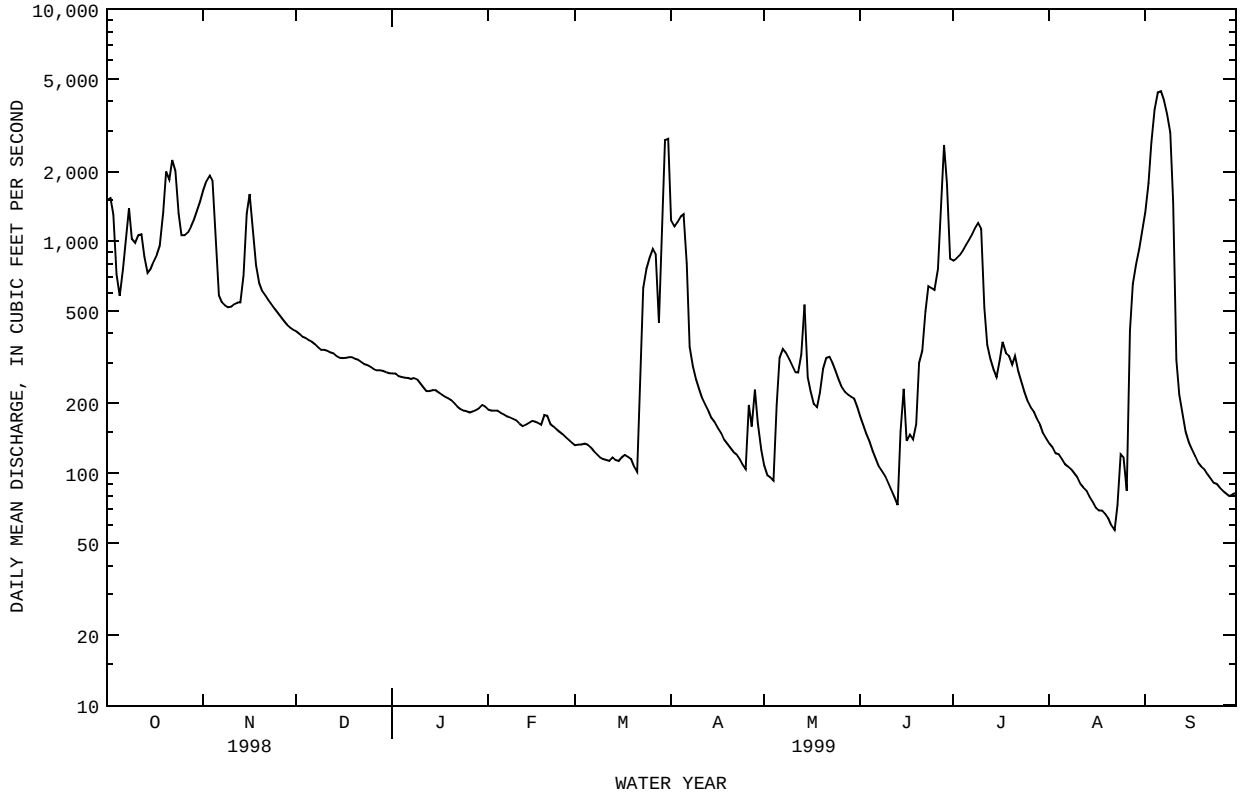
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1999z, BY WATER YEAR (WY)

MEAN	1199	466	219	326	371	226	456	1121	1315	645	623	1355
MAX	13810	4944	1801	4833	7868	2285	5082	8645	8451	5723	10550	23650
(WY)	1972	1977	1977	1958	1958	1949	1977	1957	1987	1971	1971	1967
MIN	.54	.033	.63	3.61	5.80	6.21	4.30	1.85	8.72	3.05	.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 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1949 - 1999z	
ANNUAL TOTAL	202598		183203			
ANNUAL MEAN	555		502		694	
HIGHEST ANNUAL MEAN					2110	1971
LOWEST ANNUAL MEAN					82.3	1984
HIGHEST DAILY MEAN	9740	Sep 9	4430	Sep 6	128000	Sep 23 1967
LOWEST DAILY MEAN	31	May 30	57	Aug 22	.00	Aug 25 1950
ANNUAL SEVEN-DAY MINIMUM	31	Jun 2	65	Aug 16	.00	Aug 28 1950
INSTANTANEOUS PEAK FLOW			4510	Sep 6	18300	Sep 21 1983
INSTANTANEOUS PEAK STAGE			23.39	Sep 6	37.29	Jun 22 1987
ANNUAL RUNOFF (AC-FT)	401900		363400		502600	
10 PERCENT EXCEEDS	1440		1230		1430	
50 PERCENT EXCEEDS	79		255		92	
90 PERCENT EXCEEDS	32		103		5.8	

z Period of requlated streamflow.



08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Aug 1941 to Sep 1952, May 1965 to current year.
BIOCHEMICAL DATA: May 1965 to Jul 1996.
PESTICIDE DATA: Jan 1968 to May 1982, Oct 1996 to current year.
SEDIMENT DATA: Oct 1941 to Aug 1945, Mar 1951 to Sep 1952, Oct 1974 to Aug 1994.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1941 to Sep 1952, Oct 1974 to Sep 1981.
WATER TEMPERATURE: Oct 1950 to Sep 1952, Oct 1974 to Sep 1981.
SUSPENDED-SEDIMENT DISCHARGE: Oct 1950 to Sep 1951.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,310 microsiemens, Jan 17, 1977; minimum daily, 157 microsiemens, May 26, 1975.
WATER TEMPERATURE: Maximum daily, 32.0°C, on several days during summers of 1977, 1978, and 1981; minimum daily, 7.0°C, Jan 2, 3, 1979.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)
DEC												
01...	1245	408	554	8.2	21.0	8.3	93	220	32	66	13	26
MAR												
09...	1145	118	731	7.9	21.0	7.8	88	210	41	59	15	63
MAY												
27...	1323	224	556	7.9	28.0	7.2	93	200	44	57	13	34
AUG												
25...	0935	128	542	7.7	27.0	6.6	83	160	32	46	11	43

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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)
DEC												
01...	.8	21	3.2	190	32	42	.13	--	298	<.010	1.01	.020
MAR												
09...	2	39	6.0	170	60	97	.18	8.6	412	<.010	.220	.030
MAY												
27...	1	27	3.9	150	34	55	.15	12	304	<.010	.573	.034
AUG												
25...	1	36	7.3	130	39	64	.14	14	302	<.010	.097	.033

DATE	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	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)
DEC											
01...	.16	.17	<.050	.035	.11	<1.0	<1.0	2	85	<1.0	<1.0
MAR											
09...	.28	.31	E.034	.030	.09	<1.0	<1.0	3	104	<1.0	<1.0
MAY											
27...	.24	.28	E.033	.038	.12	1.1	<1.0	3	93	<1.0	<1.0
AUG											
25...	.40	.43	.057	.050	.15	1.2	<1.0	4	101	<1.0	<1.0

DATE	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)	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)
DEC											
01...	1.7	<1.0	<1.0	--	<1.0	--	1.1	<.1	<1.0	1.1	1
MAR											
09...	9.3	<1.0	1.6	<10	<1.0	16	5.9	<.1	1.4	2.4	<1
MAY											
27...	<1.0	<1.0	1.6	<10	<1.0	9	2.2	<.1	1.2	1.0	<1
AUG											
25...	<1.0	<1.0	1.9	<10	<1.0	11	2.1	<.1	1.5	1.3	<1

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)
DEC											
01...	<1.0	--	--	<1.0	<1.0	<.010	<.010	<.010	<.010	<.010	<.010
MAR											
09...	<1.0	413	<10	1.4	<1.0	<.010	<.010	<.010	<.010	<.010	<.010
MAY											
27...	<1.0	345	E6	1.3	<1.0	<.010	<.010	<.010	<.010	<.010	<.010
AUG											
25...	<1.0	303	E7	1.0	<1.0	<.010	<.010	<.010	<.010	<.010	<.010

DATE	TOTAL TRI-THION (UG/L) (39786)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)
DEC											
01...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
MAR											
09...	<.010	<.010	<.010	<.030	<.010	<.010	<.040	<.010	<.010	<.010	<.010
MAY											
27...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
AUG											
25...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010

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 mi^2.

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Sep 1948 to current year. Prior to Oct 1960, month end records only. Oct 1960 to Aug 31, 1998, the city of Corpus Christi provided daily observer readings. Beginning Sep 1, 1998, a USGS recording gage at site. The Natural Resources Conservation Service, in cooperation with the Texas Natural Resources Conservation Commission, collected fragmentary gage-height records in connection with sedimentation studies from Feb 2, 1942, to Jul 10, 1947.

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 sea level. Prior to Oct 1, 1957, nonrecording gage at various sites 0.2 mi upstream at datum 0.52 ft higher. Oct 1, 1957, to Apr 3, 1961, nonrecording gage near left end of Mathis Dam 0.2 mi upstream at present datum. Satellite telemeter at station.

REMARKS.--Mathis Dam was completed and storage began Jul 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. Water for municipal supply for the city of Corpus Christi is released downstream through a 4.0-foot-diameter cylinder valve and three 2.5- by 4.0-foot rectangular openings. The releases are diverted from the river at Calallen 35 mi downstream for domestic, municipal, irrigation, mining, and industrial uses in the Corpus Christi area. The cities of Alice, Beeville, and Mathis withdrew 6,944 acre-ft from the lake during the current year for municipal use. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	106.0
Top of north spillway gates	94.46
Top of south spillway gates	94.0
Crest of spillways	88.0
Lowest gated outlet (invert)	55.5

COOPERATION.--Capacity curve 5-C is from a Jan 1987 survey provided by the city of Corpus Christi. Figures for new capacity curve were used beginning Oct 1, 1989.

EXTREMES (AT 0600 HOURS) FOR PERIOD OF RECORD.--Maximum daily contents, 320,000 acre-ft Sep 22, 1967, and Sep 12, 1971; maximum elevation, 94.82 ft Sep 22, 1967; minimum daily, 14,740 acre-ft May 5, 1951 (elevation, 67.62 ft).

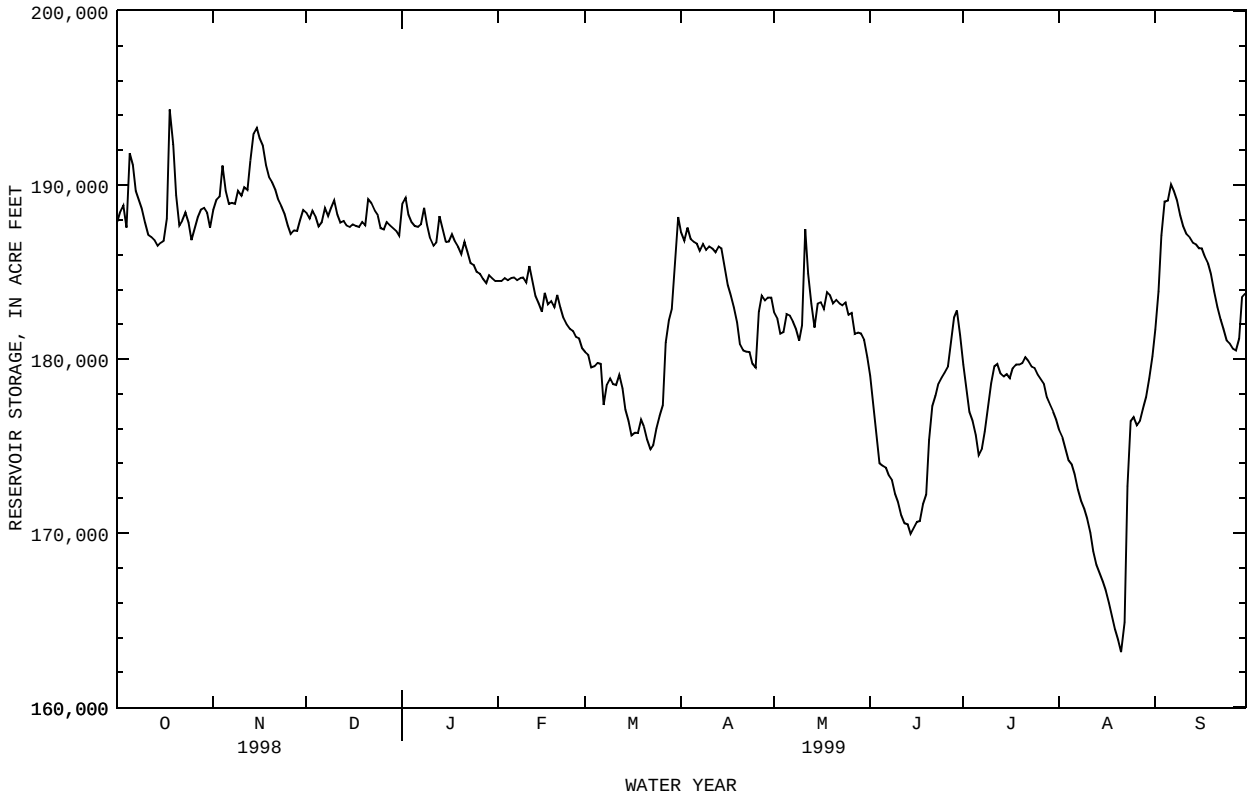
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 0600 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	187600	187300	188700	187000	184500	180400	188700	183500	179800	180900	176400	180500
2	188000	189000	188300	189600	184500	180400	186800	182400	178800	179300	175700	182100
3	188700	189200	188000	189200	184500	180200	186800	182300	176900	178100	175400	184500
4	188900	189400	188700	188000	184700	179300	187800	181200	175600	176600	174700	188000
5	187100	191700	188000	187800	184500	179700	186600	181700	173500	176400	174000	189400
6	193400	189000	187500	187600	184700	179800	186800	182900	174000	175400	173900	189000
7	190400	188900	188000	187600	184700	179700	186600	182400	173700	174200	173200	190400
8	189400	189000	188900	187800	184500	176600	186100	182100	173200	175100	172300	189400
9	189000	188900	188000	189000	184700	179200	186800	181600	173000	176100	171700	189000
10	188500	189900	188900	187300	184700	178800	186100	180900	172000	177500	171300	188000
11	187600	189200	189200	186800	184300	178500	186600	182300	171700	179000	170700	187500
12	187000	190100	188000	186400	185700	178500	186300	189200	170800	179800	169800	187100
13	187000	189600	187800	186800	184000	179300	186100	183500	170500	179700	168700	187000
14	186800	192000	188000	188700	183500	178000	186600	183100	170500	179000	168000	186600
15	186400	193300	187600	187100	183100	176800	186300	181400	169800	179000	167600	186600
16	186800	193300	187600	186600	182600	176300	185000	183800	170500	179200	167100	186300
17	186800	192500	187800	186800	184200	175400	184000	183100	170700	178800	166600	186400
18	188500	192200	187600	187300	182800	175900	183500	182800	170700	179700	165800	185700
19	196300	190800	187600	186600	183500	175700	182800	184200	172000	179700	165000	185400
20	191000	190300	188000	186400	182800	176800	181900	183500	172300	179700	164300	184700
21	188900	190100	187600	185900	184000	175900	180500	183100	176400	179800	163700	183600
22	187300	189600	189700	187000	182600	175200	180500	183500	177600	180200	163000	182800
23	188200	189000	188700	185900	182300	174700	180400	183100	178000	179800	165500	182100
24	188500	188700	188500	185400	181900	175200	180400	183100	178800	179500	175100	181600
25	187600	188200	188200	185400	181700	176300	179500	183300	179000	179500	176900	180900
26	186600	187500	187300	184900	181600	176900	179500	182300	179300	179000	176600	180900
27	187800	187100	187500	184900	181200	177500	183800	182800	179700	178800	176100	180500
28	188300	187500	188000	184500	181200	182100	183600	181000	181200	178500	176600	180500
29	188700	187300	187600	184300	---	182300	183300	181700	182800	177600	177300	181400
30	188700	188200	187500	185000	---	183100	183600	181400	182800	177300	178000	184300
31	188300	---	187300	184500	---	186600	---	181000	---	176900	179200	---
MAX	196300	193300	189700	189600	185700	186600	188700	189200	182800	180900	179200	190400
MIN	186400	187100	187300	184300	181200	174700	179500	180900	169800	174200	163000	180500
(+)	91.12	91.11	91.06	90.90	90.71	91.02	90.85	90.70	90.80	90.46	90.59	90.89
(@)	+2000	-100	-900	-2800	-3300	+5400	-3000	-2600	+1800	-5900	+2300	+5100

CAL YR 1998 MAX 196300 MIN 95510 (@) +17300
WTR YR 1999 MAX 196300 MIN 163000 (@) -2000

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

08210500 LAKE CORPUS CHRISTI NEAR MATHIS, TX--Continued



08210500 LAKE CORPUS CHRISTI NEAR MATHIS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Mar 1971 to Sep 1976, Mar 1999 to Sep 1999.
BIOCHEMICAL DATA: Mar 1971 to Sep 1976, Mar 1999 to Sep 1999.
PESTICIDE DATA: Mar 1999 to Sep 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

280238097521301 - LAKE 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 (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)
MAR												
08...	1555	179000	1.00	461	8.4	21.0	4.27	8.3	94	170	9	56
08...	1557	--	10.0	460	8.4	20.0	--	8.1	89	--	--	--
08...	1559	--	20.0	461	8.3	20.0	--	8.1	89	--	--	--
08...	1601	--	30.0	460	8.3	20.0	--	8.0	88	--	--	--
08...	1603	--	37.0	460	8.2	20.0	--	7.2	80	170	2	54
MAY												
04...	1535	183000	1.00	502	8.5	25.5	6.89	7.6	95	180	17	58
04...	1537	--	10.0	503	8.5	25.0	--	7.8	96	--	--	--
04...	1539	--	20.0	502	8.4	24.5	--	7.6	93	--	--	--
04...	1541	--	30.0	502	8.4	24.0	--	7.2	87	--	--	--
04...	1543	--	37.0	502	8.3	24.0	--	6.8	82	180	16	58
04...	1545	--	--	--	--	--	--	--	--	--	--	--
SEP												
08...	1340	188000	1.00	538	8.2	30.0	7.87	5.1	68	180	29	57
08...	1342	--	10.0	540	8.0	29.0	--	4.6	60	--	--	--
08...	1344	--	20.0	540	7.9	29.0	--	4.1	54	--	--	--
08...	1346	--	30.0	540	7.4	28.0	--	.9	12	--	--	--
08...	1348	--	36.0	541	7.2	28.0	--	.4	5	180	30	58

280238097521301 - LAKE CORPUS CHRISTI SITE AC

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)
MAR												
08...	7.9	25	.8	23	7.9	160	24	32	.14	16	267	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	7.9	26	.9	24	7.7	170	24	32	.15	16	267	--
MAY												
04...	8.8	29	.9	25	7.9	170	30	38	.15	16	288	<1
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	1
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	8.8	28	.9	24	7.9	170	29	38	.15	16	287	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
08...	8.8	36	1	29	8.3	150	32	50	.17	20	302	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	9.1	35	1	28	8.3	150	31	49	.17	22	304	--

08210500 LAKE CORPUS CHRISTI NEAR MATHIS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

280238097521301 - LAKE 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)
MAR												
08...	28	<1.0	5	111	<1.0	<1.0	6.0	<1.0	2.2	<10	<1.0	8
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	<1.0	<1.0	5	111	<1.0	<1.0	7.0	<1.0	2.0	<10	<1.0	8
MAY												
04...	<1.0	<1.0	5	118	<1.0	<1.0	<1.0	<1.0	2.4	<10	<1.0	8
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	<1.0	<1.0	4	119	<1.0	<1.0	<1.0	<1.0	1.6	E5.6	<1.0	8
04...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
08...	<1.0	<1.0	8	110	<1.0	<1.0	<1.0	<1.0	2.3	<10	<1.0	4
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	<1.0	<1.0	9	106	<1.0	<1.0	<1.0	<1.0	1.5	<10	<1.0	10

280238097521301 - LAKE CORPUS CHRISTI SITE AC

DATE	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)	2,4,5-T TOTAL (UG/L) (39740)
MAR											
08...	<1.0	<.1	1.3	2.2	<1	<1.0	284	E7	6.4	<1.0	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	2.9	<.1	1.4	2.0	<1	<1.0	286	E9	1.3	<1.0	<.010
MAY											
04...	<1.0	<.1	1.5	1.3	<1	<1.0	309	E9	1.5	1.0	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	157	<.1	1.5	1.4	<1	<1.0	309	10	4.7	1.1	<.010
04...	--	--	--	--	--	--	--	--	--	--	--
SEP											
08...	<1.0	<.1	1.7	2.0	<1	<1.0	312	11	1.1	<1.0	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	133	<.1	1.6	2.1	<1	<1.0	317	E10	3.6	<1.0	--

280238097521301 - LAKE CORPUS CHRISTI SITE AC

DATE	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRI-THION (UG/L) (39786)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.020
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	<.010	<.010	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.010
04...	--	--	--	--	--	--	<.200	--	--	<.200	--
SEP											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	<.010	--	<.010	<.010	--	<.010

08210500 LAKE CORPUS CHRISTI NEAR MATHIS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

280238097521301 - LAKE CORPUS CHRISTI SITE AC

DATE	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	FONOFOS (DYFONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<.010	--	<.010	<.020	--	<.010	--	<.010	--	<.010	<.010
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	<.010	--	<.010	<.010	--	<.010	--	<.010	--	<.010	<.010
04...	--	<.200	--	--	<.200	--	<.200	--	<.200	--	--
SEP											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<.010	--	<.010	<.010	--	<.010	--	<.010	--	<.010	<.010

280656097542801 - LAKE CORPUS CHRISTI SITE BC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L) (00556)
MAR									
08...	1635	1.00	488	8.4	22.0	--	8.4	97	--
08...	1637	10.0	486	8.4	20.5	--	8.1	90	--
08...	1639	20.0	481	8.4	20.5	--	8.0	89	--
MAY									
04...	1625	1.00	515	8.5	25.5	4.59	7.9	98	<1
04...	1627	10.0	515	8.5	24.0	--	7.6	92	--
04...	1629	20.0	517	8.4	24.0	--	7.4	90	--
SEP									
08...	1435	1.00	486	8.0	30.5	--	5.4	72	--
08...	1437	10.0	492	7.9	29.5	--	4.7	62	--
08...	1439	20.0	484	7.8	29.5	--	4.1	54	--

280656097542801 - LAKE CORPUS CHRISTI SITE BC

DATE	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PICLORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRITHION (UG/L) (39786)	CHLORPYRIFOS TOTAL RECOVER (UG/L) (38932)	DIAZINON, TOTAL (UG/L) (39570)
MAR									
08...	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
08...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
MAY									
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	<.010	<.010	<.010
04...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
SEP									
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	<.010	<.010	<.010
08...	--	--	--	--	--	--	<.010	<.010	<.010

08210500 LAKE CORPUS CHRISTI NEAR MATHIS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

280656097542801 - LAKE CORPUS CHRISTI SITE BC

DATE	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)
MAR								
08...	--	--	--	--	--	--	--	--
08...	<.020	<.010	<.010	<.020	<.010	<.010	<.010	<.010
08...	<.020	<.010	<.010	<.020	<.010	<.010	<.010	<.010
MAY								
04...	--	--	--	--	--	--	--	--
04...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
04...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
SEP								
08...	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
08...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010

280921097562701 - LAKE 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							
08...	1700	1.00	534	8.3	23.5	8.3	98
08...	1702	9.00	531	8.3	21.0	7.7	87
MAY							
04...	1645	1.00	526	8.4	26.5	7.4	94
04...	1647	9.00	526	8.2	24.0	6.6	80
SEP							
08...	1455	1.00	506	8.1	31.5	6.0	82
08...	1457	9.00	514	7.7	29.5	3.6	47

281108097544701 - LAKE 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							
08...	1755	1.00	547	8.3	22.5	8.5	99
08...	1757	10.0	574	8.2	21.0	7.4	83
08...	1759	16.0	582	8.2	21.0	7.4	83
MAY							
04...	1703	1.00	522	8.4	27.0	7.6	97
04...	1705	10.0	526	8.2	24.0	7.0	85
04...	1707	16.0	534	8.1	24.0	6.5	79
SEP							
08...	1525	1.00	355	7.2	31.5	2.2	30
08...	1527	10.0	355	7.2	30.5	1.9	25
08...	1529	17.0	355	7.2	30.5	1.8	24

08210500 LAKE CORPUS CHRISTI NEAR MATHIS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

281411097564801 - LAKE CORPUS CHRISTI SITE EC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L) (00556)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)
MAR											
08...	1730	1.00	735	8.0	22.5	1.97	7.8	91	--	--	--
08...	1732	10.0	776	7.9	20.5	--	6.1	68	--	<.010	<.010
08...	1734	18.0	775	7.9	21.0	--	6.0	68	--	<.010	<.010
MAY											
04...	1730	1.00	690	8.2	28.5	2.95	7.6	100	<1	--	--
04...	1732	10.0	740	7.6	24.5	--	4.4	54	--	--	--
04...	1734	18.0	739	7.6	24.5	--	4.3	53	--	<.010	<.010
04...	1736	--	--	--	--	--	--	--	--	--	--
SEP											
08...	1645	1.00	364	7.3	30.0	1.97	3.0	40	--	--	--
08...	1647	10.0	363	7.3	30.0	--	3.0	40	--	--	--
08...	1649	20.0	367	7.3	30.0	--	3.1	41	--	--	--

281411097564801 - LAKE CORPUS CHRISTI SITE EC

DATE	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PICLORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	CHLORPYRIFOS TOTAL RECOVER (UG/L) (38932)	DIAZINON, TOTAL (UG/L) (39570)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DISULFOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	<.010	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.020	<.010
08...	<.010	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.020	<.010
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	<.010	--	<.010	<.010	--	<.010	<.010
04...	<.010	<.010	<.010	<.010	<.010	--	<.010	<.010	--	<.010	<.010
04...	--	--	--	--	--	<.200	--	--	<.200	--	--
SEP											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	<.010	--	<.010	<.010	--	<.010	<.010
08...	--	--	--	--	<.010	--	<.010	<.010	--	<.010	<.010

281411097564801 - LAKE CORPUS CHRISTI SITE EC

DATE	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	FONOFOS (DYFONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)
MAR										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	<.010	<.020	--	<.010	--	<.010	--	<.010	<.010
08...	--	<.010	<.020	--	<.010	--	<.010	--	<.010	<.010
MAY										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	<.010	<.010	--	<.010	--	<.010	--	<.010	<.010
04...	--	<.010	<.010	--	<.010	--	<.010	--	<.010	<.010
04...	<.200	--	--	<.200	--	<.200	--	<.200	--	--
SEP										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	<.010	<.010	--	<.010	--	<.010	--	<.010	<.010
08...	--	<.010	<.010	--	<.010	--	<.010	--	<.010	<.010

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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 mi^2, of which 16,656 mi^2 is above Wesley E. Seale Dam.

