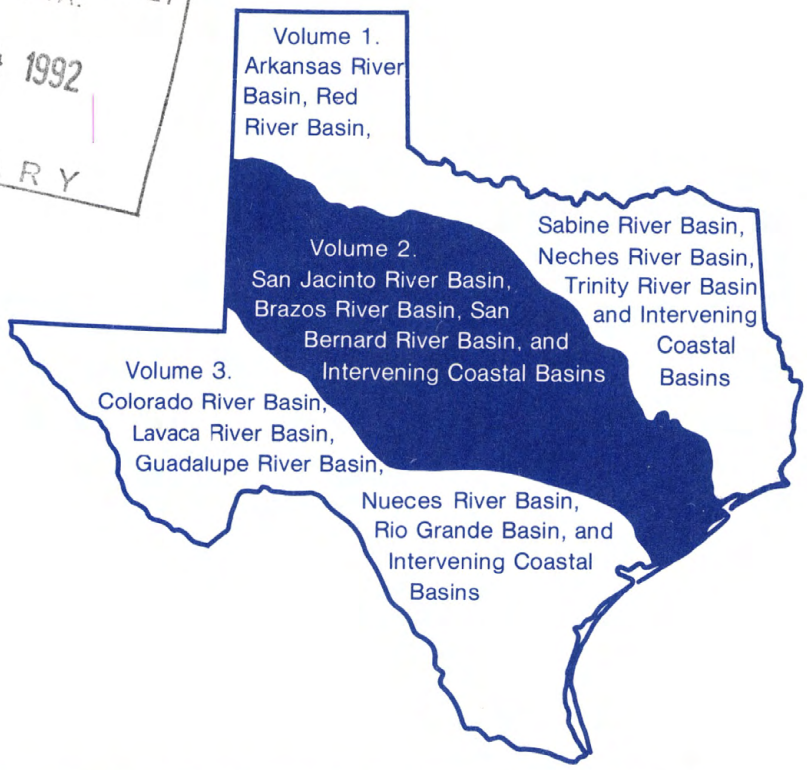
Water Resources Data
Texas
Water Year 1991

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



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX–91–2
Prepared in cooperation with the State of Texas
and with other agencies

CALENDAR FOR WATER YEAR 1991

1990

OCTOBER

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1991

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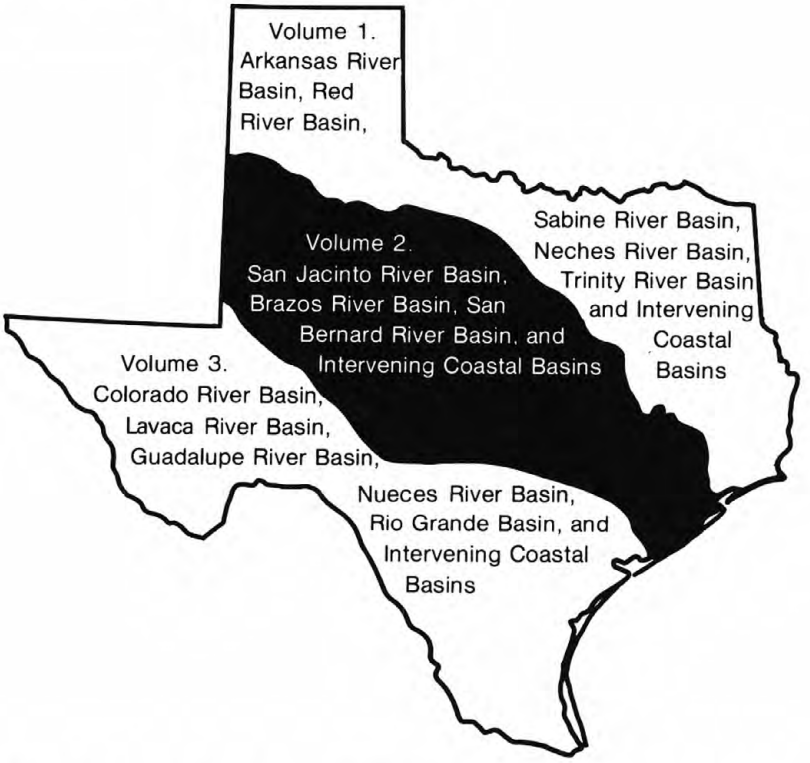
Water Resources Data
Texas
Water Year 1991