PERIOD OF RECORD.--Aug 1939 to current year.
Water-quality records.--Chemical data: Oct 1947 to Sep 1991. Specific conductance: Oct 1947 to Sep 1991. Water temperature: Oct 1947 to Sep 1991.

GAGE.--Water-stage recorder. Datum of gage is 26.53 ft above sea level. Aug 5, 1939, to Aug 29, 1984, on left bank 9 ft upstream at datum 1.0 ft higher. Aug 29 to Nov 5, 1984, on left bank 9 ft upstream at present datum. Nov 5, 1984, to Aug 5, 1987, on left bank 154 ft downstream at present datum. 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 by Lake Corpus Christi (station 08210500, normal storage 272,352 acre-ft) 0.6 mi upstream. Upstream from Lake Corpus Christi, flow is affected by recharge to permeable formations, small diversions, and minor regulation. Water for municipal and industrial uses at Corpus Christi is released from Lake Corpus Christi above gage and is diverted from river at Calallen 34 mi downstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of about 41 ft, present datum, occurred Sep 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 Sep 24, 1967.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	925	1400	274	208	113	e237	2200	108	612	1420	151	146
2	942	1450	294	214	100	177	1050	108	679	1400	139	158
3	969	1660	274	208	117	142	778	111	635	1390	193	231
4	982	1700	321	207	125	161	1500	123	452	1380	170	1360
5	983	1400	342	207	151	180	1410	101	186	1370	144	3610
6	1020	977	342	207	151	185	772	104	165	1350	143	4530
7	1000	575	341	193	109	200	323	142	168	735	137	4970
8	1130	370	301	233	121	149	234	161	160	257	129	4610
9	1200	411	339	238	126	144	198	148	178	178	118	3740
10	1200	382	341	236	137	151	196	172	178	130	171	2370
11	1200	462	341	238	142	156	196	62	178	123	159	709
12	1120	539	315	240	143	156	172	97	178	112	178	227
13	877	543	241	241	141	155	181	123	177	115	178	172
14	745	782	224	228	147	142	181	127	175	139	167	165
15	585	1010	241	207	151	142	164	132	142	168	165	126
16	437	1460	241	e224	134	120	171	158	128	178	192	141
17	349	1430	241	e224	142	131	171	117	130	158	217	134
18	1310	1370	241	e224	142	152	156	135	142	144	218	123
19	5350	1130	241	e224	142	171	144	164	142	135	223	124
20	5440	663	240	e230	128	238	185	147	296	145	198	137
21	4040	678	218	233	127	245	190	138	202	149	184	144
22	1390	706	244	264	e138	261	160	135	139	133	243	118
23	1410	628	e238	212	e143	257	154	153	142	122	232	106
24	1670	737	e238	205	129	287	142	142	142	107	e400	98
25	1570	729	e238	204	203	300	130	163	149	106	e150	108
26	880	668	e238	163	247	301	127	189	211	86	114	108
27	605	290	e238	167	e209	311	117	233	315	115	114	101
28	916	270	e238	160	e232	349	103	283	747	121	127	81
29	1060	270	207	144	---	281	101	296	1370	137	174	193
30	1290	257	208	130	---	320	108	313	1440	158	179	185
31	1370	---	208	117	---	693	---	361	---	158	146	---
TOTAL	43965	24947	8248	6430	4090	6894	11714	4946	9958	12419	5453	29025
MEAN	1418	832	266	207	146	222	390	160	332	401	176	968
MAX	5440	1700	342	264	247	693	2200	361	1440	1420	400	4970
MIN	349	257	207	117	100	120	101	62	128	86	114	81
AC-FT	87200	49480	16360	12750	8110	13670	23230	9810	19750	24630	10820	57570

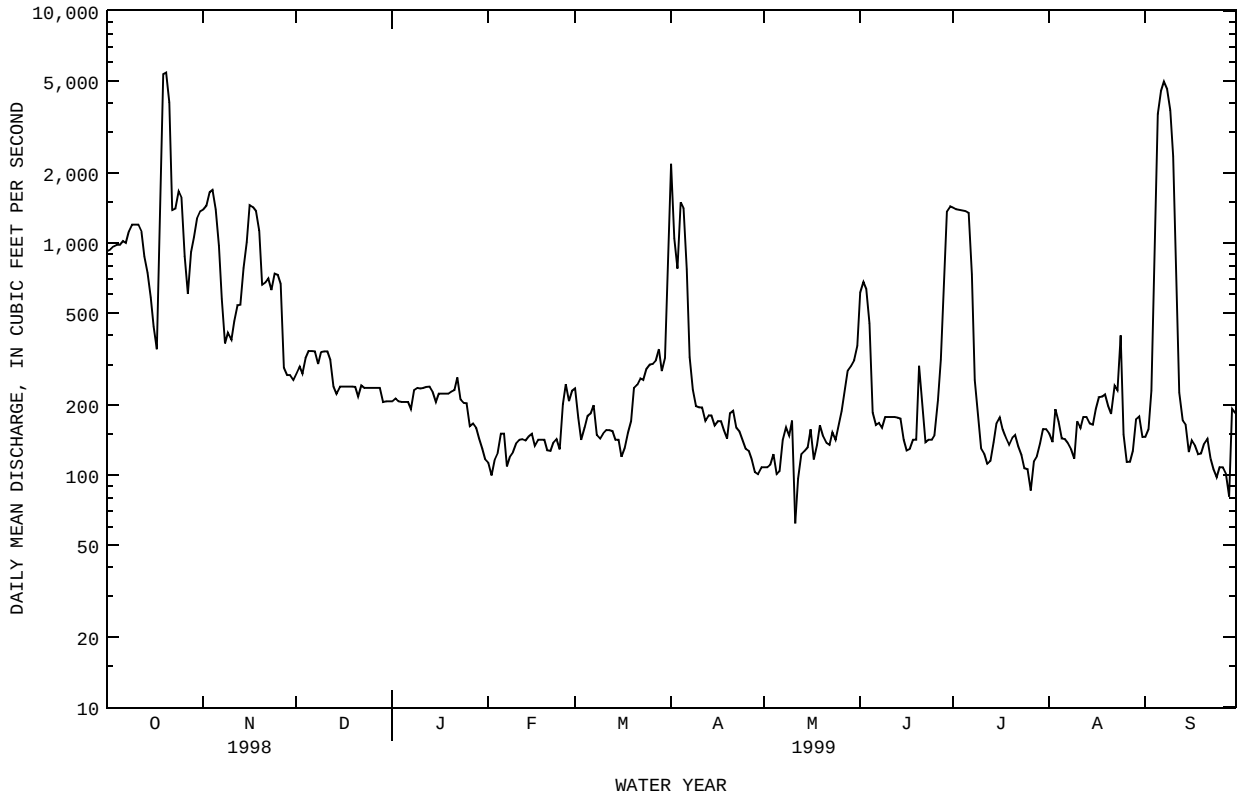
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1999, BY WATER YEAR (WY)

MEAN	1252	431	200	297	330	283	436	1206	1288	829	523	1512
MAX	14850	4552	1871	4994	5165	4377	4639	10500	8204	10440	10050	24950
(WY)	1972	1977	1977	1958	1958	1958	1977	1941	1987	1942	1971	1967
MIN	55.3	31.0	27.9	28.1	24.3	31.0	37.3	39.3	43.7	67.0	41.6	44.0
(WY)	1953	1940	1940	1940	1942	1948	1948	1948	1948	1951	1943	1945

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1939 - 1999	
ANNUAL TOTAL	168851		168089			
ANNUAL MEAN	463		461		717	
HIGHEST ANNUAL MEAN					2167	1967
LOWEST ANNUAL MEAN					104	1964
HIGHEST DAILY MEAN	5440	Oct 20	5440	Oct 20	125000	Sep 25 1967
LOWEST DAILY MEAN	95	Mar 16	62	May 11	6.8	Aug 15 1940
ANNUAL SEVEN-DAY MINIMUM	109	Feb 27	103	Sep 22	15	Aug 9 1940
INSTANTANEOUS PEAK FLOW			6380	Oct 19	i138000	Sep 24 1967
INSTANTANEOUS PEAK STAGE			24.56	Oct 19	a48.70	Sep 24 1967
ANNUAL RUNOFF (AC-FT)	334900		333400		519700	
10 PERCENT EXCEEDS	1150		1240		1250	
50 PERCENT EXCEEDS	240		198		131	
90 PERCENT EXCEEDS	117		122		53	

e Estimated
i From indirect measurement of peak flow.
a From floodmark.

08211000 NUECES RIVER NEAR MATHIS, TX--Continued



08211200 NUECES RIVER AT BLUNTZER, TX

LOCATION.--Lat 27°56'15", long 97°46'32", Nueces County, Hydrologic Unit 12110111, on right bank, at downstream end of bridge on Farm Road 666, 1.2 mi south of San Patricio, 5.5 mi upstream from Cayamon Creek, and 10.3 mi northwest of Calallen.

DRAINAGE AREA.--16,772 mi^2.

PERIOD OF RECORD.--Jan 1966 to Feb 1967, Mar 1992 to current year (daily mean discharges when instantaneous maximum discharge is less than 2,950 ft^3/s). Prior to Oct 1994, published as "above Calallen".

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Mar 27, 1992, at same site at datum 6.04 ft higher. 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 by Lake Corpus Christi (station 08210500, normal storage 272,352 acre-ft).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 27.18 ft Mar 29, 1992, at 1500 hours; minimum daily discharge, 83 ft^3/s Feb 7-9, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,950 ft^3/s, Sep 5 (gage height, 20.81 ft); minimum discharge, 87 ft^3/s, May 12 (gage height, 6.76 ft).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	862	1400	259	223	109	246	1250	115	406	1510	151	160
2	870	1450	274	228	104	174	1990	114	602	1540	138	160
3	890	1570	283	229	98	134	999	113	647	1540	156	175
4	914	1710	277	223	109	136	1190	121	627	1540	178	410
5	924	1710	324	220	115	162	1570	114	367	1550	156	---
6	992	1460	336	220	134	163	1420	108	208	1530	148	---
7	1080	1050	339	222	122	194	723	116	175	1380	146	---
8	1020	638	330	208	104	178	393	139	163	709	140	---
9	1100	478	308	223	112	147	271	142	165	332	132	---
10	1150	422	333	227	114	144	221	143	172	196	133	---
11	1160	447	340	224	121	146	210	138	174	155	166	2130
12	1150	507	339	227	123	151	203	97	173	136	160	934
13	1020	562	284	227	122	151	179	113	172	126	177	435
14	803	768	231	231	125	144	185	121	172	132	179	261
15	680	1100	218	206	133	138	180	124	167	147	168	206
16	514	1330	226	207	133	136	163	132	147	165	178	167
17	376	1630	225	226	124	122	174	134	132	168	200	164
18	---	1540	225	228	128	131	167	120	134	155	216	151
19	---	1530	225	227	129	152	157	148	161	151	219	143
20	---	1100	225	210	126	177	157	151	274	144	221	138
21	---	828	221	227	119	224	181	146	762	154	194	155
22	---	752	209	228	120	238	177	136	388	153	198	143
23	1840	747	222	250	129	248	162	139	208	134	435	127
24	1810	711	222	210	128	259	154	146	164	127	2130	118
25	1830	772	224	203	127	277	142	148	154	117	1810	113
26	1580	770	224	196	212	286	136	169	168	116	714	117
27	948	600	224	154	238	292	304	190	233	108	308	116
28	785	343	220	158	243	533	173	239	391	124	194	108
29	945	287	204	143	---	468	115	272	926	126	177	156
30	1130	271	218	129	---	317	115	291	1380	143	192	670
31	1330	---	220	115	---	344	---	305	---	150	191	---
TOTAL	---	28483	8009	6449	3701	6612	13461	4684	10012	14758	9905	---
MEAN	---	949	258	208	132	213	449	151	334	476	320	---
MAX	---	1710	340	250	243	533	1990	305	1380	1550	2130	---
MIN	---	271	204	115	98	122	115	97	132	108	132	---
AC-FT	---	56500	15890	12790	7340	13110	26700	9290	19860	29270	19650	---

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08211500 NUECES RIVER AT CALALLEN, TX

LOCATION.--Lat 27°52'34", long 97°37'32", Nueces County, Hydrologic Unit 12110111, at the Cunningham pumping station in Corpus Christi, 0.4 mi upstream from Calallen Dam, 0.5 mi northwest of Calallen, about 1.4 mi upstream from bridge on Interstate Highway 37, about 1.5 mi upstream from Missouri-Pacific Railroad bridge, and about 8 mi upstream from Nueces Bay.

DRAINAGE AREA.--16,920 mi^2.

PERIOD OF RECORD.--Oct 1983 to Sep 1989 (maximum annual gage height and discharge). Oct 1989 to current year (daily mean discharges when instantaneous maximum discharge is less than 2,570 ft^3/s).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 0.84 ft above sea level. From Aug 12, 1915, to Mar 31, 1919, and Apr 1, 1920, to Jul 31, 1950, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records poor. Since installation of gage in water year 1990, at least 10% of contributing drainage area has been regulated by Lake Corpus Christi (station 08210500, normal storage 272,352 acre-ft). There are numerous diversions above station for agricultural, municipal, and industrial supply. The cities of Corpus Christi, San Patricio, Robstown, and the Nueces River Water Control and Improvement District No. 3 have a combined withdrawal capacity of 205,500 gallons/minute.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,780 ft^3/s Jun 11, 1987 (gage height, 9.25 ft), from extension of rating above 2,500 ft^3/s; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,570 ft^3/s, Oct 23, Sep 8, 11 (gage height, 7.50 ft); minimum discharge, 0.00 ft^3/s, Feb 3-6, 8-26, Mar 3-7, 9-13, 15-20, Apr 16-17, 20-22, 26, 30, May 3-19, 27, Jun 9, 14, 17-19, Jul 13-17, 25-31, Aug 1-5, 9-13, 16, 21, Sep 24-28 (gage height, 4.33 ft).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	812	1200	163	123	11	102	756	5.8	207	1190	.00	26
2	842	1260	164	174	8.2	59	1440	3.1	448	1210	.00	15
3	839	1280	211	177	1.1	.62	1090	1.3	503	1250	.00	14
4	874	1370	214	130	.00	.00	961	.00	513	1310	.00	105
5	892	1470	237	90	.00	.00	1270	.00	351	1330	20	1120
6	970	1400	290	108	.00	.00	1310	.00	73	1290	11	1770
7	1060	1130	274	97	11	20	808	.00	16	1280	23	2210
8	1010	685	277	82	.25	24	371	.00	9.8	847	6.2	---
9	1030	429	235	144	.00	4.9	169	.00	2.5	340	2.7	---
10	1100	391	258	120	.00	.00	112	.00	14	94	.00	---
11	1120	382	308	94	.00	.00	87	11	19	20	.00	---
12	1130	414	311	115	.00	.41	44	.00	9.5	25	.00	1490
13	1050	509	251	119	.00	19	41	.00	2.6	4.9	2.3	574
14	804	696	155	151	.00	19	58	.00	8.5	.00	33	261
15	647	1020	122	116	.00	3.0	40	.00	28	.00	26	183
16	471	1140	136	104	.00	3.4	2.2	.00	26	.00	7.3	84
17	322	1360	97	146	.00	.00	28	.00	3.0	.00	22	42
18	772	1390	119	153	.00	.00	37	.00	.00	22	12	48
19	---	1360	128	127	.02	.00	17	.09	20	15	11	24
20	---	1170	105	115	4.8	5.1	.88	40	92	6.4	29	7.7
21	---	836	119	126	.00	57	.00	33	582	24	16	19
22	---	737	126	144	.00	75	40	17	397	16	28	22
23	---	690	96	170	.00	91	23	7.0	105	23	315	11
24	1710	630	143	119	.00	94	17	7.9	32	17	1220	1.8
25	1630	727	143	116	.00	98	31	25	24	3.6	1640	.00
26	1530	704	126	102	15	119	17	16	17	2.0	945	7.9
27	1080	586	129	68	93	178	98	.99	49	.00	392	5.9
28	758	321	150	40	82	413	169	49	181	.00	152	.32
29	858	235	112	26	---	473	30	112	642	.00	46	28
30	942	223	123	28	---	202	8.4	145	1030	.00	39	556
31	1080	---	99	22	---	219	---	129	---	.00	35	---
TOTAL	---	25745	5421	3446	226.37	2279.43	9075.48	603.18	5404.90	10319.90	5033.50	---
MEAN	---	858	175	111	8.08	73.5	303	19.5	180	333	162	---
MAX	---	1470	311	177	93	473	1440	145	1030	1330	1640	---
MIN	---	223	96	22	.00	.00	.00	.00	.00	.00	.00	---
AC-FT	---	51070	10750	6840	449	4520	18000	1200	10720	20470	9980	---

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08211503 RINCON BAYOU CHANNEL NEAR CALALLEN, TX

LOCATION.--Lat 27°53'48", long 97°37'31", San Patricio County, Hydrologic Unit 12110111, on the left bank, 800 ft downstream of the Nueces River, about 1400 ft downstream from bridge on Interstate Highway 37, and 2.8 mi NNE of Calallen.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--May 1996 to current year.

GAGE.--Water-stage recorder and acoustic velocity meter. Datum of gage is sea level. Satelilite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Flow in channel is bidirectional and determined by Nueces Bay tides and discharge at Nueces River at Calallen (station 08211500), 1.2 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 300 ft^3/s Oct 19, 1998 (gage height 7.36 ft); no flow many days.

EXTREMES FOR 1996 WATER YEAR.--Maximum discharge, 21 ft^3/s Aug 24 (gage height 2.58 ft); no flow many days.

EXTREMES FOR 1997 WATER YEAR.--Maximum discharge, 149 ft^3/s Jun 26 (gage height 5.48 ft); no flow many days.

EXTREMES FOR 1998 WATER YEAR.--Maximum discharge, 151 ft^3/s Oct 13 (gage height 5.71 ft); no flow many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 300 ft 3/s Oct 19 (gage height 7.36 ft); no flow many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	4.7	.04	-.37	.00
2	---	---	---	---	---	---	---	---	-2.3	.11	-.04	.00
3	---	---	---	---	---	---	---	---	-.36	.10	-.29	.03
4	---	---	---	---	---	---	---	---	.33	.04	-.55	-.04
5	---	---	---	---	---	---	---	---	-.18	.04	-.45	.06
6	---	---	---	---	---	---	---	---	.41	-.01	-.64	.24
7	---	---	---	---	---	---	---	---	.03	.02	.58	.29
8	---	---	---	---	---	---	---	---	.00	.01	.03	.00
9	---	---	---	---	---	---	---	---	.00	.05	-.10	.39
10	---	---	---	---	---	---	---	---	.00	.02	.03	.00
11	---	---	---	---	---	---	---	---	-.05	.14	-.10	.00
12	---	---	---	---	---	---	---	---	.01	.03	.00	.00
13	---	---	---	---	---	---	---	---	.11	.02	-.30	.00
14	---	---	---	---	---	---	---	---	-.21	.12	.13	.51
15	---	---	---	---	---	---	---	---	.09	.13	.00	-.05
16	---	---	---	---	---	---	---	-.20	-.01	-.06	.30	.00
17	---	---	---	---	---	---	---	.49	-.04	-.10	.24	.00
18	---	---	---	---	---	---	---	.15	.05	.30	.07	.22
19	---	---	---	---	---	---	---	.42	.03	-.29	.01	.13
20	---	---	---	---	---	---	---	-.07	.00	-.60	-.48	-.27
21	---	---	---	---	---	---	---	-.67	-.04	-.28	.84	.02
22	---	---	---	---	---	---	---	.82	-.31	.04	2.0	1.1
23	---	---	---	---	---	---	---	.49	-.28	.00	4.5	1.0
24	---	---	---	---	---	---	---	-.08	-.12	.00	2.5	1.4
25	---	---	---	---	---	---	---	.69	.05	.00	.77	.09
26	---	---	---	---	---	---	---	1.7	.42	.02	-.59	2.0
27	---	---	---	---	---	---	---	.20	.15	-.10	.56	-.11
28	---	---	---	---	---	---	---	-1.6	.07	-.16	1.2	.00
29	---	---	---	---	---	---	---	-.38	.04	.07	.09	.18
30	---	---	---	---	---	---	---	2.3	.07	1.2	.11	.77
31	---	---	---	---	---	---	---	3.7	---	-.82	.92	---
TOTAL	---	---	---	---	---	---	---	---	2.66	0.08	10.97	7.96
MEAN	---	---	---	---	---	---	---	---	.089	.003	.35	.27
MAX	---	---	---	---	---	---	---	---	4.7	1.2	4.5	2.0
MIN	---	---	---	---	---	---	---	---	-2.3	-.82	-.64	-.27
AC-FT	---	---	---	---	---	---	---	---	5.3	.2	22	16

08211503 RINCON BAYOU CHANNEL NEAR CALALLEN, TX--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.85	-3.7	.50	.00	.00	2.2	1.5	1.1	.48	-1.0	.03	-.98
2	.53	-.77	.00	.00	.00	-.32	3.0	-1.0	.97	6.5	.02	.12
3	5.6	-2.0	.17	.10	.00	-.38	1.0	-1.5	-.28	7.2	.11	.04
4	13	-2.3	-.06	-.01	.11	.65	-3.4	.78	-.05	4.1	.04	.12
5	34	.37	-.66	.12	-.28	-.45	-4.8	3.2	-.08	6.4	.13	.12
6	37	4.3	.00	-.48	.75	.35	-3.8	.65	-.44	12	-.02	-.04
7	32	.09	.00	.13	.83	.36	2.0	1.3	-.93	10	-.02	-.03
8	13	-.02	.00	-.13	.15	2.7	1.9	1.4	-.72	11	.00	.02
9	-4.8	.00	-.04	.64	.04	-.74	5.4	-.86	-.95	10	-.01	-.03
10	-12	.00	-.22	.00	-.13	-.37	4.9	2.0	-.05	15	-.02	.30
11	-9.6	-.09	.00	.09	.15	.71	-2.7	2.6	.38	24	.04	-.39
12	-7.7	-.98	.00	.93	-.18	-1.2	-7.8	-.02	.52	42	.12	1.9
13	-6.9	-1.1	.00	-.01	.10	1.2	-3.4	.07	.04	72	.05	1.7
14	-1.7	-1.4	.00	.32	-.03	-.80	-2.0	-.43	-.79	96	-.08	.45
15	5.5	6.9	-.13	-.37	.00	.42	-.05	.30	-1.3	99	1.2	1.1
16	1.8	18	.00	.03	.00	3.9	.30	.09	-1.2	99	1.2	.51
17	-2.4	10	.00	.00	.00	7.4	.01	1.8	.40	62	.08	-.44
18	-4.0	-1.9	.00	.00	.22	-3.0	.45	.86	-.68	-46	.18	-.85
19	2.7	-1.4	.00	.00	.44	-1.3	.18	1.1	-.13	-69	.25	-.54
20	12	1.2	.00	.00	.84	-.02	-.36	-.23	-.63	-38	-.53	1.1
21	4.5	-5.6	.00	.00	.00	.00	.18	-.40	.40	-17	-.08	2.4
22	-7.8	-3.4	.05	.00	.00	.00	.00	1.4	9.7	-6.8	.00	1.4
23	-4.0	5.4	-.48	.00	1.0	.00	-.09	-.44	3.7	-.39	-.11	-2.9
24	-.65	4.0	-.05	.00	4.1	.10	2.4	-.35	23	-.56	.03	-1.4
25	5.1	.78	.13	.00	-.54	-.66	5.0	.35	50	-.55	1.2	-.01
26	13	.00	.27	.30	-.04	-.15	-2.4	-.25	104	-.23	-.95	-.17
27	9.3	.26	.31	-.44	-.72	-.06	-.30	.05	121	.01	.23	-.20
28	.89	3.0	.00	.03	1.4	-.04	-.06	-.19	56	.06	.25	-.24
29	1.2	2.1	.00	.00	---	.31	-.03	-.88	13	.11	.18	-.08
30	-4.6	1.2	.00	.00	---	-.02	-.24	-.08	2.5	.09	-.48	-.17
31	-2.1	---	-.23	.00	---	.55	---	.00	---	.00	-.49	---
TOTAL	123.72	32.94	-0.44	1.25	8.21	11.34	-3.21	12.42	377.86	396.94	2.55	2.81
MEAN	3.99	1.10	-.014	.040	.29	.37	-.11	.40	12.6	12.8	.082	.094
MAX	37	18	.50	.93	4.1	7.4	5.4	3.2	121	99	1.2	2.4
MIN	-12	-5.6	-.66	-.48	-.72	-3.0	-7.8	-1.5	-1.3	-69	-.95	-2.9
AC-FT	245	65	-.9	2.5	16	22	-6.4	25	749	787	5.1	5.6

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	-.10	-.50	.06	.00	-.02	.01	-1.5	-.27	-.27	-.90	.04	1.2
2	.11	.00	-.02	.00	.07	-.01	1.0	.99	-.11	.21	.01	7.1
3	.24	.10	-.21	.00	-.14	-.09	-1.2	-.55	-.01	-1.3	.02	4.0
4	-.46	-.01	.00	-.02	1.1	.00	-.38	-.45	.74	-.08	.29	5.5
5	-.62	.02	.00	.15	-.14	-.22	.48	-.20	-.98	-.54	.03	16
6	-.58	-.07	.00	-.27	-.44	.09	1.5	-.09	-.40	-1.1	-.12	9.8
7	.50	-.02	-.09	.00	.00	.27	-.72	-.17	5.5	-.48	.03	7.8
8	7.6	.00	.02	.00	.00	-.60	-.87	3.9	7.8	-.54	.83	26
9	30	.32	.00	.00	.06	.00	-.12	-1.1	-.73	-.09	.07	35
10	32	-.29	.00	.00	-.14	.00	-.04	-.24	.54	-.31	-.05	47
11	-19	-.17	.00	.00	.00	.00	-.12	.27	-2.1	-.07	-.10	6.8
12	16	-.22	.00	.00	.00	.22	7.3	2.1	-2.1	.00	-.08	15
13	68	-.59	.00	.00	.05	.28	-.88	1.8	-1.9	.00	.02	37
14	114	-.12	.00	.00	1.6	-.96	-.99	4.2	-.92	.00	-.43	59
15	99	-.30	.00	.00	8.5	2.1	.73	-.69	-.30	-.03	-.02	-12
16	-32	.03	.00	.00	3.1	-.58	-.75	-.38	-.23	.00	-.10	30
17	-66	-.01	.00	.00	-.47	-1.5	2.8	-1.4	-.72	.00	-.65	42
18	-37	-.14	.00	.00	-.40	-.74	.42	-.71	-.49	.00	-.11	6.4
19	-25	-.12	.00	.00	-.01	-.71	.18	-.54	-.77	.02	-.01	9.3
20	-18	-.06	.00	---	.11	-.08	-.31	-.50	-.98	-.10	.50	-5.7
21	-14	-.04	.00	---	-1.8	.00	-.55	-.19	-.52	.08	1.9	-20
22	-11	.05	.12	---	.30	.00	-.18	-.51	-.98	.04	7.7	-17
23	-6.7	.00	-.17	---	-.48	.09	.00	-.45	-.57	.21	7.0	-12
24	-3.8	.05	.00	---	.32	-.09	-.01	-.53	.01	-.01	.24	-3.7
25	-1.5	-.09	.53	---	1.7	-.22	.08	-.21	-.15	-.05	-4.1	6.1
26	-.30	-.13	-.58	---	-.19	2.2	-.40	.83	.14	.00	-2.1	10
27	.00	.34	.00	---	-.08	2.1	-.37	-.65	1.3	-.04	-1.4	3.9
28	.00	-.15	.00	---	-.06	-1.9	-.04	-.20	.79	-.01	-2.2	.62
29	-.20	-.41	.00	---	---	5.8	.93	.43	-.85	-.02	-.25	5.2
30	.20	-.05	.00	---	---	12	2.4	-.46	-1.2	.00	-.16	3.9
31	-.10	---	.00	---	---	-8.9	---	-.52	---	-.08	-.30	---
TOTAL	131.29	-2.58	-0.34	---	12.54	8.56	8.39	3.51	-0.46	-5.19	6.50	324.22
MEAN	4.24	-.086	-.011	---	.45	.28	.28	.11	-.015	-.17	.21	10.8
MAX	114	.34	.53	---	8.5	12	7.3	4.2	7.8	.21	7.7	59
MIN	-66	-.59	-.58	---	-1.8	-8.9	-1.5	-1.4	-2.1	-1.3	-4.1	-20
AC-FT	260	-5.1	-.7	---	25	17	17	7.0	-.9	-10	13	643

08211503 RINCON BAYOU CHANNEL NEAR CALALLEN, TX--Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	14	-.02	-.34	.00	.04	9.9	29	.52	18	-.61	-2.8
2	8.2	11	.00	-.41	-.07	-.26	36	2.3	2.1	13	-.18	-2.8
3	5.0	12	-.45	-.01	-.03	-.20	8.5	-14	2.6	19	.00	-2.4
4	9.0	22	-.27	.00	-.02	1.5	.83	-12	4.5	13	.00	-.02
5	19	17	-.50	.00	-.39	-.28	23	-12	3.8	4.1	-.16	18
6	-4.9	16	-.37	-.01	.25	-1.1	17	-6.4	-3.7	1.3	-.34	29
7	-6.7	-4.9	-.51	.00	-.43	3.7	-12	.20	-4.3	6.7	-.19	40
8	-1.6	-16	.00	.00	-.21	11	-13	.65	-1.2	-14	-.36	81
9	9.3	-8.9	.00	.02	-.25	-5.4	-6.0	2.6	.25	-3.6	-.39	106
10	14	-5.8	-.12	.00	.62	-2.1	-4.4	9.8	-.88	-1.0	-.30	177
11	13	-2.3	-.36	.04	-.60	-1.1	-2.5	2.3	-2.1	.09	-.08	131
12	12	-3.2	.00	-.23	.00	1.5	-2.4	-13	-.99	-.31	-.07	-60
13	2.4	-4.2	.00	-.03	.00	-.29	2.1	-12	-1.2	-.10	-.42	-58
14	-6.1	-3.4	.00	.00	.00	-.91	1.5	-3.4	-1.8	.67	-.08	-19
15	3.2	5.0	.00	.00	-.28	.00	-1.4	-5.7	-.32	-.12	.03	-7.9
16	6.0	8.4	.00	.05	-.18	-.94	-.72	2.0	-.30	-.37	-.17	-3.4
17	15	17	.00	-.22	-.04	1.7	.35	-2.5	.25	-.71	-.40	-2.7
18	25	16	-.03	-.14	-.01	-1.6	-.63	-6.4	.20	-.22	-.15	-2.5
19	166	14	.00	-.10	-.31	-1.8	-.50	-5.8	-1.0	-.48	-.04	-1.2
20	253	-5.0	.00	.06	-.20	-.68	-.08	-3.3	-7.1	-.29	-.13	.01
21	274	-7.0	-.30	-.06	-.19	-.52	-.12	-4.8	2.1	-.69	-.12	-.46
22	256	-1.7	.00	-.28	.60	-.07	1.4	-6.6	-12	-.22	14	1.5
23	138	.84	.00	.00	.29	.73	-.21	-3.2	-11	-.26	90	1.7
24	-39	-2.5	.00	.00	-.44	-1.0	-2.4	-.77	-6.5	-.12	-12	.04
25	-4.5	.79	.00	.00	-.09	-.51	-.64	-.93	-6.0	-.33	-7.3	-.82
26	1.3	-.73	.00	-.04	.16	2.8	-3.8	-1.2	-4.8	-.17	-42	-1.1
27	-21	-1.6	.00	-.19	1.4	21	-3.5	-.78	-2.4	-.31	-25	-1.2
28	-18	-.82	.00	.14	-.15	1.9	-2.5	-.33	-2.5	-.24	-15	-.74
29	-5.1	-.38	.00	-.47	---	-7.1	-1.2	-.32	1.1	-2.1	-9.5	-1.3
30	4.2	-.47	.03	.00	---	-5.1	9.4	-.15	11	-.26	-6.2	-2.7
31	19	---	-.21	.00	---	-1.4	---	-.10	---	-.22	-3.4	---
TOTAL	1150.0	85.13	-3.11	-2.22	-0.57	13.51	51.98	-66.83	-41.67	49.74	-20.56	414.21
MEAN	37.1	2.84	-.10	-.072	-.020	.44	1.73	-2.16	-1.39	1.60	-.66	13.8
MAX	274	22	.03	.14	1.4	21	36	29	11	19	90	177
MIN	-39	-16	-.51	-.47	-.60	-7.1	-13	-14	-12	-14	-42	-60
AC-FT	2280	169	-6.2	-4.4	-1.1	27	103	-133	-83	99	-41	822

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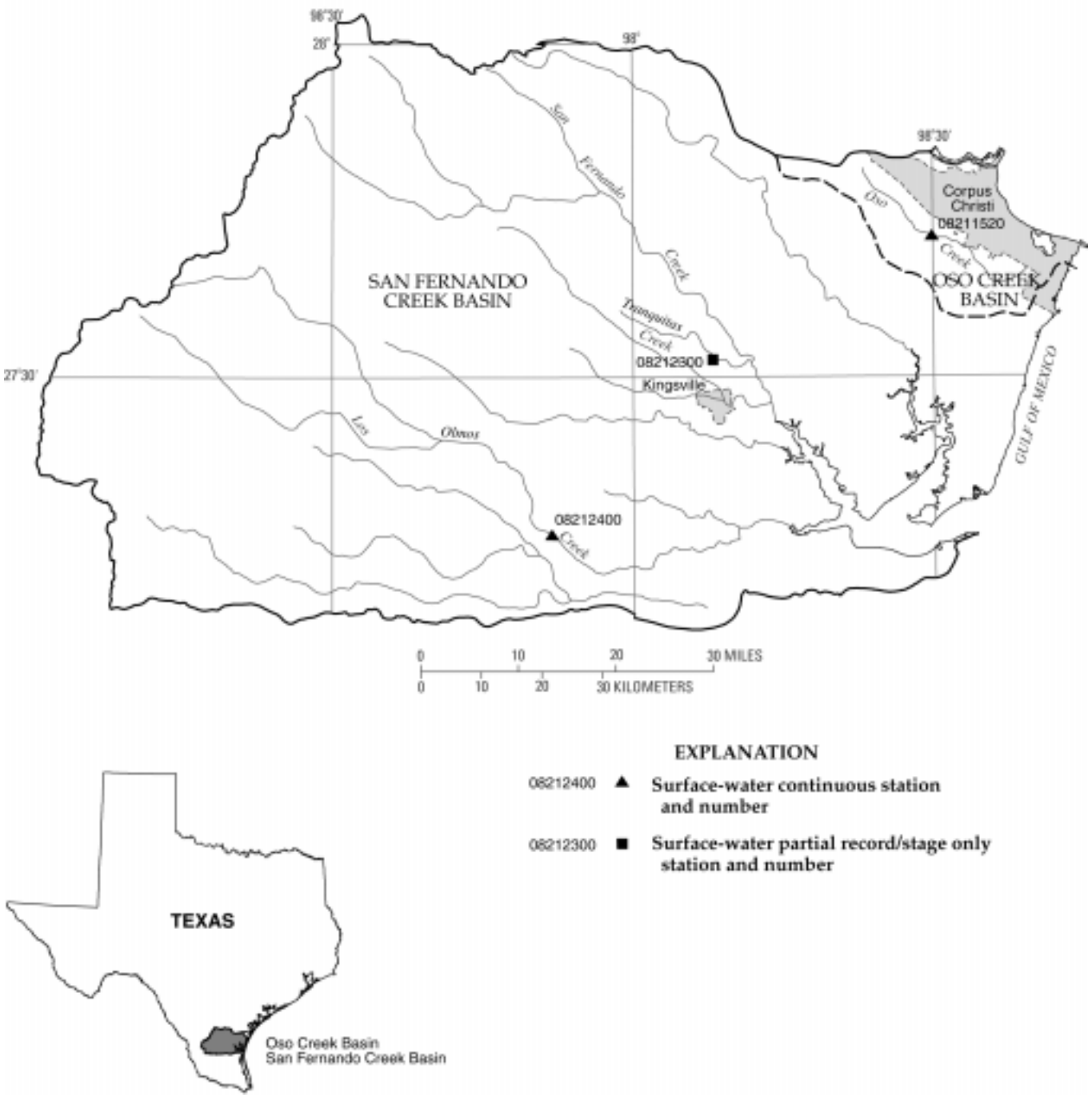


Figure 8.--Map showing location of gaging stations in the Oso Creek and San Fernando Creek Basins

08211520 Oso Creek at Corpus Christi, TX 336
08212300 Tranquitas Creek at Kingsville, TX 397
08212400 Los Olmos Creek near Falfurias, TX 338

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 mi^2.

PERIOD OF RECORD.--Sep 1972 to current year.
Water-quality records.--Chemical data: Jul 1972 to Aug 1988. Biochemical data: Jul 1972 to Aug 1988. Pesticide data: Jul 1972 to Jul 1981.

GAGE.--Water-stage recorder. Datum of gage is 1.91 ft below sea level. 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.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 19	1545	4,210	25.22	Aug 24	0615	2,200	21.94

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

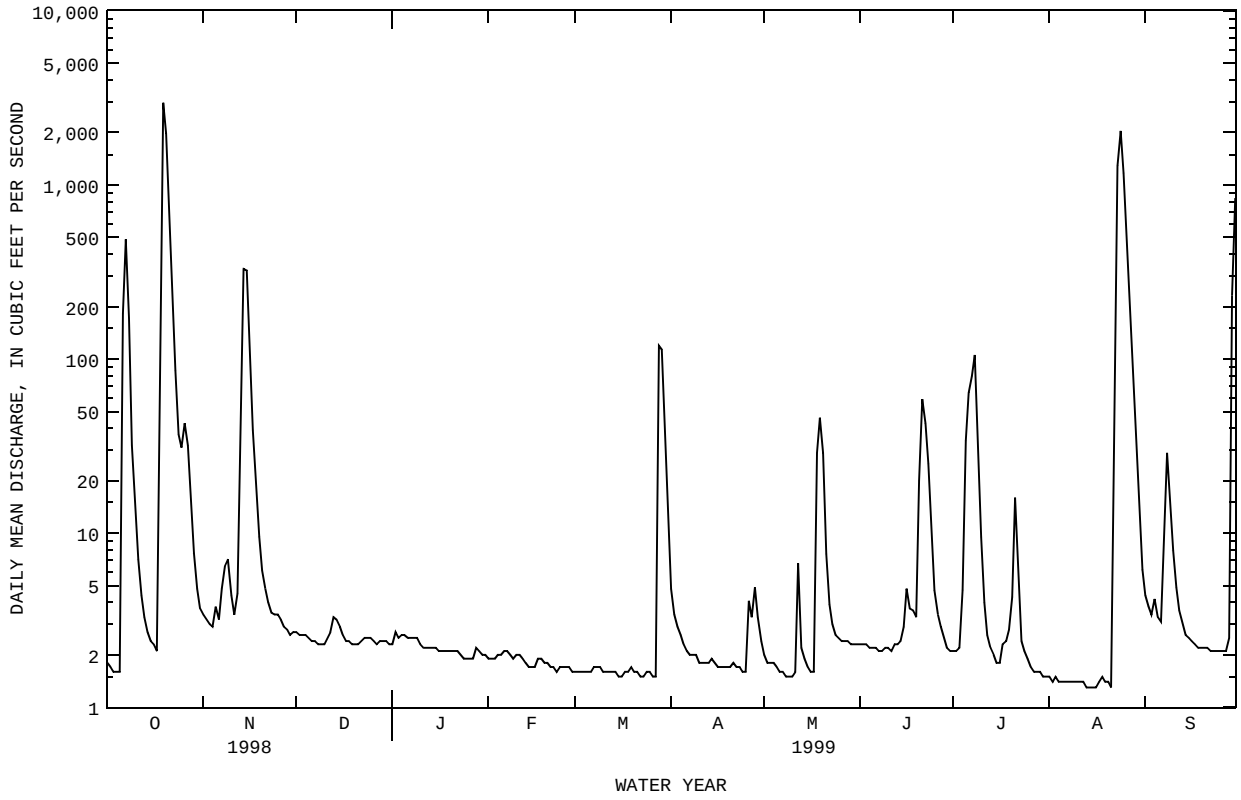
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	3.4	2.7	2.3	1.9	1.6	4.8	2.0	2.3	2.1	1.5	4.4
2	1.7	3.2	2.6	2.7	1.9	1.6	3.4	1.8	2.3	2.1	1.4	3.8
3	1.6	3.0	2.6	2.5	1.9	1.6	2.9	1.8	2.3	2.2	1.5	3.4
4	1.6	2.9	2.6	2.6	2.0	1.6	2.6	1.8	2.2	4.7	1.4	4.2
5	1.6	3.8	2.5	2.6	2.0	1.6	2.3	1.7	2.2	34	1.4	3.3
6	183	3.2	2.4	2.5	2.1	1.6	2.1	1.6	2.2	64	1.4	3.1
7	488	4.8	2.4	2.5	2.1	1.7	2.0	1.6	2.1	80	1.4	7.0
8	172	6.5	2.3	2.5	2.0	1.7	2.0	1.5	2.1	106	1.4	29
9	32	7.1	2.3	2.5	1.9	1.7	2.0	1.5	2.2	40	1.4	15
10	14	4.4	2.3	2.3	2.0	1.6	1.8	1.5	2.2	9.5	1.4	8.0
11	7.1	3.4	2.5	2.2	2.0	1.6	1.8	1.6	2.1	4.0	1.4	4.9
12	4.4	4.5	2.7	2.2	1.9	1.6	1.8	6.7	2.3	2.6	1.4	3.6
13	3.3	52	3.3	2.2	1.8	1.6	1.8	2.2	2.3	2.2	1.3	3.0
14	2.7	330	3.2	2.2	1.7	1.6	1.9	1.9	2.4	2.0	1.3	2.6
15	2.4	323	2.9	2.2	1.7	1.5	1.8	1.7	2.9	1.8	1.3	2.5
16	2.3	107	2.6	2.1	1.7	1.5	1.7	1.6	4.8	1.8	1.3	2.4
17	2.1	39	2.4	2.1	1.9	1.6	1.7	1.6	3.7	2.3	1.4	2.3
18	368	20	2.4	2.1	1.9	1.6	1.7	29	3.6	2.4	1.5	2.2
19	2970	9.6	2.3	2.1	1.8	1.7	1.7	46	3.3	2.8	1.4	2.2
20	1980	6.1	2.3	2.1	1.8	1.6	1.7	29	20	4.3	1.4	2.2
21	807	4.8	2.3	2.1	1.7	1.6	1.8	7.6	59	16	1.3	2.2
22	333	4.0	2.4	2.1	1.7	1.5	1.7	3.9	43	6.3	52	2.1
23	86	3.5	2.5	2.0	1.6	1.5	1.7	3.0	25	2.4	1290	2.1
24	37	3.4	2.5	1.9	1.7	1.6	1.6	2.6	10	2.1	2050	2.1
25	31	3.4	2.5	1.9	1.7	1.6	1.6	2.5	4.7	1.9	1170	2.1
26	43	3.2	2.4	1.9	1.7	1.5	4.1	2.4	3.4	1.7	369	2.1
27	32	2.9	2.3	1.9	1.7	1.5	3.3	2.4	2.9	1.6	117	2.1
28	16	2.8	2.4	2.2	1.6	119	4.9	2.4	2.5	1.6	48	2.5
29	7.7	2.6	2.4	2.1	---	113	3.3	2.3	2.2	1.6	22	231
30	4.8	2.7	2.4	2.0	---	43	2.4	2.3	2.1	1.5	11	841
31	3.7	---	2.3	2.0	---	11	---	2.3	---	1.5	6.2	---
TOTAL	7640.8	970.2	77.7	68.6	51.4	329.0	69.9	171.8	224.3	409.0	5164.4	1198.4
MEAN	246	32.3	2.51	2.21	1.84	10.6	2.33	5.54	7.48	13.2	167	39.9
MAX	2970	330	3.3	2.7	2.1	119	4.9	46	59	106	2050	841
MIN	1.6	2.6	2.3	1.9	1.6	1.5	1.6	1.5	2.1	1.5	1.3	2.1
AC-FT	15160	1920	154	136	102	653	139	341	445	811	10240	2380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1999, BY WATER YEAR (WY)

MEAN	73.5	20.4	14.5	12.3	20.4	17.0	21.0	31.5	53.4	23.4	28.3	44.9
MAX	477	119	181	130	238	128	176	185	379	339	454	228
(WY)	1998	1982	1992	1984	1982	1995	1997	1993	1993	1976	1980	1979
MIN	1.26	1.40	1.27	1.53	1.29	.89	1.05	1.34	1.09	.86	1.07	1.91
(WY)	1991	1994	1991	1993	1975	1988	1975	1998	1998	1996	1997	1986

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1972 - 1999	
ANNUAL TOTAL	10511.81		16375.5			
ANNUAL MEAN	28.8		44.9		30.1	
HIGHEST ANNUAL MEAN					54.3	1992
LOWEST ANNUAL MEAN					3.03	1989
HIGHEST DAILY MEAN	2970	Oct 19	2970	Oct 19	6160	Aug 11 1980
LOWEST DAILY MEAN	.94	Jul 23	1.3	Aug 13	.27	Mar 12 1988
ANNUAL SEVEN-DAY MINIMUM	.98	Jul 20	1.3	Aug 10	.35	Mar 9 1988
INSTANTANEOUS PEAK FLOW			4210	Oct 19	12100	Aug 10 1980
INSTANTANEOUS PEAK STAGE			25.22	Oct 19	29.37	Aug 10 1980
ANNUAL RUNOFF (AC-FT)	20850		32480		21790	
10 PERCENT EXCEEDS	18		33		20	
50 PERCENT EXCEEDS	2.1		2.3		2.3	
90 PERCENT EXCEEDS	1.0		1.6		1.2	

08211520 OSO CREEK AT CORPUS CHRISTI, TX--Continued



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 mi^2, of which 4.5 mi^2 probably is noncontributing.