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

by H.D. Buckner and W.J. Shelby



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX–91–2
Prepared in cooperation with the State of Texas
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For additional information write to:
District Chief, Water Resources Division
U.S. Geological Survey
8011A Cameron Rd.
Austin, Texas 78753

1991

PREFACE

This edition of the annual hydrologic data report of Texas is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface-water collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water providing the hydrologic information needed by Federal, State, and local agencies, and the private sector for developing and managing land and water resources in Texas are contained in 4 volumes:

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

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

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

Volume 4. Ground-Water Data

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

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William E. Reeves
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This report was prepared in cooperation with the State of Texas and other agencies under the supervision of Richard O. Hawkinson, District Chief.

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H. D. Buckner and W. J. Shelby

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8011 Cameron Road, Bldg. 1
Austin, TX 78753

13. Type of Report & Period Covered
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15. Supplementary Notes
Prepared in cooperation with Federal, State, and local agencies.

16. Abstract (limit: 200 words)

Water-resources data for the 1991 water year for Texas are presented in four volumes, and consist of records of stage, discharge, and water quality of streams and canals; and stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground-water wells. Volume 2 contains records for water discharge at 94 gaging stations; stage only at 14 gaging stations; stage and contents at 20 lakes and reservoirs; water quality at 53 gaging stations; and data for 32 partial-record stations. Also included are lists of discontinued surface-water discharge or stage-only stations and discontinued surface-water-quality stations; crest-stage and flood-hydrograph partial-record stations, reconnaissance partial-record stations, and low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements. Records for a few pertinent stations in bordering States also are included. 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.

17. Document Analysis a. Descriptors

*Texas, *Hydrologic data, *Surface water, *Water quality, Flow rate, Gaging Stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperature, Sampling sites, Water levels, Water analyses

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

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(See ANSI-Z39.18) *See Instructions on Reverse* OPTIONAL FORM 272 (4-77) (Formerly NTIS-35) Department of Commerce

CONTENTS

ILLUSTRATION

TABLES

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

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

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

The following continiuous-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 crest-stage 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 back side of the title page of this report.