PERIOD OF RECORD.--January 1967 to September 1983, Mar 1999 to Sep 1999.

GAGE.--Water-stage recorder. Datum of gage is 116.58 ft above mean sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1929, 15.0 ft Sep 13, 1951, from information by Texas Department of Transportation.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 24	1515	787	9.35	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	.00	.00	.00	.00	.00	.11
2	---	---	---	---	---	---	.00	.00	.00	.00	.00	.05
3	---	---	---	---	---	---	.00	.00	.00	.00	.00	.02
4	---	---	---	---	---	---	.00	.00	.00	.00	.00	.01
5	---	---	---	---	---	---	.00	.00	.00	.00	.00	.01
6	---	---	---	---	---	---	.00	.00	.00	.00	.00	.42
7	---	---	---	---	---	---	.00	.00	.00	.00	.00	.68
8	---	---	---	---	---	---	.00	.00	.00	.00	.00	.75
9	---	---	---	---	---	---	.00	.00	.00	.00	.00	.62
10	---	---	---	---	---	---	.00	.00	.00	.00	.00	.28
11	---	---	---	---	---	---	.00	.00	.00	.00	.00	.10
12	---	---	---	---	---	---	.00	.00	.00	.00	.00	.06
13	---	---	---	---	---	---	.00	.00	.00	.00	.00	.03
14	---	---	---	---	---	---	.00	.00	.00	.00	.00	.02
15	---	---	---	---	---	---	.00	.00	.00	.00	.00	.01
16	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
17	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
18	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
19	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
20	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
21	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
22	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
23	---	---	---	---	---	---	.00	.00	.00	.00	242	.00
24	---	---	---	---	---	---	.00	.00	.00	.00	734	.00
25	---	---	---	---	---	---	.00	.00	.00	.00	531	.00
26	---	---	---	---	---	---	.00	.00	.00	.00	139	.00
27	---	---	---	---	---	---	.00	.00	.00	.00	21	.00
28	---	---	---	---	---	---	.00	.00	.00	.00	9.7	.00
29	---	---	---	---	---	---	.00	.00	.00	.00	4.5	.01
30	---	---	---	---	---	---	.00	.00	.00	.00	1.6	.00
31	---	---	---	---	---	.00	---	.00	---	.00	.46	---
TOTAL	---	---	---	---	---	---	0.00	0.00	0.00	0.00	1683.26	3.18
MEAN	---	---	---	---	---	---	.000	.000	.000	.000	54.3	.11
MAX	---	---	---	---	---	---	.00	.00	.00	.00	734	.75
MIN	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
AC-FT	---	---	---	---	---	---	.00	.00	.00	.00	3340	6.3

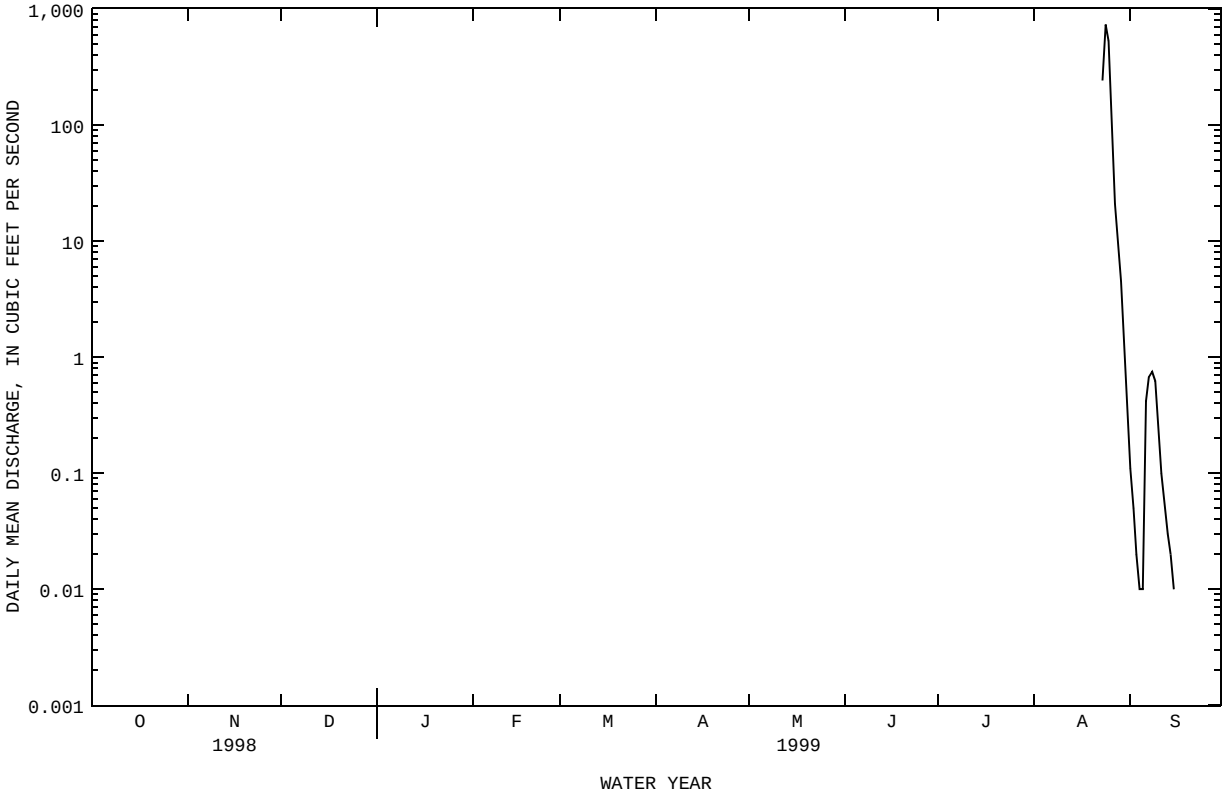
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1999h, BY WATER YEAR (WY)

MEAN	1.77	.43	.14	.14	.14	3.91	.36	10.6	5.82	4.12	9.00	54.3
MAX	8.95	4.89	.75	.69	.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	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1973	1971	1971	1972	1973	1971	1971	1971	1980	1972	1972	1972

SUMMARY STATISTICS	WATER YEARS 1967 - 1999h	
ANNUAL MEAN	5.49	
HIGHEST ANNUAL MEAN	34.1	1971
LOWEST ANNUAL MEAN	.000	1983
HIGHEST DAILY MEAN	3790	Sep 14 1971
LOWEST DAILY MEAN	.00	Aug 10 1970
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 4 1970
INSTANTANEOUS PEAK FLOW	5300	Sep 13 1971
INSTANTANEOUS PEAK STAGE	12.66	Sep 13 1971
ANNUAL RUNOFF (AC-FT)	3980	
10 PERCENT EXCEEDS	.68	
50 PERCENT EXCEEDS	.00	
90 PERCENT EXCEEDS	.00	

h See PERIOD OF RECORD paragraph.

08212400 LOS OLMOS CREEK NEAR FALFURRIAS, TX--Continued



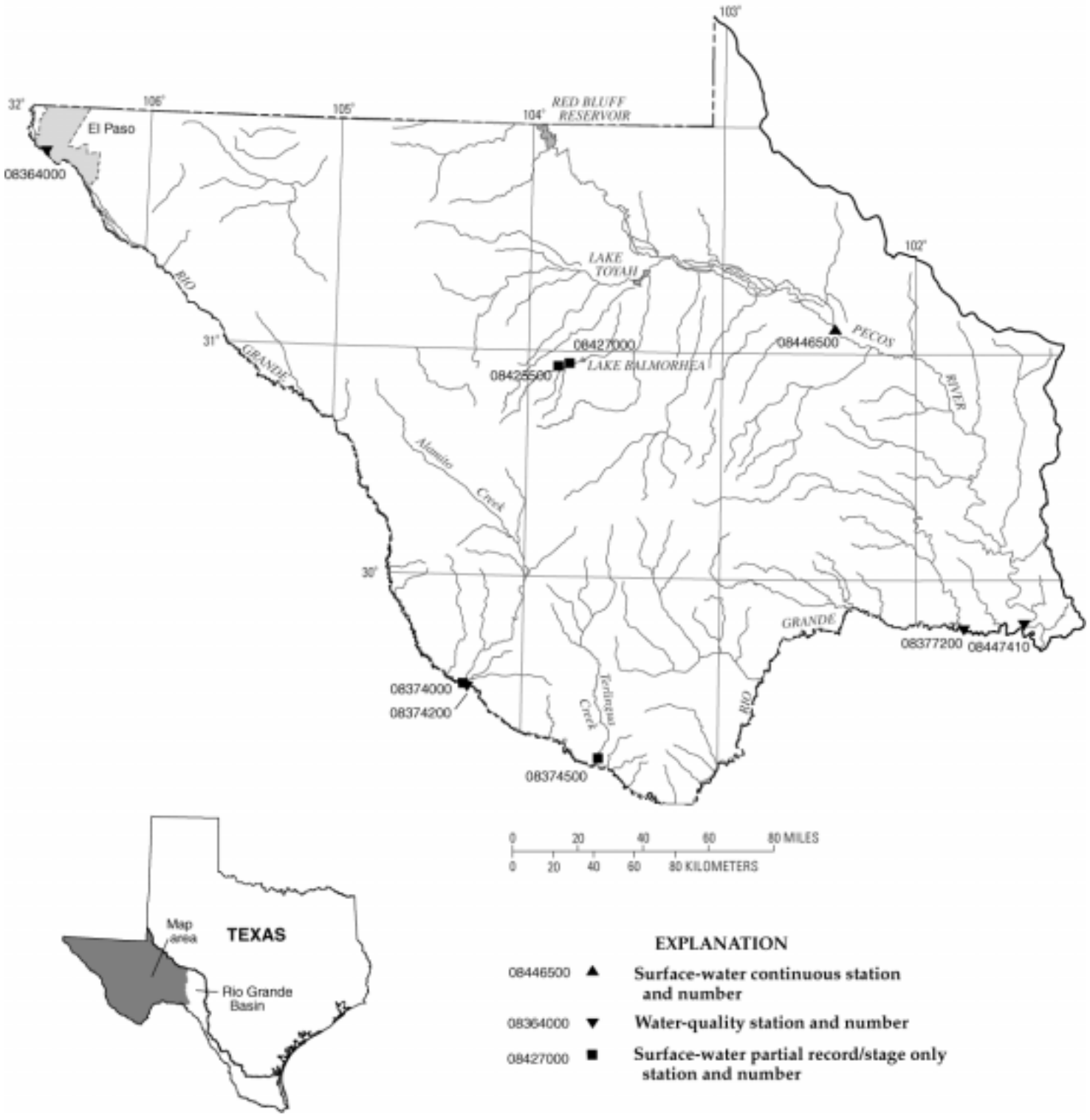


Figure 9.--Map showing location of gaging stations in the first section of the Rio Grande Basin

08364000 Rio Grande at El Paso, TX 342
08374000 Alamito Creek near Presidio, TX 398
08374200 Rio Grande below Rio Conchos near Presidio, TX 348
08374500 Terlingua Creek near Terlingua, TX 398
08377200 Rio Grande at Foster Ranch near Langtry, TX 352
08425500 Phantom Lake Springs near Toyahvale, TX 396
08427000 Giffin Springs at Toyahvale, TX 396
08446500 Pecos River near Girvin, TX 356
08447410 Pecos River near Langtry, Tx 358

08364000 RIO GRANDE AT EL PASO, TX
(National stream-quality accounting network)
(National water-quality assessment program)

LOCATION.--Lat 31°48'10", long 106°32'25", El Paso County, Hydrologic Unit 13030102, at gaging station on the downstream side of the Courchesne Bridge, 5.6 mi upstream from the Santa Fe Street-Juarez Avenue bridge between El Paso, and Cd. Juarez, Chihuahua, at mile 1,249, and 1.7 mi upstream from the American Dam.

DRAINAGE AREA.--29,267 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: Feb 1930 to current year.

REMARKS.--Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of specific conductance and discharge for water year 1999 are given in International Boundary and Water Commission Water Bulletins Nos. 68 and 69. Since 1995, quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLVED FLD. AS CACO3 (MG/L) (00904)
OCT												
21...	0845	1028	10	364	1500	8.3	13.5	46	10.8	118	340	130
NOV												
19...	0900	1028	10	185	1800	8.4	13.5	7.1	9.4	104	370	130
DEC												
22...	1400	84823	10	133	--	8.2	6.5	--	--	--	400	--
JAN												
13...	0915	1028	10	92	1990	8.3	6.5	8.4	9.6	90	420	170
FEB												
26...	1315	84823	--	--	1230	8.0	26.0	--	--	--	240	75
MAR												
24...	1030	1028	10	858	882	8.2	15.5	65	8.4	97	190	31
APR												
27...	0900	1028	10	800	1000	8.3	17.5	75	7.7	93	230	54
MAY												
27...	0840	1028	10	855	976	8.2	20.0	340	7.4	94	210	43
JUN												
22...	0910	1028	10	1130	783	8.1	24.0	1300	5.6	77	180	31
JUL												
27...	0840	1028	10	915	977	8.3	25.5	180	7.2	102	220	46
AUG												
24...	0900	1028	10	1200	874	8.3	24.5	90	6.4	89	190	28
SEP												
14...	0730	1028	10	826	1010	8.4	21.5	87	6.6	86	230	50

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (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)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT												
21...	100	23	189	4	54	9.5	0	260	218	--	320	150
NOV												
19...	100	26	249	6	59	11	0	290	238	--	400	220
DEC												
22...	120	27	262	6	58	12	--	--	--	--	420	220
JAN												
13...	120	29	284	6	59	11	0	305	250	--	430	240
FEB												
26...	70	16	147	4	56	8.4	--	--	--	170	200	140
MAR												
24...	55	13	98	3	52	6.4	0	195	160	--	160	77
APR												
27...	65	15	117	3	52	7.5	0	208	171	--	190	97
MAY												
27...	60	14	108	3	52	6.8	0	205	168	--	190	85
JUN												
22...	51	12	88	3	51	6.7	0	176	145	--	140	61
JUL												
27...	65	13	110	3	51	7.4	0	209	171	--	190	84
AUG												
24...	56	12	98	3	52	6.7	7	183	162	--	170	82
SEP												
14...	68	15	113	3	50	7.6	1	222	182	--	200	95

08364000 RIO GRANDE AT EL PASO, TX--Continued
(National stream-quality accounting network)
(National water-quality assessment program)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	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)
OCT												
21...	.64	20	978	949	1.21	.011	1.22	.038	2.1	.81	.20	.24
NOV												
19...	.72	21	1250	1180	.963	.019	.982	.052	1.4	.34	.21	.26
DEC												
22...	.75	24	--	--	--	--	--	--	--	--	--	--
JAN												
13...	.76	23	1330	1290	.999	.044	1.04	.090	1.6	.42	.27	.36
FEB												
26...	.72	13	--	698	--	--	--	--	--	--	--	--
MAR												
24...	.71	12	547	521	--	<.010	.300	.048	.96	.62	.21	.25
APR												
27...	.70	13	--	615	--	<.010	.367	.054	1.1	.65	.27	.32
MAY												
27...	.67	13	605	580	.406	.011	.417	.080	1.1	.59	.22	.30
JUN												
22...	.68	14	470	462	.583	.015	.598	.046	4.0	3.4	.25	.29
JUL												
27...	.65	15	615	589	--	<.010	.323	<.020	1.2	--	--	.18
AUG												
24...	.60	16	547	540	--	<.010	.449	.031	1.3	.80	.31	.34
SEP												
14...	.67	17	654	630	--	<.010	.581	.023	1.4	.77	.22	.24

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)	PHOS-PHORUS ORTHO, 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 SUS-PENDED 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)
OCT												
21...	.85	.326	.061	.060	.18	3.7	3.3	139	141	92	--	--
NOV												
19...	.39	.096	.074	.067	.21	3.3	.80	53	106	44	1.1	<1.0
DEC												
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	.51	.141	.098	.097	.30	3.8	.70	13	54	57	1.9	<1.0
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	.67	.153	E.030	.068	.21	3.1	2.3	730	315	52	1.7	<1.0
APR												
27...	.70	.200	E.033	.039	.12	3.3	1.4	715	331	--	2.0	<1.0
MAY												
27...	.67	.624	E.035	.035	.11	3.0	7.5	2040	883	91	2.9	<1.0
JUN												
22...	3.4	3.08	E.032	.044	.13	5.3	>10	10600	3450	95	4.7	<1.0
JUL												
27...	.92	.276	E.033	.036	.11	3.0	3.7	--	--	--	4.1	<1.0
AUG												
24...	.83	.372	.062	.059	.18	3.8	3.2	2350	724	69	2.8	<1.0
SEP												
14...	.80	.332	.058	.065	.20	3.5	4.0	1290	579	68	3.1	<1.0

08364000 RIO GRANDE AT EL PASO, TX--Continued
(National stream-quality accounting network)
(National water-quality assessment program)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	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)	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)
OCT												
21...	4	--	--	257	--	--	--	--	<10	--	140	--
NOV												
19...	4	94	<1.0	331	<1.0	<1.0	<1.0	<1.0	<10	<1.0	180	21
DEC												
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	5	86	<1.0	357	<1.0	1.2	<1.0	1.5	E15	<1.0	190	95
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	3	62	<1.0	160	<1.0	<1.0	<1.0	1.0	<10	<1.0	83	5.7
APR												
27...	4	69	<1.0	180	<1.0	<1.0	<1.0	1.3	<10	<1.0	100	2.8
MAY												
27...	4	70	<1.0	172	<1.0	<1.0	<1.0	1.3	<10	<1.0	95	1.0
JUN												
22...	4	65	<1.0	142	<1.0	<1.0	<1.0	1.7	<10	<1.0	75	<1.0
JUL												
27...	5	81	<1.0	176	<1.0	<1.0	<1.0	1.5	<10	<1.0	94	<1.0
AUG												
24...	4	76	<1.0	152	<1.0	<1.0	<1.0	1.4	<10	<1.0	74	1.1
SEP												
14...	4	92	<1.0	177	<1.0	<1.0	<1.0	1.6	<10	<1.0	98	<1.0

DATE	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)	2,6-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)
OCT												
21...	--	--	<1	--	1280	<10	--	--	--	--	--	--
NOV												
19...	14	1.6	<1	<1.0	1490	<10	2.0	5.1	<.0030	<.0020	<.002	<.0020
DEC												
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	14	1.2	<1	<1.0	1660	<30	1.6	5.7	<.0030	<.0020	<.002	<.0020
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	8.0	1.8	<1	<1.0	715	<10	1.8	3.0	<.0030	<.0020	<.002	<.0020
APR												
27...	8.8	1.1	<1	<1.0	821	<10	1.7	3.5	<.0030	<.0020	<.002	<.0020
MAY												
27...	8.2	1.2	<1	<1.0	798	<10	<1.0	3.4	<.0030	<.0020	<.002	<.0020
JUN												
22...	6.5	1.2	<1	<1.0	660	E5	<1.0	2.7	<.0030	<.0020	<.002	<.0020
JUL												
27...	8.3	2.3	<1	<1.0	826	E10	<1.0	3.5	<.0030	<.0020	<.002	<.0020
AUG												
24...	7.2	1.7	<1	<1.0	740	E8	1.0	3.2	<.0030	<.0020	<.002	<.0020
SEP												
14...	8.7	1.8	<1	<1.0	868	E6	1.4	4.0	--	--	--	--

08364000 RIO GRANDE AT EL PASO, TX--Continued
(National stream-quality accounting network)
(National water-quality assessment program)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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-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)
OCT												
21...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	E.0029	<.0020	<.002
DEC												
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	E.0015	<.0050	<.0040	.0064	<.0020	<.002
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	.0060	E.0024	<.0020	<.002
APR												
27...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	E.0025	<.0020	<.002
MAY												
27...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	.0140	<.0050	.0064	E.0017	<.0020	<.002
JUN												
22...	E.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	E.0034	<.0020	<.002
JUL												
27...	.004	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	.0108	<.0020	<.0020	<.002
AUG												
24...	.006	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	.0416	<.0020	<.0020	<.002
SEP												
14...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	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)
OCT												
21...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.005	<.004	<.0040
DEC												
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.005	<.004	<.0040
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	E.003	<.004	<.0040
APR												
27...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.007	<.004	<.0040
MAY												
27...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.006	<.004	<.0040
JUN												
22...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.004	<.004	<.0040
JUL												
27...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.008	<.004	<.0040
AUG												
24...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.006	<.004	<.0040
SEP												
14...	--	--	--	--	--	--	--	--	--	--	--	--

08364000 RIO GRANDE AT EL PASO, TX--Continued
(National stream-quality accounting network)
(National water-quality assessment program)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	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)	PROP-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)
OCT												
21...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
DEC												
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	E.0032	<.0070	<.0040	<.0130	<.0030
APR												
27...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	E.0032	<.0070	<.0040	<.0130	<.0030
MAY												
27...	<.0030	E.0014	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUN												
22...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	E.0024	<.0070	<.0040	<.0130	<.0030
JUL												
27...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	E.0073	<.0070	<.0040	<.0130	<.0030
AUG												
24...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	E.0075	<.0070	<.0040	<.0130	<.0030
SEP												
14...	--	--	--	--	--	--	--	--	--	--	--	--

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-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
OCT											
21...	--	--	--	--	--	--	--	--	--	--	--
NOV											
19...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	90.8	105	76.1	877
DEC											
22...	--	--	--	--	--	--	--	--	--	--	--
JAN											
13...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	111	113	96.5	952
FEB											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
24...	E.0037	E.0074	<.0070	<.0130	<.0020	<.0010	<.0020	89.4	101	90.1	892
APR											
27...	<.0050	E.0093	<.0070	<.0130	<.0020	<.0010	<.0020	103	118	98.6	900
MAY											
27...	E.0044	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	107	--	101	884
JUN											
22...	E.0012	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	82.8	--	71.6	819
JUL											
27...	.0065	E.0099	<.0070	<.0130	<.0020	<.0010	<.0020	96.5	--	94.8	757
AUG											
24...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	111	--	104	813
SEP											
14...	--	--	--	--	--	--	--	--	--	--	--

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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 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: April 1999 to Sep 1999.
BIOCHEMICAL DATA: April 1999 to Sep 1999.
PESTICIDE DATA: August 1999 to Sep 1999.
SEDIMENT DATA: April 1999 to Sep 1999.

REMARKS.--Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1999 are given in International Boundary and Water Commission Water Bulletins Nos. 68 and 69. Since 1999, quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
APR												
07...	1130	1053	10	1020	3100	7.9	20.5	120	7.9	97	610	390
AUG												
10...	1150	1053	10	1150	2510	7.9	27.0	150	6.4	90	500	330
31...	0920	1053	10	1170	2210	7.9	25.5	150	5.6	76	530	380
SEP												
21...	0840	1053	10	1070	--	--	23.0	85	--	--	560	390
28...	0930	1053	10	1100	--	--	25.0	91	--	--	500	310

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (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 DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
APR												
07...	180	38	432	8	60	11	0	259	213	750	420	1.6
AUG												
10...	150	29	352	7	60	10	0	206	169	510	380	.95
31...	170	23	278	5	53	9.8	0	179	147	570	270	1.3
SEP												
21...	170	34	395	7	60	10	0	215	176	710	400	1.4
28...	150	31	362	7	61	10	0	234	192	600	380	1.2

DATE	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)
APR												
07...	18	2030	1970	--	--	--	--	--	--	--	--	--
AUG												
10...	17	1570	1560	--	<.010	.320	<.020	1.5	.29	1.2	.334	<.050
31...	19	1510	1440	--	<.010	.331	<.020	.81	.29	.48	.244	<.050
SEP												
21...	23	1900	1850	--	<.010	.124	<.020	.83	.24	.70	.075	<.050
28...	19	1690	1670	.570	.027	.597	<.020	1.4	.30	.84	.177	<.050

DATE	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)
APR												
07...	--	--	--	--	1310	477	95	<2.0	<2.0	5	101	<2.0
AUG												
10...	<.010	--	5.6	3.9	1930	622	100	2.3	<1.0	3	139	<1.0
31...	<.010	--	4.8	.40	1840	582	100	1.5	<1.0	5	181	<1.0
SEP												
21...	<.010	--	4.0	.80	536	185	90	1.1	<1.0	6	142	<1.0
28...	.014	.04	E6.4	1.9	903	305	89	1.5	<1.0	5	111	<1.0

08374200 RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	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)
APR												
07...	542	<2.0	<1.0	<2.0	3.1	<10	<2.0	170	88	12	3.2	1
AUG												
10...	392	<1.0	<2.0	<1.0	3.1	<30	<1.0	150	1.7	11	4.6	<1
31...	359	<1.0	<1.0	<1.0	2.5	<30	<1.0	120	1.0	9.2	5.2	<1
SEP												
21...	502	<1.0	<1.0	<1.0	3.7	<30	<1.0	160	<1.0	11	3.0	1
28...	433	<1.0	<.80	<1.0	3.2	<30	<1.0	150	3.4	12	2.9	E1

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)
APR											
07...	<2.0	2820	<10	<2.4	9.4	--	--	--	--	--	--
AUG											
10...	<1.0	2420	<30	3.2	5.9	<.0030	<.0020	<.002	<.0020	<.001	<.0010
31...	<1.0	2580	9	7.1	6.8	<.0030	<.0020	<.002	<.0020	<.001	<.0010
SEP											
21...	<1.0	2840	11	3.2	8.2	<.0030	<.0020	<.002	<.0020	<.001	<.0010
28...	<1.0	2430	11	6.0	7.7	<.0030	<.0020	<.002	<.0020	<.004	<.0010

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)
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	.0094	<.0020	<.0020	<.002	<.001
31...	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	.0136	<.0020	<.0020	<.002	<.001
SEP											
21...	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	.0109	<.0020	<.0020	<.002	<.001
28...	<.0050	<.0020	<.0030	<.0030	E.0035	<.0050	.0098	<.0020	<.0020	E.003	<.001

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	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)
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	E.004	<.004	<.0040
31...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
SEP											
21...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.006	<.004	<.0040
28...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.006	<.004	<.0040

DATE	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)	PROP-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)
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130
31...	<.0030	<.0060	<.004	.0075	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130
SEP											
21...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130
28...	<.0030	E.0026	<.004	<.0060	<.0040	<.0040	<.0020	.0374	<.0070	<.0040	<.0130

08374200 RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	<.0030	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	98.7	90.3	925
31...	<.0030	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	116	99.1	877
SEP											
21...	<.0030	.0054	E.0021	<.0070	<.0130	<.0020	<.0010	<.0020	103	99.7	862
28...	<.0030	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	.0047	105	93.8	877

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08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°46'50", long 101°45'20", Val Verde County, Hydrologic Unit 13040212, at gaging station 0.1 mi downstream from Terrell-Val Verde County line, 16.9 mi from Langtry, and 597.2 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--80,742 mi^2, United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--
INORGANIC CHEMICAL DATA: Apr 1944 to current year.
ORGANIC CHEMICAL DATA: Jul 1975 to Jun 1982 and Oct 1995 to current year.
BIOCHEMICAL DATA: Oct 1974 to Aug 1995.
SEDIMENT DATA: Oct 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1974 to Sep 1981 (local observer).
WATER TEMPERATURE: Oct 1974 to Sep 1981 (local observer).

REMARKS.--Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1999 are given in International Boundary and Water Commission Water Bulletins Nos. 68 and 69. Since Sep 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, Dec 4, 1974; minimum daily, 225 microsiemens, May 2, 1981.
WATER TEMPERATURE: Maximum daily, 32.0°C, Jun 13, 1977, Jul 25, 26, 1979, Jul 4, 1980, and Jun 8, 1981; minimum daily, 9.0°C, Jan 12, 1975, Jan 8, 1976, and Jan 18, 1981.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
DEC												
16...	1210	1028	10	448	1620	8.0	13.0	40	10.2	101	330	170
JAN												
13...	1100	1028	10	458	1680	8.3	12.0	18	9.8	95	320	190
MAR												
24...	1120	1028	10	313	1390	7.9	23.3	120	7.9	98	330	180
APR												
21...	1030	1028	10	222	1070	8.2	21.5	330	9.0	108	290	160
MAY												
19...	1150	1028	10	195	1310	8.1	26.4	80	7.4	97	320	180
JUN												
15...	1800	1028	10	15700	640	7.5	22.4	300	2.6	32	200	100
30...	0900	1028	10	735	952	8.0	28.0	2200	6.7	91	270	160
AUG												
03...	1100	1028	10	1770	746	7.7	27.5	4000	6.0	80	200	110
SEP												
09...	1210	1028	10	900	1100	7.7	27.8	3600	6.4	86	260	150

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (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 DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
DEC												
16...	86	27	211	5	58	7.3	0	192	158	340	210	1.2
JAN												
13...	82	28	216	5	59	6.5	3	153	130	360	230	1.2
MAR												
24...	85	28	159	4	51	6.2	0	183	150	300	160	1.2
APR												
21...	90	15	114	3	46	5.1	0	159	130	240	99	.90
MAY												
19...	83	27	147	4	50	6.0	0	168	138	300	140	1.3
JUN												
15...	67	6.5	54	2	37	4.6	0	111	91	160	36	.46
30...	90	9.7	94	3	43	5.9	0	135	111	290	50	1.1
AUG												
03...	68	7.1	65	2	41	4.4	0	107	88	190	41	.60
SEP												
09...	86	11	120	3	49	5.4	0	137	112	280	110	.90

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
DEC												
16...	12	1030	1000	.424	.001	.425	.004	1.0	.61	.18	.18	.61
JAN												
13...	.57	1050	1000	--	.001	<.005	.006	--	1.4	.29	.30	1.4
MAR												
24...	16	836	851	.421	.006	.427	.008	.94	.51	.11	.12	.51
APR												
21...	14	702	666	.715	.004	.719	.005	1.5	.79	.16	.16	.80
MAY												
19...	19	832	813	.570	.006	.576	.025	.94	.34	--	E.10	.36
JUN												
15...	9.1	430	395	.960	.049	1.01	.208	--	--	.42	.63	--
30...	16	673	629	1.26	.001	1.26	.006	1.8	.51	.22	.23	.52
AUG												
03...	12	490	446	.916	.005	.921	.006	1.2	.32	--	<.10	.32
SEP												
09...	14	726	695	1.05	.003	1.06	.006	11	10	.18	.19	10

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED 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												
16...	.084	<.050	<.001	--	2.2	1.8	93	77	100	<1.0	<1.0	4
JAN												
13...	.128	<.050	.003	.01	4.1	3.5	31	25	100	--	--	4
MAR												
24...	.105	<.004	.001	.00	2.2	4.2	180	213	100	<1.0	<1.0	2
APR												
21...	.275	<.004	.003	.01	3.7	1.5	319	532	99	--	--	2
MAY												
19...	.101	<.004	.002	.01	1.5	1.4	65	123	100	2.7	<1.0	3
JUN												
15...	--	.009	.001	.00	5.5	>20	534000	12600	99	2.5	<1.0	1
30...	<.050	.018	.013	.04	3.7	>20	8830	4450	100	--	--	2
AUG												
03...	.068	.010	.011	.03	4.8	>25	54500	11400	100	--	--	2
SEP												
09...	4.40	.018	.002	.01	2.6	>10	18500	7600	100	2.4	<1.0	2

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)
DEC												
16...	90	<1.0	283	<1.0	<1.0	<1.0	1.1	<10	<1.0	110	1.2	12
JAN												
13...	--	--	294	--	--	--	--	<10	--	110	--	--
MAR												
24...	93	<1.0	256	<1.0	8.0	<1.0	1.2	<10	<1.0	97	<1.0	9.7
APR												
21...	--	--	188	--	--	--	--	<10	--	58	--	--
MAY												
19...	127	<1.0	263	<1.0	<1.0	<1.0	1.6	<10	<1.0	93	3.7	11
JUN												
15...	102	<1.0	89	<1.0	<1.0	<1.0	<1.0	<10	<1.0	20	5.6	6.3
30...	--	--	197	--	--	--	--	<10	--	50	--	--
AUG												
03...	--	--	105	--	--	--	--	<10	--	28	--	--
SEP												
09...	98	<1.0	187	<1.0	<1.0	<1.0	2.4	<10	<1.0	55	<1.0	7.3

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	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)
DEC												
16...	3.2	1	<1.0	1960	E6	1.1	5.2	<.0030	<.0020	<.002	<.0020	<.001
JAN												
13...	--	<1	--	2020	<10	--	--	<.0030	<.0020	<.002	<.0020	<.001
MAR												
24...	2.0	<1	<1.0	2080	E6	<1.0	4.8	<.0030	<.0020	<.002	<.0020	<.001
APR												
21...	--	<1	--	1800	<10	--	--	<.0030	<.0020	<.002	<.0020	<.001
MAY												
19...	1.7	1	<1.0	2070	<10	1.3	5.3	<.0030	<.0020	<.002	<.0020	<.001
JUN												
15...	1.9	2	<1.0	912	<10	1.0	2.8	<.0030	<.0020	<.002	<.0020	<.001
30...	--	1	--	1570	E8	--	--	<.0030	<.0020	<.002	<.0020	<.001
AUG												
03...	--	<1	--	1100	E6	--	--	<.0030	<.0020	<.002	<.0020	<.001
SEP												
09...	2.8	<1	<1.0	1480	<10	<1.0	3.9	<.0030	<.0020	<.002	<.0020	<.001

DATE	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	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)
DEC												
16...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.007	<.001
JAN												
13...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.005	<.001
MAR												
24...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	E.003	<.001
APR												
21...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
MAY												
19...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
JUN												
15...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
30...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
AUG												
03...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
SEP												
09...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	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)
DEC												
16...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JAN												
13...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
MAR												
24...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
APR												
21...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
MAY												
19...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JUN												
15...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
30...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
AUG												
03...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
SEP												
09...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-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)
DEC											
16...	E.0012	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JAN											
13...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAR											
24...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR											
21...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY											
19...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUN											
15...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
30...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	--	<.0030
AUG											
03...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP											
09...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

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-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
DEC											
16...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	124	110	90.1	961
JAN											
13...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	109	122	86.6	900
MAR											
24...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	95.5	92.6	84.3	970
APR											
21...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	94.1	108	103	909
MAY											
19...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	94.5	--	92.7	909
JUN											
15...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	121	--	113	934
30...	<.0050	<.0100	<.0100	<.0130	<.0020	<.0010	<.0020	110	--	98.5	813
AUG											
03...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	113	--	97.8	909
SEP											
09...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	108	--	108	943

08446500 PECOS RIVER NEAR GIRVIN, TX

LOCATION.--Lat 31°06'47", long 102°25'02", Pecos County, Hydrologic Unit 13070008, on right bank 2.1 mi upstream from Comanche Creek, 3.8 mi northwest of Girvin, and 7.2 mi upstream from bridge on U.S. Highway 67.

DRAINAGE AREA.--29,560 mi^2 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 Jun 1941, Oct 1946 to Sep 1947, and Oct 1953 to Aug 1982. Pesticide data: May 1968 to Jul 1974. Specific conductance: Oct 1939 to Jun 1941, Oct 1946 to Sep 1947, Oct 1953 to Sep 1982. Water temperature: Oct 1953 to Jan 1959 and Mar 1964 to Sep 1982.

GAGE.--Water-stage recorder with concrete control and measuring flume. Datum of gage not determined. Supplementary water-stage recorder, used as regular gage prior to Jul 17, 1951, is now used only for peaks exceeding about 750 ft^3/s, 7.2 mi downstream at datum 2,269.65 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in water year 1939, at least 10% of contributing drainage area has been regulated by Red Bluff Reservoir (station 08410000, normal storage 310,000 acre-ft). 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 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

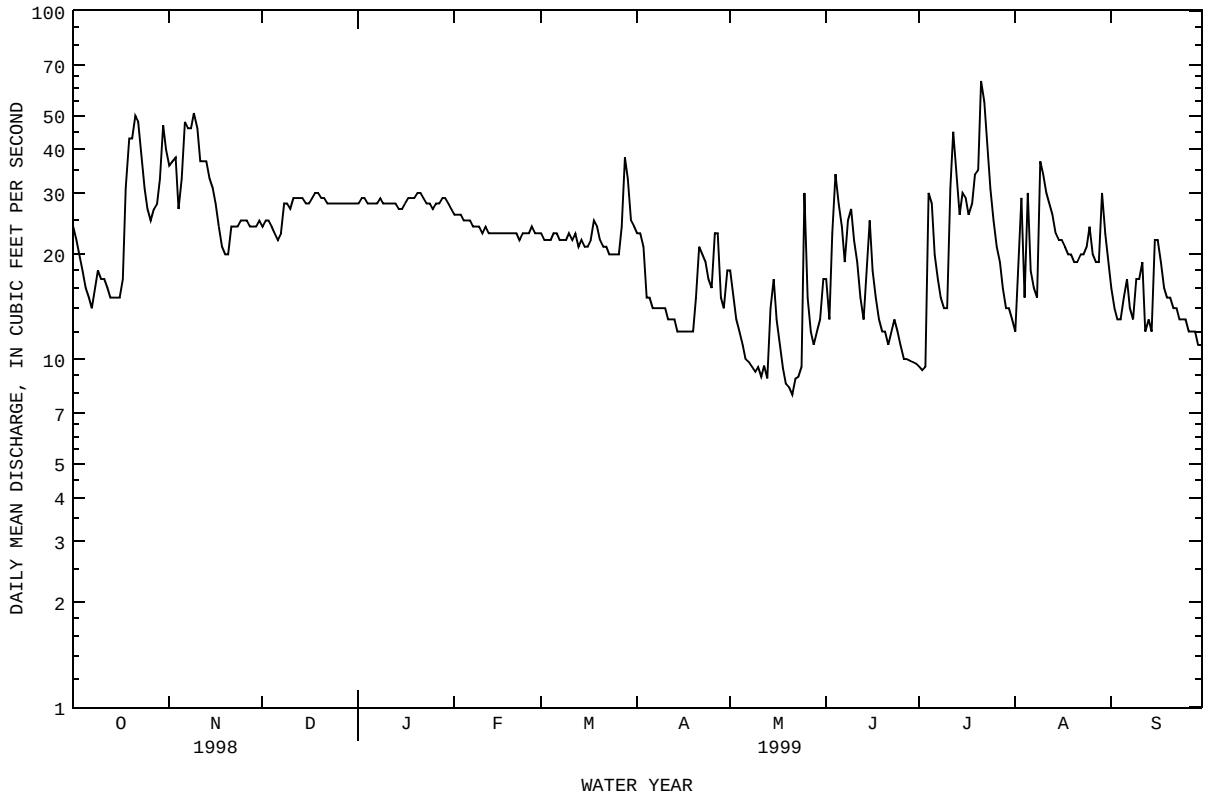
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	36	24	28	26	23	23	18	17	9.5	12	16
2	22	37	25	29	26	22	23	15	13	9.3	19	14
3	20	38	25	29	26	22	21	13	23	9.5	29	13
4	18	27	24	28	25	22	15	12	34	30	15	13
5	16	33	23	28	25	23	15	11	28	28	30	15
6	15	48	22	28	25	23	14	10	24	20	18	17
7	14	46	23	28	24	22	14	9.8	19	17	16	14
8	16	46	28	29	24	22	14	9.5	25	15	15	13
9	18	51	28	28	24	22	14	9.2	27	14	37	17
10	17	46	27	28	23	23	14	9.5	22	14	34	17
11	17	37	29	28	24	22	13	8.9	19	31	30	19
12	16	37	29	28	23	23	13	9.6	15	45	28	12
13	15	37	29	28	23	21	13	8.8	13	34	26	13
14	15	33	29	27	23	22	12	14	17	26	23	12
15	15	31	28	27	23	21	12	17	25	30	22	22
16	15	28	28	28	23	21	12	13	18	29	22	22
17	17	24	29	29	23	22	12	11	15	26	21	19
18	31	21	30	29	23	25	12	9.4	13	28	20	16
19	43	20	30	29	23	24	12	8.5	12	34	20	15
20	43	20	29	30	23	22	15	8.3	12	35	19	15
21	50	24	29	30	23	21	21	7.9	11	63	19	14
22	48	24	28	29	22	21	20	8.8	12	55	20	14
23	39	24	28	28	23	20	19	8.9	13	40	20	13
24	31	25	28	28	23	20	17	9.5	12	31	21	13
25	27	25	28	27	23	20	16	30	11	25	24	13
26	25	25	28	28	24	20	23	15	10	21	20	12
27	27	24	28	28	23	24	23	12	10	19	19	12
28	28	24	28	29	23	38	15	11	9.9	16	19	12
29	33	24	28	29	---	33	14	12	9.8	14	30	11
30	47	25	28	28	---	25	18	13	9.7	14	23	11
31	40	---	28	27	---	24	---	17	---	13	19	---
TOTAL	802	940	848	877	663	713	479	370.6	499.4	795.3	690	439
MEAN	25.9	31.3	27.4	28.3	23.7	23.0	16.0	12.0	16.6	25.7	22.3	14.6
MAX	50	51	30	30	26	38	23	30	34	63	37	22
MIN	14	20	22	27	22	20	12	7.9	9.7	9.3	12	11
AC-FT	1590	1860	1680	1740	1320	1410	950	735	991	1580	1370	871

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1999, BY WATER YEAR (WY)

MEAN	198	106	68.4	64.4	54.8	44.8	36.3	46.3	101	47.0	34.5	64.8
MAX	8506	3007	1192	935	769	314	143	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 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1939 - 1999	
ANNUAL TOTAL	8276.5		8116.3			
ANNUAL MEAN	22.7		22.2		72.3	
HIGHEST ANNUAL MEAN					1386	1942
LOWEST ANNUAL MEAN					16.2	1984
HIGHEST DAILY MEAN	51	Nov 9	63	Jul 21	19400	Oct 5 1941
LOWEST DAILY MEAN	5.9	Jun 19	7.9	May 21	1.9	Jun 19 1982
ANNUAL SEVEN-DAY MINIMUM	6.0	Jun 19	8.8	May 18	2.3	Jul 1 1983
INSTANTANEOUS PEAK FLOW			69	Jul 21	20000	Oct 5 1941
INSTANTANEOUS PEAK STAGE			1.62	Jul 21	20.49	Oct 5 1941
ANNUAL RUNOFF (AC-FT)	16420		16100		52370	
10 PERCENT EXCEEDS	35		31		85	
50 PERCENT EXCEEDS	23		22		28	
90 PERCENT EXCEEDS	11		12		11	

08446500 PECOS RIVER NEAR GIRVIN, TX--Continued



08447410 PECOS RIVER NEAR LANGTRY, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°48'10", long 101°26'45", Val Verde County, Hydrologic Unit 13040212, at gaging station 7.4 mi east of Langtry, and 15.0 mi upstream from confluence with the Rio Grande.

DRAINAGE AREA.--35,179 mi^2.

PERIOD OF RECORD.--
INORGANIC CHEMICAL DATA: Oct 1954 to current year.
ORGANIC CHEMICAL DATA: Jul 1975 to Jun 1982 and Oct 1995 to current year.
BIOCHEMICAL DATA: Oct 1974 to Aug 1995.
SEDIMENT DATA: Oct 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1970 to Sep 1976 and Oct 1980 (local observer), Nov 1980 to Sep 1985.
WATER TEMPERATURE: Oct 1970 to Sep 1976 and Oct 1980 (local observer), Nov 1980 to Sep 1985.

INSTRUMENTATION.--Water-quality monitor Nov 1980 to Sep 1985.

REMARKS.--Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1999 are given in International Boundary and Water Commission Water Bulletins Nos. 68 and 69. 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, Mar 21, 22, 1981; minimum, 230 microsiemens, Oct 11, 1981.
WATER TEMPERATURE: Maximum, 32.5°C, Jun 8, 1981; minimum, 1.5°C, Dec 26, 27, 1983.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
DEC												
15...	1400	1028	20	157	3660	8.5	11.0	.25	10.1	96	740	590
JAN												
12...	1430	1028	20	157	3900	8.0	10.0	.26	10.6	100	810	650
MAR												
23...	1440	1028	20	151	3550	8.2	21.2	1.8	9.0	110	700	570
APR												
20...	1530	1028	20	112	4060	8.2	24.0	1.2	8.9	113	820	700
MAY												
18...	1450	1028	20	139	3670	7.9	27.8	1.5	7.6	105	710	610
JUN												
29...	1410	1028	20	131	2880	8.2	30.7	1.5	7.1	101	550	450
AUG												
02...	1500	1028	20	92	3060	8.1	30.7	1.0	7.1	102	580	480
SEP												
08...	1520	1028	20	84	2890	8.2	29.6	.37	7.3	104	540	440

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (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 DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
DEC												
15...	170	78	461	7	57	8.8	5	179	155	490	800	.77
JAN												
12...	180	86	520	8	58	8.6	0	195	160	530	870	.78
MAR												
23...	150	76	460	8	59	7.3	0	152	125	470	790	.81
APR												
20...	170	92	568	9	60	8.5	0	136	111	560	1000	.86
MAY												
18...	150	81	514	8	61	8.3	0	122	100	490	850	.92
JUN												
29...	120	63	392	7	60	7.0	0	127	104	390	670	.84
AUG												
02...	120	67	424	8	61	7.7	0	122	100	420	700	.84
SEP												
08...	110	63	393	7	61	6.4	0	119	98	380	670	.86

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
DEC												
15...	15	2130	2120	.768	.018	.786	.036	.91	.09	--	<.10	.13
JAN												
12...	14	2390	2310	--	<.010	.797	<.020	.93	--	--	.10	.13
MAR												
23...	11	2130	2050	--	<.010	.435	<.020	.66	--	--	.18	.23
APR												
20...	11	2570	2510	--	<.010	.196	.030	.43	.20	.15	.18	.23
MAY												
18...	12	2260	2170	--	<.010	.067	.049	.37	.25	--	E.10	.30
JUN												
29...	9.8	1790	1720	.099	.012	.111	.069	.43	.25	.21	.28	.31
AUG												
02...	13	1880	1810	--	<.010	<.050	.039	--	.26	.19	.23	.30
SEP												
08...	13	1700	1700	--	<.010	<.050	.027	--	.09	.17	.20	.12

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED 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												
15...	<.050	<.050	.001	.00	1.1	<.20	.85	2	41	5.8	<2.0	1
JAN												
12...	<.050	<.050	.002	.01	1.2	<.20	--	<1	83	--	--	1
MAR												
23...	.010	<.004	.001	.00	2.5	<.20	1.2	3	93	2.1	<2.0	<1
APR												
20...	<.004	<.004	.002	.01	2.0	<.20	.60	2	75	--	--	2
MAY												
18...	<.004	<.004	.003	.01	2.8	<.20	.75	2	63	7.5	<2.0	<1
JUN												
29...	<.004	<.004	.002	.01	4.7	.30	.71	2	93	--	--	1
AUG												
02...	.006	<.004	.001	.00	1.3	.20	.75	3	76	--	--	2
SEP												
08...	<.004	<.004	<.001	--	2.3	.20	.23	1	80	<2.0	<2.0	1

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)
DEC												
15...	83	<2.0	224	<2.0	<2.0	<2.0	<2.0	<30	<2.0	72	<2.0	6.7
JAN												
12...	--	--	150	--	--	--	--	<15	--	76	--	--
MAR												
23...	76	<2.0	216	<2.0	5.2	<2.0	<2.0	<30	<2.0	65	2.1	6.7
APR												
20...	--	--	266	--	--	--	--	<30	--	66	--	--
MAY												
18...	77	<2.0	970	<2.0	<1.0	<2.0	2.7	<30	<2.0	83	6.4	7.0
JUN												
29...	--	--	221	--	--	--	--	<30	--	61	--	--
AUG												
02...	--	--	235	--	--	--	--	<30	--	69	--	--
SEP												
08...	70	<2.0	229	<2.0	<1.0	<2.0	<2.0	<30	<2.0	66	2.4	5.6

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	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)
DEC												
15...	3.8	1	<2.0	2970	22	2.5	3.9	<.0030	<.0020	<.002	<.0020	<.001
JAN												
12...	--	1	--	3330	21	--	--	<.0030	<.0020	<.002	<.0020	<.001
MAR												
23...	4.4	1	<2.0	2810	19	2.3	3.7	<.0030	<.0020	<.002	<.0020	<.001
APR												
20...	--	<1	--	3230	26	--	--	<.0030	<.0020	<.002	<.0020	<.001
MAY												
18...	5.3	<1	<2.0	2980	21	5.4	3.5	<.0030	<.0020	<.002	<.0020	<.001
JUN												
29...	--	<1	--	2330	15	--	--	<.0030	<.0020	<.002	<.0020	<.001
AUG												
02...	--	<1	--	2440	18	--	--	<.0030	<.0020	<.002	<.0020	<.001
SEP												
08...	2.6	<1	<2.0	2340	16	<2.0	2.3	<.0030	<.0020	<.002	<.0020	<.001