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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Lake Conroe Outflow Weir near Conroe (d)	08067610	445	1974
			1977-89
Caney Creek near Dobbin (d)	08067700	40.40	1963-65
Cypress Creek at Stubner Airline Road near Westffield (d)	08068900*	248	1982-87
West Fork San Jacinto River near Humble (d)	08069500	1,741	1929-54
Peach Creek at Spendora (d)	08071000	117	1944-77
San Jacinto River near Huffman (d)	08071500	2,800	1937-53
Cole Creek at Deihl Road at Houston (d)	08074150*	7.50	1964-86
Brickhouse Gully at Costa Rica Street at Houston (d)	08074250*	11.4	1964-81
			1984-85
Buffalo Bayou at 69th Street, Houston (e)	08074700	476	1985-86
Highland Bayou at Hitchcock (d)	08077700	N/A	1981-82
Oyster Creek near Angleton (d)	08079000	171	1945-80
North Fork Double Mountain Fork Brazos River at Lubbock (d)	08079500	5,300	1940-49
Double Mountain Fork Brazos River near Rotan (d)	08080000	8,536	1949-51
McDonald Creek near Post (d)	08080540	103	1966-78
Running Water Draw at Plainview (d)	08080700	1,291	1939-53
			1957-78
Duck Creek near Girard (d)	08080950	431	1965-89
Salt Fork Brazos River near Peacock (d)	08081000	4,619	1950-51
			1965-86
Croton Creek near Jayton (d)	08081200	290	1959-86
Salt Croton Creek near Aspermont (d)	08081500	64.30	1957-77
Stinking Creek near Aspermont (d)	08082100	88.80	1966-83
North Croton Creek near Knox City (d)	08082180	251	1965-86
Brazos River near Graham (d)	08083000	16,830	1916-20
Clear Fork Brazos River at Hawley (d)	08083240	1,416	1968-89
Mulberry Creek near Hawley (d)	08083245	205	1968-89
Elm Creek near Abilene (d)	08083300	133	1964-79
Little Elm Creek near Abilene (d)	08083400	39.10	1964-79
Cat Claw Creek at Abilene (d)	08083420	13	1971-79
Elm Creek at Abilene (d)	08083430	422	1980-83
Cedar Creek at Abilene	08083470	119	1971-84
Paint Creek near Haskell (d)	08085000	914	1950-51
Clear Fork Brazos River at Crystall Falls, Tx (d)	08086000		1922-29
Hubbard Creek near Sedwick (d)	08086015	128	1964-66
Deep Creek at Moran (d)	08086050	228	1963-75
Hubbard Creek near Albany (d)	08086100	454	1962-75
Salt Prong Hubbard Creek at U.S. 380 near Moran (d)	08086120	61	1964-68
North Fork Hubbard Creek near Albany (d)	08086150	39.3	1963-90
Salt Prong Hubbard Creek near Albany (d)	08086200	115	1962-63
Snailum Creek near Albany (d)	08086210	22.90	1964-66
Battle Creek near Moran	08086235	108	1967-68
Pecan Creek near Eolian (d)	08086260	26.40	1967-75
Hubbard Creek near Breckenridge (d)	08086500	1,089	1955-86
Clear Fork Brazos River at Eliasville (d)	08087300	5,697	1915-20
			1924-25
			1928-51
			1962-82
Salt Creek at Olney (d)	08088100	11.80	1958-77
Salt Creek near Newcastle (d)	08088200	120	1958-60
Briar Creek near Graham (d)	08088300	24.20	1958-89
Big Cedar Creek near Ivan (d)	08088450	97	1964-89

Station name	Station number	Drainage area (mi²)	Period of record (water years)
Palo Pinto Creek near Santo (d)	08090500	573	1925
			1951-76
Cobb Creek near Abbott (d)	08093400	12.40	1966-79
North Bosque River at Stephenville (d)	08093700	95.90	1958-73
Green Creek near Alexander (d)	08094500	45.40	1958-73
South Bosque River near Speegleville (d)	08095500	386	1924-30
Bosque River near Waco (d)	08095600	1,656	1960-82
Cow Bayou at Mooreville (d)	08097000	83.50	1958-75
Brazos River near Marlin (d)	08097500	30,211	1939-51
Deer Creek at Chilton (d)	08098000	84.50	1934-36
Little Pond Creek near Burlington (d)	08098300	23	1963-82
Cowhouse Creek near Kileen (d)	08101500	667	1924-25
			1939-42
Nolan Creek at Belton (d)	08102600	112	1974-82
Lampasas River at Youngsport (d)	08104000	1,240	1924-80
Lampasas River near Belton (d)	08104100	1,321	1963-89
Salado Creek below Salado Springs (d)	08104310*	N/A	1985-87
San Gabriel River at Georgetown	08105000	405	1924-25
			1934-73
			1984-87
Berry Creek at State Hwy. 971 near Georgetown	08105200*	N/A	1985-87
San Gabriel River near Weir (d)	08105300*	563	1976-90
San Gabriel River near Circleville (d)	08105400	599	1924-34
			1967-76
Brushy Creek near Rockdale (d)	08106300	505	1968-80
Big Elm Creek near Temple (d)	08107000	74.70	1934-36
Big Elm Creek near Buckholts (d)	08107500	171	1934-36
North Elm Creek near Ben Arnold	08108000	32.20	1935-36
North Elm Creek near Cameron (d)	08108200	44.80	1963-73
Navasota River near Groesbeck (d)	08110400	311	1965-79
Navasota River near College Station (d)	08111010	1,809	1977-85
Burton Creek at Villa Maria Road at Bryan (d)	08111025	1.33	1968-70
Hudson Creek near Bryan (d)	08111050	1.94	1968-70
Brazos River Authority Canal A near Fulshear (d)	08112500	N/A	1932-54
			1958-73
Richmond Irrigation Co. Canal near Richmond (d)	08113500	N/A	1932-54
			1956-78
Brazos River near Juliff (d)	08114500	45,084	1949-69
Seabourne Creek near Rosenberg (d)	08114900	5.78	1968-72
Fairchild Creek near Needville (d)	08115500	26.20	1947-54
Big Creek near Guy (d)	08116000	116	1947-50
Dry Creek near Rosenberg	08116400	8.65	1959-79
Dry Creek below Rosenberg (d)	08116500	12.20	1947-50
Big Boggy Creek near Wadsworth (d)	08117900	10.30	1970-77
East Matagorda Bay near Matagorda (e)	08117985	N/A	1973-82

The following stations were discontinued as continuous-record surface-water-quality stations prior to the 1991 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)
Panther Branch near Spring	08068450	34.50	S	1974-76
West Fork San Jacinto River near Humble	08069500	1,741	SC, T	1945-46
San Jacinto River near Huffman	08071500	2,800	SC	1945-54
			T	1949-54
Buffalo Bayou at West Belt Drive at Houston	08073600	307	SC, T	1979-81
Chocolate Bayou near Alvin	08078000	87.70	SC, T	1978-81
Double Mountain Fork Brazos River near Rotan	08080000	8,536	SC, T	1949-51
McDonald Creek near Post	08080540	103	SC, T	1949-51
				1964-78
Salt Fork Brazos River near Peacock	08081000	4,619	SC, T	1949-51
				1964-86
Croton Creek near Jayton	08081200	290	SC	1960-86
			T	1960-70
				1083-86
Salt Croton Creek near Aspermont	08081500	64.30	SC	1970-77
			T	1972-74
Salt Fork Brazos River near Aspermont	08082000	5,130	SC, T	1948-51
				1956-82
Stinking Creek near Aspermont	08082100	88.80	SC	1965-68
			T	1949-50
				1965-69
North Croton Creek near Knox City	08082180	251	SC, T	1965-86
Clear Fork Brazos River at Hawley	08083240	1,416	SC, T	1967-79
				1981-84
Clear Fork Brazos River at Nugent	08084000	2,199	SC, T	1948-53
California Creek near Stamford	08084800	478	SC, T	1962-79
Paint Creek near Haskell	08085000	914	SC, T	1949-51
Clear Fork Brazos River at Fort Griffin	08085500	3,988	SC, T, S	1949-51
			SC, T	1967-79
				1981-84
Hubbard Creek near Sedwick	08086015	128	SC, T	1963-66
Deep Creek at Moran	08086050	228	SC, T	1962-75
Hubbard Creek near Albany	08086100	454	SC, T	1962-75
Salt Prong Hubbard Creek at U.S. Hwy. 380 near Albany	08086120	61	SC, T	1963-68
North Fork Hubbard Creek near Albany	08086150	39.30	SC, T	1962-90
Salt Prong Hubbard Creek near Albany	08086200	115	SC, T	1962-63
Snailum Creek near Albany	08086210	22.90	SC, T	1963-66
Battle Creek near Moran	08086235	108	SC, T	1966-68
Pecan Creek near Eolian	08086260	26.40	SC, T	1962-75
Big Sandy Creek near Breckenridge	08086300	288	SC, T	1962-76
Hubbard Creek near Breckenridge	08086500	1,089	SC, T	1955-75
Clear Fork Brazos River at Eliasville	08087300	5,697	SC, T	1961-82
Brazos River near South Bend	08088000	22,673	SC	1942-48
			SC, T	1977-81
Salt Creek at Olney	08088100	11.80	SC, T	1958-60
Salt Creek near Newcastle	08088200	120	SC, T	1958-60
Brazos River near Aquilla	08093100	27,224	SC	1978-79
			T	1963-64
Aquilla Creek above Aquilla	08093360	255	SC, T	1979-83
Aquilla Creek near Aquilla	08093500	308	SC, T	1965-66
				1967-82
Leon River near Eastland	08098500	235	SC, T	1950-53
Leon River near Belton	08102500	3,542	T	1957-72
South Fork Rocky Creek near Briggs	08103900	33.30	S	1963-65