DATE	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	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)
DEC												
15...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
JAN												
12...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
MAR												
23...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
APR												
20...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
MAY												
18...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
JUN												
29...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
AUG												
02...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
SEP												
08...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	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)
DEC												
15...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JAN												
12...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
MAR												
23...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
APR												
20...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
MAY												
18...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JUN												
29...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
AUG												
02...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
SEP												
08...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-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)
DEC											
15...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JAN											
12...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAR											
23...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR											
20...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY											
18...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0200	<.0030
JUN											
29...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
AUG											
02...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP											
08...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

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-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
DEC											
15...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	121	102	85.1	980
JAN											
12...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	105	110	87.1	925
MAR											
23...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	77.3	80.9	75.9	917
APR											
20...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	102	112	105	925
MAY											
18...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	96.8	--	101	934
JUN											
29...	<.0050	<.0100	E.0139	<.0130	<.0020	<.0010	E.0017	102	--	99.6	854
AUG											
02...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	110	--	97.6	892
SEP											
08...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	110	--	106	934

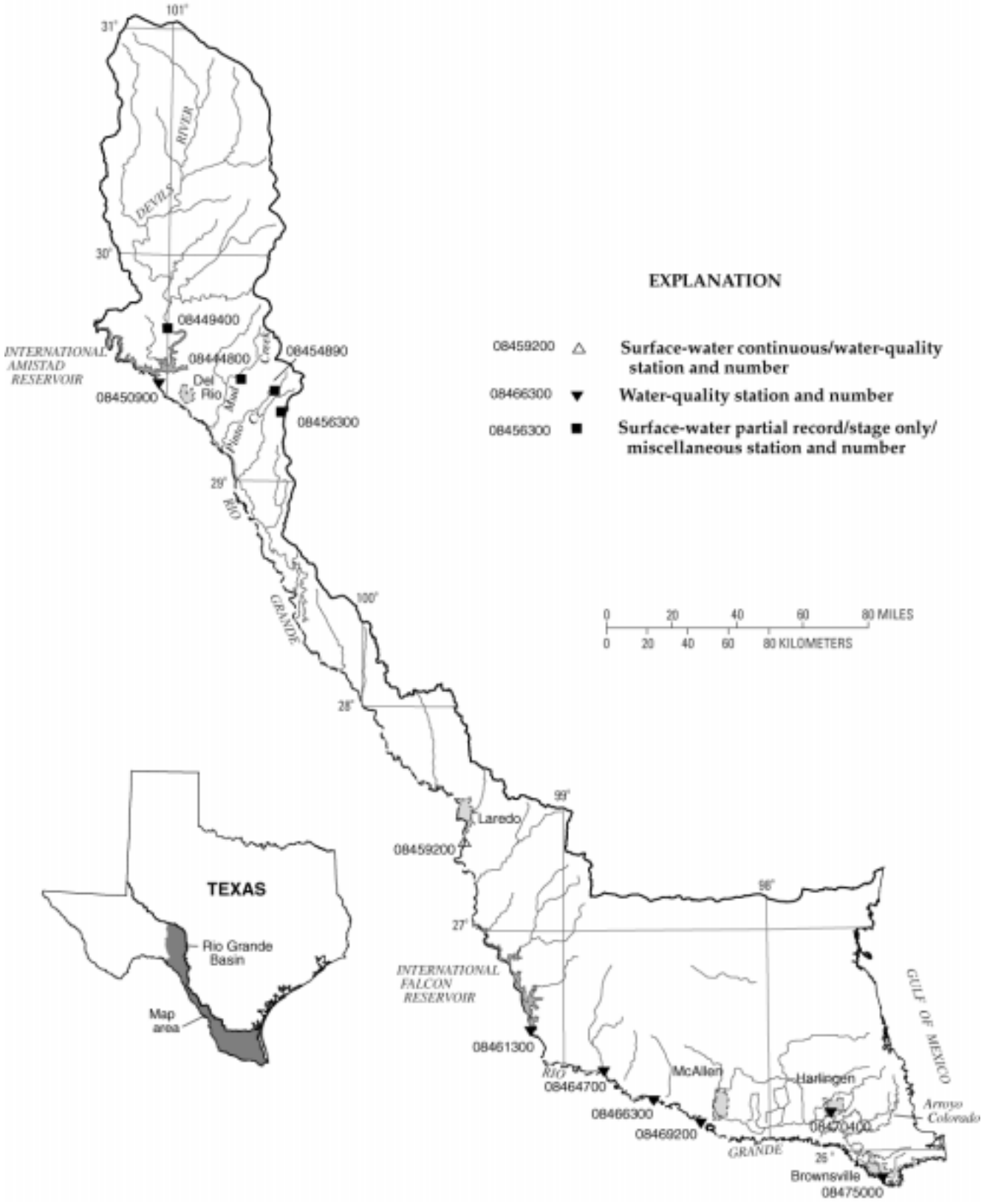


Figure 10.--Map showing location of gaging stations in the second section of the Rio Grande Basin

08449400 Devils River at Pafford Crossing near Comstock, TX 398
08450900 Rio Grande below Amistad Dam near Del Rio, TX 364
08454800 Mud Springs at Mays Ranch, TX 398
08454890 Pinto Springs at Belcher Ranch, TX 398
08456300 Las Moras Springs at Brackettville, TX 396
08459200 Rio Grande at Pipeline Crossing below Laredo, TX 368
08461300 Rio Grande below Falcon Dam, TX 378
08464700 Rio Grande at Fort Ringgold, Rio Grande City, TX 382
08466300 Rio Grande near Los Ebanos, TX 384
08469200 Rio Grande below Anzalduas Dam, TX 386
08470400 Arroyo Colorado at Harlingen, TX 388
08475000 Rio Grande near Brownsville, TX 392

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°25'00", long 101°27'02", Val Verde County, Hydrologic Unit 13080001, 2.2 mi downstream from Amistad Dam and 10 mi northwest of Del Rio.

DRAINAGE AREA.--123,143 mi^2.

PERIOD OF RECORD.--
INORGANIC CHEMICAL DATA: Jul 1968 to current year.
ORGANIC CHEMICAL DATA: Oct 1995 to current year.
SEDIMENT DATA: Oct 1995 to current year.

REMARKS.--The flow is controlled largely by releases from Amistad Reservoir. Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1999 are given in International Boundary and Water Commission Water Bulletins Nos. 68 and 69. Since Jun 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 1998 TO SEPTEMBER 1999

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
JAN												
14...	0940	1028	10	254	962	8.2	12.0	1.8	8.7	83	250	130
MAR												
25...	1020	1028	10	1860	1020	7.8	15.4	1.5	5.5	57	260	130
APR												
22...	1010	1028	10	3540	1070	8.0	18.0	2.0	7.4	82	270	150
MAY												
20...	1010	1028	10	172	1050	7.7	19.6	1.7	6.1	69	260	130
AUG												
04...	1000	1028	10	505	1060	7.3	22.2	1.0	2.5	30	260	130
SEP												
10...	1000	1028	10	106	1040	7.2	22.5	1.8	1.6	19	270	130

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (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 DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
JAN												
14...	70	19	98	3	45	4.3	0	154	126	170	130	.66
MAR												
25...	71	20	104	3	46	4.3	0	153	126	180	130	.68
APR												
22...	73	20	107	3	46	4.4	0	147	121	180	140	.66
MAY												
20...	71	19	103	3	46	4.3	0	157	128	180	130	.67
AUG												
04...	70	20	104	3	46	4.4	0	156	128	170	130	.64
SEP												
10...	74	20	106	3	46	4.6	0	168	137	170	130	.70

DATE	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
JAN												
14...	12	604	579	--	<.010	.375	.027	.60	.20	.16	.19	.22
MAR												
25...	12	623	594	--	<.010	.449	.048	.69	.19	.12	.17	.24
APR												
22...	12	652	614	--	<.010	.419	<.020	.63	--	--	.17	.21
MAY												
20...	11	622	601	--	<.010	.382	.022	.59	.18	--	<.10	.20
AUG												
04...	12	1250	593	--	<.010	.296	<.020	.52	--	--	.17	.22
SEP												
10...	14	622	609	.099	.010	.109	<.020	.33	--	--	.18	.22

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED 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)
JAN												
14...	<.050	<.050	.001	.00	2.6	<.20	2.7	4	98	2	135	<10
MAR												
25...	.012	<.004	.001	.00	2.9	.20	15	3	85	2	150	<10
APR												
22...	.007	<.004	.001	.00	3.0	.20	29	3	53	2	148	<10
MAY												
20...	<.004	<.004	.002	.01	2.3	<.20	1.4	3	81	2	146	<10
AUG												
04...	<.004	<.004	.001	.00	2.5	.20	8.2	6	97	3	151	<10
SEP												
10...	.005	<.004	<.001	--	2.3	.20	1.4	5	97	4	139	<10

DATE	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)	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)
JAN											
14...	37	<1	1110	E5	<.0030	<.0020	<.002	<.0020	<.001	<.0010	<.0020
MAR											
25...	39	1	1120	E6	<.0030	<.0020	<.002	<.0020	<.001	<.0010	<.0020
APR											
22...	39	<1	1130	10	<.0030	<.0020	<.002	<.0020	<.001	<.0010	<.0020
MAY											
20...	42	<1	1100	<10	<.0030	<.0020	<.002	<.0020	E.003	<.0010	<.0020
AUG											
04...	41	<1	1170	<10	<.0030	<.0020	<.002	<.0020	<.001	<.0010	<.0020
SEP											
10...	41	<1	1220	E5	<.0030	<.0020	<.002	<.0020	<.001	<.0010	<.0020

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)
JAN											
14...	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001	<.0170
MAR											
25...	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001	<.0170
APR											
22...	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001	<.0170
MAY											
20...	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	E.003	<.001	<.0170
AUG											
04...	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001	<.0170
SEP											
10...	<.0020	<.0030	<.0100	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001	<.0170

DATE	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	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)
JAN											
14...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
MAR											
25...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
APR											
22...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
MAY											
20...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
AUG											
04...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
SEP											
10...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-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)
JAN											
14...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAR											
25...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR											
22...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY											
20...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0400	<.0030
AUG											
04...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP											
10...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

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-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
JAN											
14...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	112	110	94.0	900
MAR											
25...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	80.6	85.7	80.5	934
APR											
22...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	80.2	114	90.2	900
MAY											
20...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	104	--	102	943
AUG											
04...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	97.9	--	88.3	869
SEP											
10...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	108	--	103	917

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08459200 RIO GRANDE RIVER 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 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 335 ft above sea level. 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 by Falcon Dam (normal storage 2,767,400 acre-ft) located 95 mi upstream. Extensive withdrawal during the year for municipal and agricultural usage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1290	1710	1570	e1480	1580	1230	1080	8330	3650	2360	1130	e2550
2	e1410	1680	1510	e1500	1380	1220	1020	8140	3620	2730	1040	2220
3	e1460	1660	e1540	e1520	1420	1230	1020	6970	3630	2530	1110	e2000
4	e1230	1650	1560	e1510	1410	1240	978	6400	3750	2340	1150	e1840
5	e1520	1650	1550	e1520	1370	1220	974	6340	3880	2470	1140	e1700
6	e1530	1640	1530	e1520	1350	1180	1040	6350	3910	2430	1220	e1580
7	e1930	1580	1550	2270	1330	1120	1040	6420	3850	2560	1280	e1460
8	e2090	1570	1520	1860	1300	1120	1070	6350	3660	2470	1260	1320
9	e1800	1570	1520	1520	1290	1140	1030	4350	3560	2510	1370	1210
10	e1700	1630	1540	1470	1310	1120	918	1880	3170	1740	1250	1120
11	e3500	1760	1510	1480	1250	1150	927	1430	3000	1180	1190	1110
12	e2310	1780	1470	1490	1210	1220	948	5870	4060	1130	1190	1020
13	e1980	1820	1460	1480	1280	1370	931	7990	3710	1150	1110	886
14	e1990	1750	1410	1450	1460	1280	945	8790	3270	1210	1170	803
15	e2050	1970	e1410	1420	1400	1300	1000	7970	3050	1240	1390	985
16	e2040	1800	1440	1410	1370	1400	960	8380	3080	1160	1130	1010
17	e1950	1690	1440	1420	1390	1480	956	8500	2960	1170	1700	2010
18	e1840	1660	1400	1360	1380	1580	948	8510	2910	1420	3040	7700
19	e1740	1620	1360	1400	1350	1500	981	8500	2970	1080	2260	4520
20	1640	1600	1340	1400	1320	1360	1960	8500	2880	1070	4060	1940
21	1650	1640	1380	1360	1270	1310	7380	5890	2840	1130	3550	1580
22	6010	1630	1380	1320	1220	1310	7750	4120	2850	1170	2200	1580
23	5200	1610	1410	1350	1290	1700	7860	3880	2880	1570	1870	1530
24	2030	1610	1460	1340	1300	1290	7690	3910	2460	1030	1760	1380
25	1770	1590	1480	1340	1270	1240	7670	3810	2310	854	e13000	1360
26	1690	1580	1530	1350	1230	1180	7880	3820	2230	1020	e72000	1210
27	1710	1560	1610	1320	1220	1100	8600	3860	2310	1140	e88000	1060
28	1720	1560	1530	1280	1250	1080	8470	4040	2400	1220	e10700	907
29	1750	1620	1470	1270	---	1070	8310	4000	2320	1270	e5000	892
30	1740	1570	e1470	1260	---	1100	8330	3800	2410	1170	e3300	905
31	1790	---	e1460	1300	---	1070	---	3680	---	1050	e2810	---
TOTAL	64060	49760	45810	44970	37200	38910	100666	180780	93580	48574	234380	51388
MEAN	2066	1659	1478	1451	1329	1255	3356	5832	3119	1567	7561	1713
MAX	6010	1970	1610	2270	1580	1700	8600	8790	4060	2730	88000	7700
MIN	1230	1560	1340	1260	1210	1070	918	1430	2230	854	1040	803
AC-FT	127100	98700	90860	89200	73790	77180	199700	358600	185600	96350	464900	101900

e Estimated

08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX--Continued
(National stream-quality accounting network)

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	856	711	673	529	459	1280	4520	1760	e1400	e3170	e1350	2800
2	809	717	674	523	423	1280	4420	1610	e1300	e2850	e1380	2570
3	783	703	545	537	448	1270	4350	1640	e1200	e2610	e1390	2360
4	827	700	539	507	451	1220	4400	1540	e1100	e2700	1400	2240
5	767	1020	617	482	444	1140	4390	1460	e1090	e2640	1400	2190
6	1810	744	633	473	432	1130	4310	1460	e1100	e2570	1350	2140
7	2420	774	653	486	414	1150	4360	1460	e1100	e2800	1340	2090
8	1790	716	647	486	473	1210	4290	1410	e1110	e2550	1300	2060
9	1210	779	631	460	478	1260	4140	1410	e1190	e2600	1250	1990
10	1120	715	621	486	486	1270	4090	1400	e1410	e2500	1200	1900
11	1010	699	645	515	465	1200	4210	1420	e1200	e3300	1170	1820
12	928	716	577	521	1020	1190	4370	1550	e1170	e4500	1210	1770
13	877	739	475	525	1300	3020	4510	3480	e1270	e3100	1110	1720
14	825	e820	598	526	1350	4080	4520	3690	e3290	e2500	1030	1710
15	795	894	577	523	1350	4010	4560	2210	e2480	e2220	1020	1690
16	765	1050	537	500	1430	4060	4610	1890	e2630	e2400	1010	1720
17	728	918	546	472	1450	3780	4530	1770	e3910	e2610	1030	1690
18	890	841	578	472	1460	3980	4530	1770	e3710	e2600	1070	1600
19	1690	829	584	497	1450	4460	4730	1970	e3290	e2460	1000	1590
20	2690	821	574	528	1410	4190	4710	3070	e2810	e2310	937	1590
21	1740	811	592	507	1380	4170	4780	2060	e2500	e2260	947	1570
22	e1600	780	591	451	1360	4100	4790	1630	e7100	e2120	998	1480
23	1210	768	603	429	1390	4090	4810	1500	e20700	e2080	1650	1440
24	1010	781	552	453	1400	4080	4580	1470	e8200	e2010	7190	1410
25	923	776	537	454	1340	4030	4510	1420	e7600	e1990	17700	1380
26	831	743	552	475	1340	4030	5110	1410	e6700	e1920	24600	1450
27	787	739	562	502	1330	4410	5350	3290	e6250	e1900	11300	1480
28	767	741	572	474	1320	5800	4700	3130	e5700	e1850	5730	1350
29	760	713	562	448	---	5550	3250	3120	e5050	e1660	4300	1690
30	726	683	573	453	---	4930	2090	4050	e3640	e1450	3590	1370
31	684	---	554	459	---	4490	---	1750	---	e1400	3120	---
TOTAL	34628	23441	18174	15153	28053	95860	132520	62800	111200	75630	105072	53860
MEAN	1117	781	586	489	1002	3092	4417	2026	3707	2440	3389	1795
MAX	2690	1050	674	537	1460	5800	5350	4050	20700	4500	24600	2800
MIN	684	683	475	429	414	1130	2090	1400	1090	1400	937	1350
AC-FT	68680	46500	36050	30060	55640	190100	262900	124600	220600	150000	208400	106800

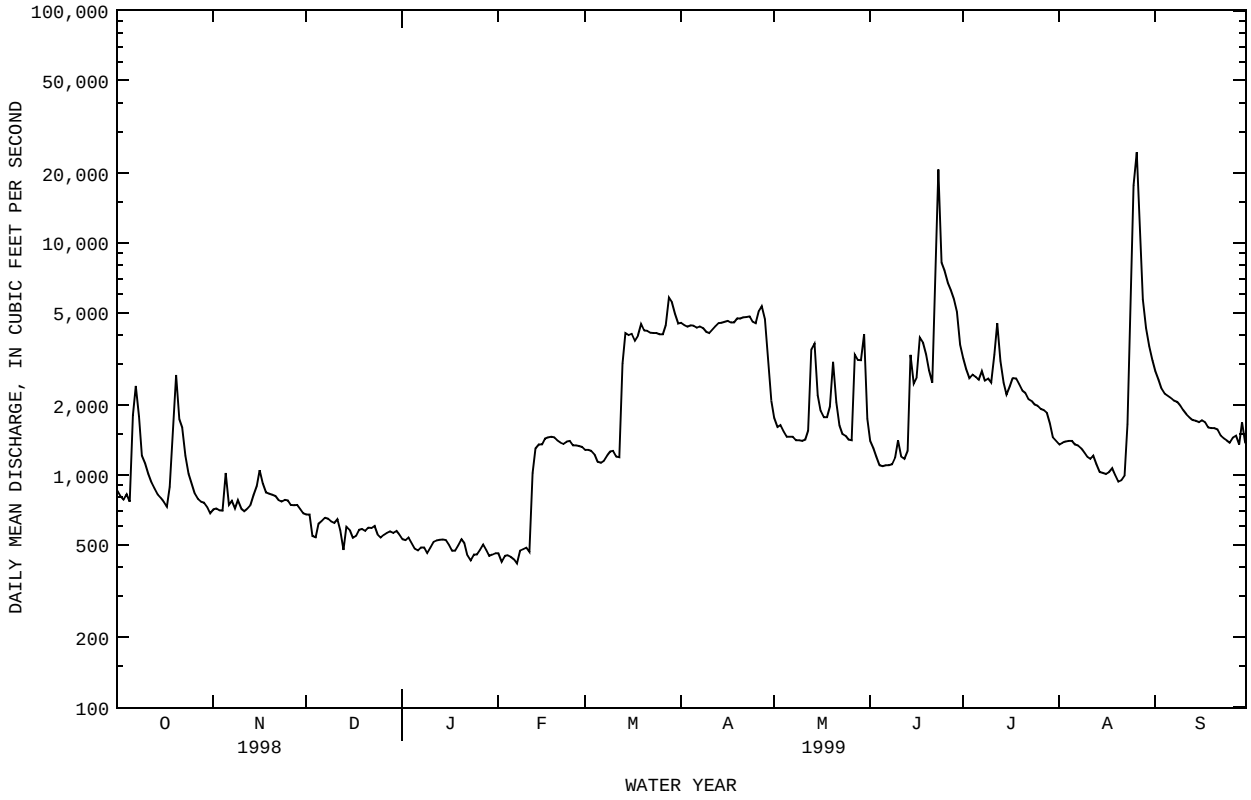
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1999, BY WATER YEAR (WY)

MEAN	1592	1220	1032	970	1165	2174	3886	3929	3413	2003	5475	1754
MAX	2066	1659	1478	1451	1329	3092	4417	5832	3707	2440	7561	1795
(WY)	1998	1998	1998	1998	1998	1999	1999	1998	1999	1999	1998	1999
MIN	1117	781	586	489	1002	1255	3356	2026	3119	1567	3389	1713
(WY)	1999	1999	1999	1999	1999	1998	1998	1999	1998	1998	1999	1998

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1997 - 1999	
ANNUAL TOTAL	906691		756391			
ANNUAL MEAN	2484		2072		2392	
HIGHEST ANNUAL MEAN					2713	1998
LOWEST ANNUAL MEAN					2072	1999
HIGHEST DAILY MEAN	88000	Aug 27	24600	Aug 26	88000	Aug 27 1998
LOWEST DAILY MEAN	475	Dec 13	414	Feb 7	1.7	Sep 28 1997
ANNUAL SEVEN-DAY MINIMUM	555	Dec 12	439	Feb 1	439	Feb 1 1999
INSTANTANEOUS PEAK FLOW			26400	Aug 26	91000	Aug 27 1998
INSTANTANEOUS PEAK STAGE			a15.18	Aug 26	a34.61	Aug 27 1998
ANNUAL RUNOFF (AC-FT)	1798000		1500000		1733000	
10 PERCENT EXCEEDS	4210		4440		4440	
50 PERCENT EXCEEDS	1290		1390		1460	
90 PERCENT EXCEEDS	708		522		650	

e Estimated
a From floodmark.

08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX--Continued
(National stream-quality accounting network)



08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY RECORDS

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 352.69 (567.47 km).