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Lampasas River at Youngsport	08104000	1,240	SC, T	1961-64
Little River near Little River	08104500	5,228	SC, T	1964-73
				1979-82
San Gabriel River near Weir	08105300	536	T	1976-82
San Gabriel River at Laneport	08105700	738	T	1976-82
Brazos River at State Hwy. 21 near Bryan	08108700	N/A	SC, T	1961-65
Brazos River near Bryan	08109000	39,515	SC, T	1965-66
Brazos River near College Station	08109500	39,599	SC, T	1966-84
Yegua Creek near Somerville	08110000	1,009	SC, T	1961-67
Navasota River above Groesbeck	08110325	239	SC, T	1967-89
Navasota River near Groesbeck	08110400	311	SC, T	1967-78
Navasota River near Easterly	08110500	968	SC	1941-42
				1947
Navasota River near Bryan	08111000	1,454	SC, T	1958-81
			S	1975-81
Brazos River near Rosharon	08116650	45,399	SC, T	1968-80
Brazos River at Harris Reservoir near Angleton	08116700	N/A	SC, Cl	1962-77
Brazos River at Brazoria Reservoir near Brazoria	08117200	N/A	SC, Cl	1962-77
San Bernard River near Boling	08117500	727	SC, T	1978-81

WATER RESOURCES DATA - TEXAS, 1991

VOLUME 2

SAN JACINTO RIVER BASIN, BRAZOS RIVER BASIN, SAN BERNARD RIVER BASIN, AND INTERVENING COASTAL BASINS

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with Federal, State, and City agencies, obtains a large amount of data pertaining to the water resources of Texas each water year. Such data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in four volumes of this report series entitled "Water Resources Data - Texas."

This report series includes records of stage, discharge, and water quality of streams and canals; stage, contents, and water quality of lakes and reservoirs. Volume 2 contains records for water discharge at 94 gaging stations; stage only at 14 gaging stations; stage and contents at 20 lakes and reservoirs; and water quality at 53 gaging stations. Also included are data for 32 partial-record stations. The data in this report represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating City, State, and Federal 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 l975 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.

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 Geological Survey for all States. These official 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-91-2." 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. Beginning with the 1990 water year, all water-data reports will also be available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, will be reproduced on a single CD-ROM disc.

Additional information, including the current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (512) 873-3000. A limited number of CD-ROM discs will be available for sale by the Books & Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

COOPERATION

Federal agencies that assisted the Geological Survey in the collection of data in this report in the form of funds or services in 1991 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 Geological Survey are:

Texas Water Development Board, M.R. Arnold II, Executive Administrator; the cities of Abilene, Arlington, Austin, Carrollton, Corpus Christi, Dallas, Fort Worth, Gainesville, Garland, Graham, Houston, Lubbock, Nacogdoches, Runaway Bay, San Angelo, San Antonio, and Wichita Falls; Bexar, Medina, and Atascosa Counties Water Control and Improvement District No. 1; Brazos River Authority; Coastal Industrial Water Authority; Colorado River Municipal Water District; Dallas Public Works Department; Dallas Utilities Water Department; Edwards Underground Water District; Franklin County Water District; Galveston County; Greenbelt Municipal and Industrial Water Authority; Guadalupe-Blanco River Authority; Harris County Flood Control District; Lavaca-Navidad River Authority; Lower Colorado River Authority; Lower Neches Valley Authority; North Central Texas Municipal Water Authority; Northeast Texas Municipal Water District; North Texas Municipal Water District; 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 City Water Board; San Antonio River Authority; San Jacinto River Authority; Tarrant County Water Control and Improvement District No. 1; Texas Water Commission; Texas Water Development Board; Titus County Fresh Water Supply District No. 1; Trinity River Authority; Upper Guadalupe River Authority; Upper Neches River Municipal Water Authority; West Central Texas Municipal Water District; and Wichita County Water Improvement District No. 2.