DRAINAGE AREA.--132,578 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: Jan 1998 to current year.
BIOCHEMICAL DATA: Apr 1977 to Dec 1981, Jan 1998 to current year.
RADIOCHEMICAL DATA: 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 upon request.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
OCT												
14...	1050	84823	--	798	1190	8.0	--	--	--	--	330	210
NOV												
19...	1000	1028	10	816	1100	8.1	22.0	12	7.1	83	290	170
DEC												
16...	1025	84823	--	539	1280	8.0	14.0	--	--	--	350	200
JAN												
13...	1030	1028	10	502	1150	8.1	15.0	4.4	8.0	79	310	190
FEB												
12...	1030	1028	10	1060	1100	7.4	18.0	36	8.7	91	310	180
MAR												
10...	1400	1028	10	1280	1090	7.8	24.5	19	--	--	270	150
APR												
08...	1130	1028	10	4520	1050	8.1	24.5	59	7.6	92	280	150
27...	1340	1028	10	4940	1080	8.0	25.5	75	7.6	93	260	130
MAY												
20...	0900	1028	10	3360	925	7.9	27.0	150	6.7	84	260	130
JUN												
10...	0920	1028	10	1370	1100	7.8	28.0	32	6.8	87	260	150
JUL												
20...	1140	1028	30	862	748	8.1	29.5	28	7.1	93	210	89
AUG												
18...	0820	1028	10	1060	840	7.7	26.5	11	5.2	65	250	140
24...	1800	1028	10	11400	600	7.9	26.0	400	6.2	78	180	95
SEP												
22...	0930	1028	10	1500	810	8.1	27.5	24	6.8	87	220	91

08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX--Continued
(National stream-quality accounting network)

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
14...	93	23	116	3	43	5.0	--	--	--	120	210	160
NOV												
19...	82	21	101	3	43	3.8	0	148	121	--	200	140
DEC												
16...	100	25	116	3	41	4.2	--	--	--	150	240	170
JAN												
13...	83	24	117	3	45	3.8	0	140	115	--	230	150
FEB												
12...	84	23	112	3	44	4.1	0	155	127	--	220	150
MAR												
10...	73	21	113	3	47	4.3	0	146	120	--	200	140
APR												
08...	79	21	109	3	45	4.5	0	161	132	--	180	130
27...	71	20	108	3	47	4.5	0	159	130	--	190	140
MAY												
20...	73	18	95	3	44	4.4	0	152	124	--	150	110
JUN												
10...	67	21	110	3	48	4.8	0	133	109	--	200	140
JUL												
20...	61	14	64	2	40	3.0	0	149	122	--	120	81
AUG												
18...	75	16	78	2	40	4.0	0	135	111	--	150	99
24...	53	11	55	2	39	3.1	0	103	84	--	110	65
SEP												
22...	64	15	66	2	39	2.9	0	160	131	--	130	85

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	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)
OCT												
14...	.44	14	--	690	--	--	--	--	--	--	--	--
NOV												
19...	.39	9.6	675	646	1.29	.045	1.34	.224	1.9	.34	.17	.40
DEC												
16...	.52	14	--	757	--	--	--	--	--	--	--	--
JAN												
13...	.52	1.3	716	686	.733	.077	.810	.521	1.8	.45	.24	.76
FEB												
12...	.54	3.0	720	671	.618	.034	.652	.362	1.7	.71	.28	.64
MAR												
10...	.60	4.2	668	636	.391	.016	.407	.097	.88	.38	.28	.37
APR												
08...	.67	12	652	625	--	<.010	.670	.049	1.5	.76	.21	.26
27...	.66	11	663	627	--	<.010	.538	.050	1.3	.70	.22	.27
MAY												
20...	.51	11	537	533	--	<.010	<.050	.083	--	.59	.26	.34
JUN												
10...	.59	6.3	660	617	.230	.014	.244	.079	.86	.53	.24	.32
JUL												
20...	.43	11	460	431	--	<.010	.508	.022	.94	.41	.42	.44
AUG												
18...	<.10	14	509	503	.643	.023	.666	.133	1.3	.48	.35	.48
24...	.37	11	369	364	--	<.010	.254	.062	1.7	1.4	.27	.33
SEP												
22...	.43	13	467	456	.563	.015	.578	.074	.97	.32	.23	.31

08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	PHOS-PHORUS ORTHO, 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 SUS-PENDED 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)
OCT												
14...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	.56	.268	.208	.212	.65	2.6	.80	66	30	97	--	--
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	.98	.330	.270	.237	.73	2.8	.20	12	9	89	47	<1.0
FEB												
12...	1.1	.337	.191	.189	.58	2.5	.30	212	74	98	--	--
MAR												
10...	.48	.220	.173	.185	.57	2.5	.40	121	35	98	23	<1.0
APR												
08...	.81	.201	.088	.091	.28	2.8	.90	1610	132	96	1.3	<1.0
27...	.75	.203	.072	.071	.22	2.7	.90	1550	116	97	--	--
MAY												
20...	.67	.054	E.038	.014	.04	4.0	.90	2130	235	98	3.4	<1.0
JUN												
10...	.61	.179	.084	.069	.21	2.8	.60	263	71	97	--	--
JUL												
20...	.43	.137	.096	.055	.17	3.0	.50	235	101	99	4.2	<1.0
AUG												
18...	.61	.216	.153	.166	.51	5.0	.70	149	52	99	--	--
24...	1.5	.869	E.030	.026	.08	3.2	8.9	43400	1410	97	4.5	1.5
SEP												
22...	.39	.154	.116	.105	.32	4.6	.60	134	33	95	--	--

DATE	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)	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)
OCT												
14...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	2	--	--	188	--	--	--	--	<10	--	33	--
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	1	80	<1.0	212	<1.0	<1.0	<1.0	1.4	<10	<1.0	37	13
FEB												
12...	2	--	--	206	--	--	--	--	<10	--	36	--
MAR												
10...	3	91	<1.0	178	<1.0	<1.0	<1.0	1.2	<10	<1.0	40	6.6
APR												
08...	2	100	<1.0	160	<1.0	<1.0	<1.0	1.2	<30	<1.0	46	1.9
27...	3	--	--	160	--	--	--	--	<10	--	38	--
MAY												
20...	3	98	<1.0	154	<1.0	<1.0	<1.0	V3.5	<10	<1.0	34	<1.0
JUN												
10...	3	--	--	186	--	--	--	--	E6.4	--	38	--
JUL												
20...	2	79	<1.0	118	<1.0	<1.0	<1.0	1.1	<10	<1.0	23	2.2
AUG												
18...	3	--	--	58	--	--	--	--	<10	--	13	--
24...	2	67	<1.0	116	<1.0	<1.0	<1.0	1.0	<10	<1.0	24	1.9
SEP												
22...	3	--	--	130	--	--	--	--	<10	--	25	--

08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	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)	2,6-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)
OCT												
14...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	--	--	<1	--	1200	<10	--	--	<.0030	<.0020	<.002	<.0020
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	5.0	1.3	<1	<1.0	1390	<10	2.4	3.4	<.0030	<.0020	<.002	<.0020
FEB												
12...	--	--	<1	--	1410	<10	--	--	<.0030	<.0020	<.002	<.0020
MAR												
10...	6.1	2.2	1	<1.0	1260	<10	1.4	3.1	<.0030	<.0020	<.002	<.0020
APR												
08...	6.4	1.6	1	<1.0	1190	<30	<1.0	3.3	<.0030	<.0020	<.002	<.0020
27...	--	--	<1	--	1180	E7	--	--	<.0030	<.0020	<.002	<.0020
MAY												
20...	5.7	1.7	1	<1.0	1140	<10	V2.2	2.5	<.0030	<.0020	<.002	<.0020
JUN												
10...	--	--	<1	--	1230	E5	--	--	<.0030	<.0020	<.002	<.0020
JUL												
20...	3.7	2.0	1	<1.0	855	E8	1.6	1.9	<.0030	<.0020	<.002	<.0020
AUG												
18...	--	--	<1	--	295	E8	--	--	<.0030	<.0020	<.002	<.0020
24...	3.2	1.6	<1	<1.0	704	E6	2.0	1.5	<.0030	<.0020	<.002	<.0020
SEP												
22...	--	--	1	--	975	<10	--	--	<.0030	<.0020	<.002	<.0020

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-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)
OCT												
14...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.128
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	<.001	<.0010	<.0020	<.0020	E.0033	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.011
FEB												
12...	<.001	<.0010	<.0020	<.0020	E.0040	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.049
MAR												
10...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002
APR												
08...	E.003	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.004
27...	.005	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.007
MAY												
20...	.009	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0049	.009
JUN												
10...	.004	<.0010	<.0020	<.0020	E.0122	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.007
JUL												
20...	E.003	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002
AUG												
18...	.007	<.0010	<.0020	<.0020	E.0778	<.0030	.0172	<.0050	<.0040	<.0020	<.0020	.119
24...	.020	<.0010	<.0020	<.0020	E.0076	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.021
SEP												
22...	<.001	<.0010	<.0020	<.0020	E.0045	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.008

08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	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)
OCT												
14...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	E.005	<.002	<.004	<.0040
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
FEB												
12...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	E.004	<.004	<.0040
MAR												
10...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
APR												
08...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
27...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
MAY												
20...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.004	<.004	<.0040
JUN												
10...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
JUL												
20...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
AUG												
18...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	.009	<.0020	.017	<.002	<.004	<.0040
24...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
SEP												
22...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.005	<.004	<.0040

DATE	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)	PROP-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)
OCT												
14...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
FEB												
12...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAR												
10...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR												
08...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
27...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY												
20...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0400	<.0030
JUN												
10...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUL												
20...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0300	<.0030
AUG												
18...	<.0030	E.0054	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
24...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP												
22...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
OCT											
14...	--	--	--	--	--	--	--	--	--	--	--
NOV											
19...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	99.7	102	101	862
DEC											
16...	--	--	--	--	--	--	--	--	--	--	--
JAN											
13...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	111	115	95.3	819
FEB											
12...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	102	99.5	86.9	943
MAR											
10...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	99.0	94.1	81.6	952
APR											
08...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	87.2	113	94.6	970
27...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	E.0016	102	108	104	917
MAY											
20...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	95.1	--	94.3	892
JUN											
10...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	108	--	96.4	884
JUL											
20...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	107	--	98.2	943
AUG											
18...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	107	--	102	862
24...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	106	--	102	934
SEP											
22...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	96.7	--	97.9	909

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08461300 RIO GRANDE BELOW FALCON DAM, TX
(National stream-quality accounting network)

LOCATION.--Lat 26°33'25", long 99°10'05", Starr County, Hydrologic Unit 13090001, U.S. Tailrace at Falcon Dam.

DRAINAGE AREA.--159,270 mi^2, United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--
CHEMICAL DATA: Jul 1955 to current year.
BIOCHEMICAL DATA: Oct 1995 to current year.
RADIOCHEMICAL 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. Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge and specific conductance for water year 1999 are given in International Boundary and Water Commission Water Bulletins Nos. 68 and 69. Since Sep 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
NOV												
18...	1600	1028	10	459	880	8.1	22.5	6.0	10.3	120	230	120
JAN												
12...	1630	1028	10	918	970	8.1	15.0	7.6	11.6	116	250	130
MAY												
19...	1740	1028	10	1590	1040	7.8	28.0	8.0	7.3	93	260	160
JUN												
29...	0830	1028	30	1420	943	7.7	28.0	6.0	5.1	65	220	130
JUL												
21...	0930	1028	10	424	871	7.8	27.5	7.0	4.9	62	210	110
AUG												
17...	1620	1028	10	2120	870	7.8	29.5	2.4	7.6	100	220	110

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (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 DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
NOV												
18...	63	17	85	2	44	5.1	0	134	110	160	110	.45
JAN												
12...	70	18	91	3	44	5.6	0	148	122	170	120	.51
MAY												
19...	69	21	115	3	48	5.0	0	129	106	200	140	.62
JUN												
29...	59	18	95	3	48	5.3	0	112	92	180	120	.55
JUL												
21...	55	16	87	3	47	4.8	0	118	97	160	110	.53
AUG												
17...	61	17	84	2	45	5.1	0	130	106	160	110	.52

DATE	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
NOV												
18...	9.2	552	522	.204	.018	.222	.081	.75	.45	.26	.34	.53
JAN												
12...	8.9	592	558	.079	.019	.098	.049	.60	.45	.28	.33	.50
MAY												
19...	11	636	626	.766	.010	.776	.046	1.4	.61	.19	.24	.65
JUN												
29...	8.5	573	541	.090	.012	.102	.154	.64	.38	.31	.47	.53
JUL												
21...	9.3	532	494	--	--	--	--	--	--	--	--	.70
AUG												
17...	11	522	506	.059	.025	.084	.078	.99	.83	.28	.36	.90

08461300 RIO GRANDE BELOW FALCON DAM, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED 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)
NOV												
18...	E.040	<.050	.010	.03	3.5	.50	21	17	67	--	--	2
JAN												
12...	<.050	<.050	.003	.01	3.7	.60	27	11	94	1.7	<1.0	2
MAY												
19...	.211	.077	.070	.21	3.0	2.7	56	13	86	<1.0	<1.0	2
JUN												
29...	.051	.015	.009	.03	3.4	.70	58	15	81	<1.0	<1.0	3
JUL												
21...	.050	--	--	--	3.9	.60	50	44	98	<1.0	<1.0	3
AUG												
17...	.047	.010	<.001	--	3.6	.80	92	16	96	--	--	3

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)
NOV												
18...	--	--	156	--	--	--	--	<10	--	32	--	--
JAN												
12...	124	<1.0	161	<1.0	<1.0	<1.0	1.2	<10	<1.0	32	1.8	6.0
MAY												
19...	111	<1.0	193	<1.0	<1.0	<1.0	1.1	<10	<1.0	42	4.8	6.3
JUN												
29...	111	<1.0	173	<1.0	<1.0	<1.0	1.0	<10	<1.0	34	6.7	5.9
JUL												
21...	108	<1.0	151	<1.0	<1.0	<1.0	<1.0	<10	<1.0	29	8.7	5.5
AUG												
17...	--	--	165	--	--	--	--	<10	--	33	--	--

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	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)
NOV												
18...	--	<1	--	1000	<10	--	--	<.0030	<.0020	<.002	<.0020	<.001
JAN												
12...	1.2	<1	<1.0	1090	<10	1.8	2.6	<.0030	<.0020	<.002	<.0020	<.001
MAY												
19...	1.5	<1	<1.0	1210	<10	1.2	2.8	<.0030	<.0020	<.002	<.0020	.007
JUN												
29...	1.7	1	<1.0	1040	<10	3.0	2.5	<.0030	<.0020	<.002	<.0020	.010
JUL												
21...	2.0	2	<1.0	939	E8	1.3	2.2	<.0030	<.0020	<.002	<.0020	.006
AUG												
17...	--	<1	--	965	E8	--	--	<.0030	<.0020	<.002	<.0020	.006

DATE	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 (UG/L) 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)
NOV												
18...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.066	<.001
JAN												
12...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
MAY												
19...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
JUN												
29...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
JUL												
21...	<.0010	<.0020	<.0020	<.0030	E.0054	<.0040	<.0050	<.0040	<.0020	E.0017	<.002	<.001
AUG												
17...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0018	<.002	<.001

08461300 RIO GRANDE BELOW FALCON DAM, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	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)
NOV												
18...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JAN												
12...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
MAY												
19...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JUN												
29...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JUL												
21...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
AUG												
17...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030

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)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-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)
NOV											
18...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JAN											
12...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY											
19...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUN											
29...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUL											
21...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
AUG											
17...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	--	<.0030

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-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
NOV											
18...	<.0050	E.0026	<.0070	<.0130	<.0020	<.0010	<.0020	101	103	96.6	877
JAN											
12...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	113	110	95.1	793
MAY											
19...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	101	--	94.5	934
JUN											
29...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	109	--	106	877
JUL											
21...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	102	--	95.3	943
AUG											
17...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	111	--	104	917

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08464700 RIO GRANDE AT FORT RINGGOLD, RIO GRANDE CITY, TX

LOCATION.--Lat 26°22'05", long 98°48'20", Starr County, Hydrologic Unit 13090001, at gaging station about 1 mi downstream from Rio Grande City, 3.9 mi downstream from mouth of Rio San Juan, and 1,014.3 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--174,362 mi^2, United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--
CHEMICAL DATA: Jan 1959 to current year.

COOPERATION.--Water sample and discharge for water year 1999 provided by International Boundary and Water Commission.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
21...	0845	561	747	7.7	23.3	160	76	48	8.6
NOV									
24...	0830	480	1100	8.1	23.0	260	150	71	19
JAN									
20...	0915	1170	1020	8.0	18.0	330	200	90	25
FEB									
18...	0900	1620	1050	7.7	20.0	270	160	76	21
MAR									
23...	0930	3670	1060	7.9	22.0	280	150	77	21
APR									
27...	0838	9000	1030	8.0	22.0	270	170	73	21
MAY									
19...	0920	2470	1100	7.2	23.0	250	140	66	21
JUN									
22...	0855	1060	1100	7.3	29.0	230	120	60	20
JUL									
20...	0850	710	1010	7.8	29.0	270	180	68	23
AUG									
25...	0923	262	1270	7.7	29.0	250	150	66	20
SEP									
21...	1030	988	825	8.1	28.5	200	98	53	16

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT									
21...	85	3	6.0	79	110	93	.74	9.7	407
NOV									
24...	120	3	6.2	110	190	150	.63	7.3	636
JAN									
20...	161	4	6.1	130	240	200	.55	6.5	810
FEB									
18...	109	3	6.7	110	190	140	.53	20	631
MAR									
23...	105	3	6.2	130	190	140	.51	8.6	627
APR									
27...	110	3	5.3	98	180	130	.56	9.8	594
MAY									
19...	121	3	5.1	110	200	150	.53	10	638
JUN									
22...	119	3	5.9	110	200	150	.57	10	632
JUL									
20...	152	4	5.3	88	250	190	.57	12	755
AUG									
25...	142	4	5.8	100	210	190	.56	13	712
SEP									
21...	85	3	5.8	100	140	100	.49	11	480

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08466300 RIO GRANDE NEAR LOS EBANOS, TX

LOCATION.--Lat 26°14'15", long 98°33'49", Hidalgo County, Hydrologic Unit 13090001, on Farm Road 886 at U.S. Border Port of Entry near Los Ebanos and at mile 204.37.

PERIOD OF RECORD.--
CHEMICAL DATA: Jun 1977 to current year.

REMARKS.--Water sample and discharge for water year 1999 provided by International Boundary and Water Commission.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
JAN									
20...	1200	260	1040	8.3	19.0	1200	1100	280	127
MAR									
16...	1400	1810	1070	8.1	20.0	270	150	75	20
MAY									
18...	1115	4560	1040	7.6	27.0	250	150	65	21
JUL									
26...	1145	410	1110	8.0	30.0	240	160	62	21
SEP									
21...	1115	322	939	8.2	28.8	200	120	50	18

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
JAN									
20...	1560	19	8.1	120	1800	1600	1.5	17	5410
MAR									
16...	105	3	5.9	120	190	140	.54	5.6	617
MAY									
18...	113	3	4.8	94	190	140	.55	9.8	597
JUL									
26...	123	3	5.5	85	210	160	.52	12	637
SEP									
21...	106	3	5.7	78	180	130	.53	11	546

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08469200 RIO GRANDE BELOW ANZALDUAS DAM, TX

LOCATION.--Lat 26°08'00", long 98°20'05", Hidalgo County, Hydrologic Unit 13090002, at gaging station 0.5 mi downstream from Anzalduas Dam, 12.2 mi from Hidalgo, and 1,077.1 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--176,112 mi^2, United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--
CHEMICAL DATA: Mar 1959 to current year.
PESTICIDE DATA: Oct 1967 to Jul 1972.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1977 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1990 to 1999. The standard error of estimate for dissolved solids is 7%, chloride is 8%, sulfate is 11% and for hardness is 6%. Regression equations for this station may be obtained from the U.S. Geological Survey District office upon request.

COOPERATION.--Water sample and discharge for 1999 water year provided by International Boundary and Water Commission. Records of daily mean discharge and specific conductance for water year 1999 are given in International Boundary and Water Commission Water Bulletin Nos. 68 and 69.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,810 microsiemens, Aug 27, 1998; minimum daily, 340 microsiemens, Sep 22, 1997.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,110 microsiemens, Nov 29-30; minimum, 350 microsiemens, Oct 21.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
JAN									
20...	1025	830	1380	8.2	19.0	260	130	73	19
MAR									
16...	1010	1850	1150	8.3	22.0	280	160	76	21
MAY									
18...	1000	2830	1060	8.0	27.5	250	150	67	21
JUL									
26...	1040	690	1310	8.0	30.0	220	130	59	18
AUG									
24...	1125	459	900	7.8	27.0	220	130	60	17
SEP									
21...	1010	717	1100	8.0	29.5	240	170	63	21

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
JAN									
20...	101	3	6.0	130	180	130	.56	7.1	593
MAR									
16...	116	3	5.9	120	210	150	.55	5.9	660
MAY									
18...	117	3	4.8	100	200	150	.57	10	629
JUL									
26...	108	3	5.6	92	180	140	.49	9.3	575
AUG									
24...	92	3	5.1	95	160	120	.53	12	524
SEP									
21...	122	3	5.9	78	200	150	.55	13	628

08469200 RIO GRANDE BELOW ANZALDUAS DAM, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1998	19386	854	508	26600	100	5410	170	9090	190
NOV.	1998	5479	1380	836	12370	190	2820	280	4190	300
DEC.	1998	11617	1400	850	26660	190	5970	290	9050	300
JAN.	1999	21898	1230	737	43560	160	9340	250	14830	270
FEB.	1999	25490	1140	682	46940	140	9860	230	16010	250
MAR.	1999	42641	1130	673	77490	140	16220	230	26430	250
APR.	1999	37747	1090	650	66260	140	13760	220	22610	240
MAY	1999	60509	1110	664	108500	140	22670	230	37020	250
JUNE	1999	43097	1160	692	80520	150	16980	240	27450	260
JULY	1999	19453	1300	783	41110	170	8960	270	13980	290
AUG.	1999	44921	924	548	66530	110	13310	190	22760	210
SEPT	1999	16708	1210	727	32790	160	7040	250	11160	270
TOTAL		348946	**	**	629300	**	132300	**	214600	**
WTD.AVG.		956	1120	668	**	140	**	230	**	250

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	540	610	2080	1250	1100	1110	1120	1060	1240	1300	1110	980
2	570	630	2090	1180	1130	1140	1020	1070	1260	1420	1050	1010
3	600	630	2050	1220	1160	1160	989	1060	1260	1590	970	1020
4	560	630	1800	1240	1190	1220	1000	1080	1210	1430	900	1060
5	530	610	1580	1430	1200	1200	1090	1070	1220	1250	880	1090
6	510	650	1600	1370	1160	1190	1170	1070	1240	1170	900	1140
7	530	---	1500	1370	1140	1120	1250	1080	1200	1060	930	1270
8	520	---	1440	1390	1110	1130	1380	1090	1140	1090	920	1420
9	500	910	1390	1450	1110	1110	1240	1080	1130	1100	930	1140
10	710	1470	1750	1320	1130	1140	1220	1100	1120	1090	920	1410
11	900	1240	1540	1280	1190	1180	1290	1100	1120	1120	890	1370
12	1070	1420	1510	1210	1150	1150	1240	1090	1130	1140	880	1300
13	1120	1480	1450	1260	1120	1130	1170	1140	1120	1140	910	1240
14	1210	1580	1420	1180	1140	1180	1140	1110	1080	1140	920	1170
15	1230	1720	1380	1180	1120	1160	1100	1080	1080	1150	930	1150
16	1160	1770	1370	1200	1100	1160	1080	1040	1100	1150	870	1140
17	1100	1670	1280	1280	1090	1130	1080	1100	1110	1220	870	1150
18	1110	1480	1270	1310	1070	1140	1070	1010	1110	1310	870	1170
19	1090	1440	1280	1340	1110	1110	1060	1100	1110	1350	880	1150
20	1150	1330	1260	1370	1180	1120	1070	1100	1140	1350	880	1130
21	350	1320	1260	1250	1190	1140	1060	1100	1080	1520	880	1170
22	420	1340	1270	1200	1210	1130	1070	1130	1160	1600	960	1170
23	410	1360	1270	1170	1170	1130	1080	1150	1150	1560	980	1290
24	500	1420	1310	1130	1160	1150	1060	1200	1260	1470	980	1460
25	430	1490	1250	1120	1140	1130	1080	1250	1280	1400	890	1640
26	430	1600	1240	1110	1130	1080	1090	1290	1270	1330	890	1730
27	450	1930	1220	1060	1120	1080	1070	1460	1330	1250	930	1550
28	470	2070	1190	1080	1100	1070	1080	1450	1360	1250	970	1270
29	510	2110	1180	1080	---	1080	1070	1400	1250	1300	960	1000
30	550	2110	1170	1080	---	1040	1070	1350	1200	1260	970	930
31	590	---	1180	1120	---	988	---	1300	---	1310	980	---
TOTAL	21820	---	44580	38230	31920	34998	33509	35710	35460	39820	28800	36720
MEAN	704	---	1440	1230	1140	1130	1120	1150	1180	1280	929	1220
MAX	1230	---	2090	1450	1210	1220	1380	1460	1360	1600	1110	1730
MIN	350	---	1170	1060	1070	988	989	1010	1080	1060	870	930

08470400 ARROYO COLORADO AT HARLINGEN, TX
(National stream-quality accounting network)

LOCATION.--Lat 26°10'24", long 97°42'01", Cameron County, Hydrologic Unit 13090002, on downstream side of northbound service road on U.S. Highways 83 & 77, about 18 mi from point of main floodway that divides into North Floodway and Arroyo Colorado.

DRAINAGE AREA.--182 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: Nov 1986 to current year.
BIOCHEMICAL DATA: Nov 1986 to current year.
RADIOCHEMICAL DATA: Oct 1995 to current year.
PESTICIDE DATA: Oct 1995 to current year.
SEDIMENT DATA: Oct 1995 to current year.

REMARKS.--Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1999 are given in International Boundary and Water Commission Water Bulletins Nos. 68 and 69. Since Sep 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
DEC												
02...	1700	1028	10	161	4050	7.8	24.0	62	9.4	114	830	620
JAN												
20...	0800	1028	10	178	4290	7.6	21.5	110	6.7	77	910	680
FEB												
18...	0930	1028	10	174	3970	7.5	19.5	100	8.1	90	840	620
MAR												
17...	1750	1028	10	181	4190	7.7	24.5	120	9.1	113	840	620
APR												
22...	0840	1028	10	182	3930	7.9	23.5	90	6.7	79	820	610
MAY												
12...	0950	1028	10	208	3680	7.7	27.0	170	6.3	80	750	550
JUN												
16...	0900	1028	10	214	3400	7.6	28.5	150	5.8	75	680	500
JUL												
07...	0840	1028	30	448	2100	7.7	28.0	220	5.4	69	390	270
AUG												
23...	1800	1028	10	98	3890	7.7	26.0	76	6.9	87	770	580
SEP												
14...	1300	1028	10	166	3980	8.0	29.0	48	8.5	112	760	540

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (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 DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
DEC												
02...	200	82	587	9	60	9.4	0	254	208	700	770	.77
JAN												
20...	220	86	630	9	60	12	0	276	226	760	810	.80
FEB												
18...	200	81	581	9	60	11	0	262	215	730	820	.77
MAR												
17...	200	82	580	9	60	11	0	271	222	740	830	.79
APR												
22...	200	74	513	8	57	12	0	248	203	660	740	.81
MAY												
12...	180	72	495	8	59	11	0	244	200	640	710	.84
JUN												
16...	160	65	456	8	59	11	0	224	184	600	640	.73
JUL												
07...	99	35	263	6	59	8.7	0	151	124	330	370	.60
AUG												
23...	190	71	526	8	60	11	0	229	188	660	740	.82
SEP												
14...	180	75	551	9	61	9.9	0	273	224	680	730	.84

08470400 ARROYO COLORADO AT HARLINGEN, TX--Continued
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WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
DEC												
02...	24	2610	2510	2.76	.079	2.83	<.020	3.9	--	--	.41	1.0
JAN												
20...	24	2790	2710	4.44	.210	4.65	.071	5.9	1.2	.50	.57	1.3
FEB												
18...	22	2700	2600	6.26	.130	6.39	.065	7.8	1.3	.54	.61	1.4
MAR												
17...	22	2740	2620	3.90	.147	4.04	.033	5.2	1.2	.51	.54	1.2
APR												
22...	22	2540	2370	3.86	.085	3.95	.022	5.4	1.4	.51	.53	1.5
MAY												
12...	23	2390	2280	4.03	.119	4.15	.037	5.6	1.4	.60	.63	1.4
JUN												
16...	22	2230	2100	3.65	.079	3.73	.035	4.9	1.2	.57	.61	1.2
JUL												
07...	16	1310	1220	2.95	.070	3.02	.044	5.4	2.3	.61	.65	2.3
AUG												
23...	23	2390	2350	2.68	.063	2.74	<.020	4.0	--	--	.55	1.3
SEP												
14...	24	2480	2400	2.72	.064	2.79	.013	4.1	1.3	.36	.37	1.3

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED 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												
02...	.672	.417	.335	1.0	4.0	2.0	135	311	99	--	--	6
JAN												
20...	.733	.446	.393	1.2	4.7	3.8	309	642	100	--	--	8
FEB												
18...	.696	.372	.349	1.1	4.4	2.6	277	590	99	--	--	7
MAR												
17...	.657	.268	.276	.85	5.2	2.3	300	614	99	--	<2.0	8
APR												
22...	.685	.335	.274	.84	5.2	1.6	322	655	100	--	--	9
MAY												
12...	.659	.290	.279	.86	5.1	4.2	336	599	99	5.2	<2.0	8
JUN												
16...	.793	.518	.419	1.3	3.9	3.3	124	214	96	--	--	10
JUL												
07...	1.01	.344	.278	.85	5.9	.60	791	654	99	1.5	<1.0	12
AUG												
23...	.682	.382	.349	1.1	8.0	1.4	132	499	99	--	--	8
SEP												
14...	.547	.275	.222	.68	4.1	2.0	42	93	97	--	--	10

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)
DEC												
02...	--	--	1510	--	--	--	--	<50	--	120	--	--
JAN												
20...	--	--	480	--	--	--	--	<30	--	130	--	--
FEB												
18...	--	--	1450	--	--	--	--	<30	--	130	--	--
MAR												
17...	80	<2.0	1400	<2.0	3.7	<2.0	3.9	<30	<2.0	120	4.2	20
APR												
22...	--	--	1320	--	--	--	--	<30	--	120	--	--
MAY												
12...	87	<2.0	1280	<2.0	<1.0	<2.0	3.7	<30	<2.0	100	3.8	22
JUN												
16...	--	--	1160	--	--	--	--	<30	--	100	--	--
JUL												
07...	60	<1.0	707	<1.0	<1.0	<1.0	3.0	<30	<1.0	57	1.0	12
AUG												
23...	--	--	1400	--	--	--	--	<30	--	110	--	--
SEP												
14...	--	--	1350	--	--	--	--	<30	--	110	--	--

08470400 ARROYO COLORADO AT HARLINGEN, TX--Continued
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WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	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)
DEC												
02...	--	2	--	4160	32	--	--	<.0030	<.0020	<.002	<.0020	.019
JAN												
20...	--	2	--	4590	35	--	--	<.0030	<.0020	<.002	<.0020	.109
FEB												
18...	--	2	--	4230	34	--	--	<.0030	<.0020	.008	<.0020	3.28
MAR												
17...	5.0	2	<2.0	4230	31	5.5	10	<.0030	<.0020	<.002	<.0020	1.20
APR												
22...	--	1	--	3760	35	--	--	<.0030	<.0020	<.010	<.0020	1.20
MAY												
12...	4.0	<1	<2.0	3680	33	3.7	9.1	<.0030	<.0020	<.002	<.0020	2.09
JUN												
16...	--	2	--	3340	28	--	--	<.0030	<.0020	<.002	<.0020	.152
JUL												
07...	1.9	1	<1.0	1850	23	2.6	4.0	<.0030	<.0020	<.007	<.0020	.960
AUG												
23...	--	2	--	3700	33	--	--	<.0030	<.0020	<.002	<.0020	.423
SEP												
14...	--	2	--	3860	<30	--	--	<.0030	<.0020	<.002	<.0020	.282

DATE	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	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)
DEC												
02...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	E.0013	E.0113	.070	<.001
JAN												
20...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0290	.026	<.001
FEB												
18...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	E.0013	E.235	.007	<.001
MAR												
17...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	E.0039	E.0964	.006	<.001
APR												
22...	<.0010	<.0020	<.0020	<.0030	E.0688	<.0040	<.0050	<.0040	<.0020	E.232	.006	<.001
MAY												
12...	E.0915	<.0020	<.0020	<.0030	E.149	<.0040	<.0050	<.0040	<.0020	E.297	.006	<.001
JUN												
16...	E.492	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0294	.020	<.001
JUL												
07...	E1.23	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0150	<.0020	E.125	.023	<.001
AUG												
23...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0578	.036	<.001
SEP												
14...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0674	.020	<.001

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	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)
DEC												
02...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.041	<.004	<.0040	<.0030
JAN												
20...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.018	<.004	<.0040	<.0030
FEB												
18...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0125	<.005	.011	<.004	<.0040	<.0030
MAR												
17...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.004	<.004	<.0040	<.0030
APR												
22...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.013	<.004	<.0040	<.0030
MAY												
12...	<.0170	<.0075	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.005	<.004	<.0040	<.0030
JUN												
16...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	.063	<.002	<.004	<.0040	<.0030
JUL												
07...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	.0250	.074	E.002	<.004	<.0040	<.0030
AUG												
23...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.004	<.004	<.0040	<.0030
SEP												
14...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.007	<.004	<.0040	<.0030

08470400 ARROYO COLORADO AT HARLINGEN, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-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)
DEC											
02...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JAN											
20...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
FEB											
18...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAR											
17...	E.0013	<.004	<.0060	<.0040	.0124	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR											
22...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY											
12...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUN											
16...	<.0060	<.004	.0847	<.0040	<.0040	<.0020	E.0102	<.0070	<.0040	<.0130	<.0030
JUL											
07...	<.0060	<.004	.373	<.0040	<.0040	<.0020	E.0060	<.0070	<.0040	<.0130	<.0030
AUG											
23...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP											
14...	E.0024	<.004	.0186	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

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-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
DEC											
02...	.0186	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	119	110	93.7	862
JAN											
20...	.0177	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	100	104	87.3	869
FEB											
18...	.0330	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	98.5	107	88.8	900
MAR											
17...	.0438	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	87.4	140	95.6	800
APR											
22...	.0354	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	87.8	110	91.9	961
MAY											
12...	.0527	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	104	112	94.9	917
JUN											
16...	.0250	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	109	--	99.3	917
JUL											
07...	.146	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	137	--	103	819
AUG											
23...	.0214	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	112	--	102	854
SEP											
14...	.0180	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	103	--	107	877

08475000 RIO GRANDE NEAR BROWNSVILLE, TX

(National stream-quality accounting network)

LOCATION.--Lat 25°52'35", long 97°27'15", Cameron County, Hydrologic Unit 13090002, at International Boundary and Water Commission gaging station, 1,000 ft downstream from El Jardin pumping plant, 6.8 mi below International Bridge between Brownsville and Matamoros, Tamps., Mex., and 48.8 mi above the Gulf of Mexico.

DRAINAGE AREA.--176,333 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: Jan 1932, Mar 1943 to Feb 1944, Feb 1966 to current year.
BIOCHEMICAL DATA: Oct 1974 to current year.
RADIOCHEMICAL DATA: Oct 1995 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 Sep 1983.
WATER TEMPERATURE: Oct 1966 to Sep 1983.
SUSPENDED SEDIMENT DISCHARGE: Feb 1966 to Sep 1983.

REMARKS.--The flow is controlled largely by releases from Falcon Reservoir. Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1999 are given in International Boundary and Water Commission Water Bulletins Nos. 68 and 69. Since Sep 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,130 microsiemens, May 29, 1972; minimum daily, 337 microsiemens, Sep 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 1998 TO SEPTEMBER 1999

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
DEC												
17...	1400	1028	10	55	1730	8.7	18.0	16	8.7	91	450	240
JAN												
19...	1520	1028	10	1.3	1840	8.2	21.5	25	9.1	104	420	240
FEB												
17...	1650	1028	10	15	1430	8.3	21.0	15	11.8	134	360	190
MAY												
11...	1630	1028	30	18	1230	8.2	30.0	30	7.3	97	300	170
AUG												
24...	0900	1028	10	20	1340	7.7	27.0	22	4.8	61	260	140
SEP												
14...	1540	1028	10	94	1030	7.9	31.5	1.7	6.1	84	250	110

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (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 DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
DEC												
17...	120	33	184	4	47	7.1	13	219	202	290	280	.40
JAN												
19...	110	33	202	4	51	6.8	0	217	178	320	280	.58
FEB												
17...	99	27	153	4	48	5.9	8	192	171	260	210	.57
MAY												
11...	82	24	129	3	47	6.4	0	166	136	220	170	.62
AUG												
24...	72	20	112	3	47	6.3	0	146	119	190	140	.56
SEP												
14...	65	20	106	3	48	5.5	0	164	135	170	130	.55

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
DEC												
17...	16	1100	1060	.512	.013	.525	.010	1.5	.96	.37	.38	.97
JAN												
19...	8.9	1140	1070	.728	.012	.740	.015	1.6	.86	.37	.38	.88
FEB												
17...	9.9	908	869	.027	.007	.034	.007	.78	.74	.42	.43	.75
MAY												
11...	13	774	736	--	<.001	<.005	.012	--	.70	.36	.37	.71
AUG												
24...	14	628	633	--	.006	<.005	.009	--	.35	.32	.33	.36
SEP												
14...	11	654	596	--	<.010	<.050	<.020	--	--	--	.28	.45

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED 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												
17...	.140	.050	.046	.14	3.8	1.7	14	93	92	--	--	7
JAN												
19...	.172	.077	.063	.19	V4.6	1.4	.27	76	98	1.3	<1.0	4
FEB												
17...	.130	.058	.040	.12	V4.1	1.3	.65	16	97	--	--	5
MAY												
11...	.158	.080	.061	.19	4.2	2.0	1.7	35	96	1.6	<1.0	5
AUG												
24...	.146	.146	.131	.40	3.9	.50	2.1	39	99	--	--	5
SEP												
14...	.142	.105	.088	.27	3.9	2.0	5.8	23	100	--	--	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)
DEC												
17...	--	--	474	--	--	--	--	<10	--	45	--	--
JAN												
19...	142	<1.0	470	<1.0	2.0	<1.0	1.7	<10	<1.0	53	5.3	7.7
FEB												
17...	--	--	342	--	--	--	--	<10	--	45	--	--
MAY												
11...	109	<1.0	272	<1.0	<1.0	<1.0	1.7	<10	<1.0	44	1.5	7.3
AUG												
24...	--	--	247	--	--	--	--	<10	--	37	--	--
SEP												
14...	--	--	234	--	--	--	--	<10	--	32	--	--

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	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)
DEC												
17...	--	1	--	1820	E6	--	--	<.0030	<.0020	<.002	<.0020	.005
JAN												
19...	1.7	<1	<1.0	1810	E6	1.6	3.2	<.0030	<.0020	<.002	<.0020	.037
FEB												
17...	--	<1	--	1530	E5	--	--	<.0030	<.0020	<.002	<.0020	.036
MAY												
11...	2.0	<1	<1.0	1350	<10	<1.0	2.5	<.0030	<.0020	<.002	<.0020	.017
AUG												
24...	--	<1	--	1150	<10	--	--	<.0030	<.0020	<.002	<.0020	.014
SEP												
14...	--	1	--	1090	5	--	--	<.0030	<.0020	<.002	<.0020	.010

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	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)
DEC												
17...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.038	<.001
JAN												
19...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.007	<.001
FEB												
17...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0036	.007	<.001
MAY												
11...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.006	<.001
AUG												
24...	--	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0050	.004	<.001
SEP												
14...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.009	<.001

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	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)
DEC												
17...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JAN												
19...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
FEB												
17...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.016	<.004	<.0040	<.0030
MAY												
11...	<.0170	<.0075	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
AUG												
24...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.075	<.0040	<.0030
SEP												
14...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030

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)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-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)
DEC											
17...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JAN											
19...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
FEB											
17...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY											
11...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
AUG											
24...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP											
14...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0500	<.0030

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-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
DEC											
17...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	108	109	95.3	877
JAN											
19...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	101	111	88.3	847
FEB											
17...	E.0038	E.0054	<.0070	<.0130	<.0020	<.0010	<.0020	98.3	103	87.4	877
MAY											
11...	E.0058	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	102	95.1	84.5	892
AUG											
24...	<.0100	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	119	--	100	847
SEP											
14...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	109	--	106	900

The U.S. Geological Survey collects limited streamflow data at sites other than continuous stream-gaging stations because the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage of those events. The data collected for special reasons are called measurements at miscellaneous sites.

Streamflow data collected at partial-record stations where water-quality data other than observations of water temperature are not obtained are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations; the second is a table of annual maximum stage and (or) discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low and high flows are given in a third table. Discharge measurements and water-quality data collected at partial-record stations are presented in downstream order in the section of this report entitled "Gaging-station records."

Low-flow partial-record stations

Measurements of streamflow at low-flow partial-record stations that are not published in the gaging-station section are given in the following table. Most of the measurements of low flow were made during periods when streamflow was sustained primarily by ground-water discharge. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will indicate the low-flow potential of the stream. The years listed in the column headed "Period of record" identifies the water years in which measurements were made at the same or at practically the same site.

Discharge measurements made at low-flow partial-record station during water year 1999

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Guadalupe River Basin				
08166140	Guadalupe River above Bear Creek at Kerrville, Tex.	Lat 30º04'10", long 99º11'42", Kerr County, 600 ft downstream from Goat Creek, 900 ft upstream from Bear Creek and Bear Creek Crossing, and 2.4 mi east of intersection of State Highways 27 and 39 in Ingram.	494	1978-86✣ 1995-99	10-07-98 12-09-98 02-11-99 04-07-99 06-10-99 08-12-99	175 121 96.6 99.8 79.5 65.8
08168000	Hueco Springs near New Braunfels, Tex.	Lat 29º45'33", long 98º08'23", 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.	--	1944-99	10-02-98 12-12-98 02-08-99 04-08-99 06-11-99 08-16-99	37.0 84.7 74.4 54.2 34.9 25.6
08177818	San Antonio Springs at San Antonio, Tex.	Lat 29º27'56", long 98º28'04", Bexar County, just below Hildebrand Ave. in San Antonio.	--	1951-52, 1959-62, 1972, 1974-77, 1979-99	11-18-98 12-17-98 01-20-99 02-24-99 03-25-99 05-25-99 07-02-99 08-23-99 09-30-99	107 95.8 75.3 33.9 23.3 7.33 14.0 0 0
08178090	San Pedro Springs at San Antonio, Tex.	Lat 29º26'42", long 98º30'06", Bexar County, at San Pedro Park in San Antonio.	--	1933-35, 1951-52, 1958-61, 1966, 1971, 1974-77, 1979-99	11-19-98 12-17-98 01-20-99 02-25-99 03-25-99 05-25-99 07-02-99 08-23-99 09-27-99	18.0 15.6 14.6 9.32 10.2 5.17 6.52 2.57 2.16
		Nueces River Basin				
08204000	Leona River Springflow near Uvalde Tex.	Lat 29º09'15", long 99º44'35", 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✣ 1966-99	10-08-98 12-03-98 01-26-99 03-22-99 05-17-99 07-14-99 08-30-99	31.9 42.5 39.5 37.2 39.8 38.9 37.9

See footnote at end of table.

Discharge measurements made at low-flow partial-record station during water year 1999--Continued

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Rio Grande Basin				
08425500	Phantom Lake Spring near Toyahvale, Tex.	Lat 30°56'01", long 103°50'43", Jeff Davis County, 375 ft downstream from source of spring, 3.5 mi southwest of Toyahvale, and 7.0 mi southwest of Balmorhea.	--	1931-33✞ 1942-66✞ 1967-99	10-27-98 01-07-99 03-09-99 05-11-99 07-28-99 09-15-99	0.05 0.04 0.004 0.07 3.63 0.14
08427000	Giffin Springs at Toyahvale, Tex.	Lat 30°56'51", long 103°47'19", Reeves County, 2,000 ft northwest of post office in Toyahvale.	--	1919, 1922-23, 1925, 1932-33✞ 1941-86, 1988-99	10-27-98 01-07-99 03-09-99 05-11-99 07-28-99 09-15-99	3.92 3.92 4.21 4.05 4.05 4.03
08456300	Las Moras Springs at Brackettville, Tex. 1/	Lat 29°18'33", long 100°25'13", Kinney County, in springflow pool at Brackettville, 160 ft south of U.S. Highway 90, and 1,550 ft upstream from bridge on Brackettville-Fort Clark Road.	--	1896, 1899- 1900, 1902, 1904-06, 1910, 1912, 1925, 1928, 1951-99	10-13-98 11-10-98 12-08-98 01-12-99 02-08-99 03-09-99 04-13-99 05-11-99 06-08-99 07-14-99 08-10-99 09-14-99	39.5 43.6 40.5 40.3 38.0 26.9 27.5 35.8 30.7 28.4 25.8 22.9

✞ Operated as a continuous-record station.

1/ 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 1999

Station name and number	Location	Period of record	Water Year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
Guadalupe River Basin								
Guadalupe River at New Braunfels, Tex. 08169500	Lat 29°41'52", long 98°06'23", Comal County, Comal Mills in New Braunfels and 0.4 mi upstream from IH-35. Drainage area is 1,652 mi^2.	1898, 1902, 1915-27✞ 1974-99	10-17-98	a38.54	i222000	10-17-98	a38.54	i222000
San Antonio River at Navarro St., San Antonio, Tex. 08177900	Lat 29°25'50", long 98°29'24", Bexar County, at bridge on Navarro Street in San Antonio. Drainage area is unknown. (Discontinued)	1973-99	10-17-98	*643.72	--	10-17-98	*643.72	--
San Antonio River at San Antonio, Tex. 08178000	Lat 29°24'34", long 98°29'41", Bexar County, on left bank 193 ft downstream from South Alamo Street Bridge in San Antonio, 2.1 mi upstream from San Pedro Creek, and 230.6 mi upstream from mouth. Drainage area is 41.8 mi^2.	1895-1906, 1915-29✞ 1939-97✞ 1998-99	10-17-98	a16.5	6,610	10-17-98	a16.5	6,610
San Pedro Creek at Santa Rosa St., San Antonio, Tex. 08178100	Lat 29°25'51", long 98°29'49", Bexar County, at bridge on Santa Rosa Street in San Antonio. Drainage area is unknown. (Discontinued)	1973-99	10-17-98	*639.48	--	07-16-90	*648.38	--
Martinez Creek at Fredericksburg Rd., San Antonio, Tex. 08178350	Lat 29°27'22", long 98°31'04", Bexar County, at bridge on Fredericksburg Road in San Antonio. Drainage area is unknown. (Discontinued)	1973-99	10-17-98	*685.46	--	10-17-98	*685.46	--
Nueces River Basin								
Rutledge Hollow at 7th Street, Poteet, Tex. 08207220	Lat 29°02'07", long 98°34'18", Atascosa County, in city of Poteet at 7th Street, and 2.0 mi above Atascosa River. Drainage area is 9.74 mi^2.	1979-99	06-27-99	*420.86	--	07-17-90	*424.89	--
Atascosa River at U.S. Highway 281, Pleasanton, Tex. 08207300	Lat 28°57'44", long 98°28'51", Atascosa County, at bridge on U.S. Highway 281 in Pleasanton. Drainage area is unknown.	1973-99	10-21-98	*346.32	--	06-28-93	*352.84	--
San Fernando Creek Basin								
Tranquitas Creek at Kingsville, Tex. 08212300	Lat 27°31'33", long 97°52'02", Kleberg County, at bridge on U.S. Highway 77 Business Route in Kingsville, 4.9 mi upstream from San Fernando Creek, and 5.9 mi downstream from Tranquitas Dam. Drainage area is 48.5 mi^2.	1965-82, 1984-90, 1992-99	08-24-99	3.89	--	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.

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table:

Discharge measurements made at miscellaneous sites during water year 1999

Station number	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		Rio Grande Basin				
Alamito Creek nr Presidio, Tex. 08374000	Rio Grande	Lat 29º31'25", long 104º17'15", 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	08-25-99 09-16-99	0.58 0.52
Terlingua Creek nr Terlingua, Tex. 08374500	Rio Grande	Lat 29º11'50", long 103º36'20", 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	08-25-99 09-16-99	2.10 2.37
Devils River at Pafford Crossing nr Comstock, Tex. 08449400	Rio Grande	Lat 29º40'35", long 101º00'00", 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	06-30-99 09-10-99	323 230
Mud Springs 08454800 1/	Mud Creek	Lat 29º27'10", long 100º37'30", Kinney County, on Mays Ranch about 16 mi northwest of Brackettville.	--	1939-41, 1952-53, 1962, 1965-99	10-13-98 11-10-98 12-08-98 01-12-99 02-08-99 03-09-99 04-13-99 05-11-99 06-08-99 07-14-99 08-10-99	18.0 19.5 21.0 22.2 25.0 23.9 23.1 23.8 24.1 23.0 20.6
		Measurements not published for 1997 water year.			10-08-96 11-12-96 12-10-96 01-14-97 02-11-97 03-12-97 04-08-97 05-05-97 06-10-97 07-08-97 08-12-97 09-09-97	5.2 6.5 12.0 13.4 14.5 14.8 14.5 14.6 14.4 16.7 17.2 15.5
Pinto Springs 08454890 1/	Pinto Creek	Lat 29º24'10", long 100º27'15", Kinney County, on C.C. Belcher Ranch 7.5 mi northwest of Bracketville. **Corrected date on measurements.** (Discontinued)	--	1939-41, 1952-53, 1965-97	10-08-96 11-12-96 12-10-96	0 2.7 4.3

† Operated as a continuous-record station.

1/ Measurements furnished by International Boundary and Water Commission.

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