HYDROLOGIC CONDITIONS

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

Precipitation distribution for water year 1991 did not follow the long-term precipitation pattern. Greater than normal precipitation occurred over the entire State during the current water year. The distribution was fairly uniform. Precipitation departures from normal (1951-80) for the current water year ranged from a high of 135 percent of normal in the Low Rolling Plains climatic division to a low of 107 percent of normal in Southern Texas and the Lower Rio Grande Valley divisions. In East Texas and the Upper Coast divisions, precipitation was 134 percent of normal. In the Trans Pecos in west Texas, precipitation was 133 percent of normal during the current water year. The remaining four climatic divisions (High Plains, North Central, Edwards Plateau, and South Central) had precipitation departures from 115 to 119 percent above normal for water year 1991.

Precipitation totals for the10 climatic divisions (fig. 1) for water year 1991 ranged from a high of 61.64 inches in the Upper Coast division to a low of 20.38 inches in the High Plains division. The East Texas division had the second highest precipitation total of 59.86 inches, followed by south Central with 39.60 inches, North Central with 38.34 inches, the Low Rolling Plains with 30.80 inches, the Trans Pecos with 28.77 inches, the Edwards Plateau with 27.38 inches, the Lower Rio Grande Valley with 27.03 inches, and Southern Texas with 24.95 inches for the water year.

All the greatest individual annual rainfall amounts for the current water year occurred in East or Southeast Texas. The greatest maximum monthly precipitation occurred in April at Carthage with a total monthly rainfall of 17.95 inches. The greatest monthly precipitation totals for 10 months of the water year were recorded in East or Southeast Texas.

Streamflow during the current water year did not follow normal precipitation patterns. Streamflow was above normal (within the highest 25 percent) in East and Southeast Texas and in the Red River basin in extreme North Central Texas. Streamflow was near normal in all other basins.

Conservation storage in 75 selected reservoirs throughout the State, with a combined conservation capacity of 34,570,000 acre-feet, increased from 85 percent of conservation capacity at the end of water year 1990, to 87 percent at the end of water year 1991. Records from the individual reservoirs indicate that storage increased in 41, decreased in 25, and remained the same in 9.

The area for which water-resources data are presented in volume 2 extends from the New Mexico border in northwestern Texas, southeastward across the central part of the State, to the upper middle Texas Gulf Coast. Normal annual precipitation ranges from less than 17 inches in the westernmost part of the area to nearly 50 inches along the Gulf Coast. Annual runoff ranges from less than 1.0 inch in the west to more than 15 inches in places along the Gulf Coast. The area described in volume 2 and the location of selected streamflow and water-quality stations in the area are shown in figure 2.

Streamflow

Streamflow was above normal in the San Jacinto River basin and normal in the Brazos River basin for water year 1991. No outstanding storms occurred in the area described in volume 2 during the water year. Four of six selected streamflow stations in the area had above normal streamflow, one station had near normal streamflow, and one station had below normal streamflow. A comparison of discharge for water year 1991 with streamflow for the period of record at six selected streamflow stations (fig. 2), for which data are included in volume 2, is presented in table 1.

At the four other long-term hydrologic index stations in the State, streamflow during water year 1991 was normal to above normal. Monthly mean discharges and median of the long-term monthly means for water years 1951-80 for the four hydrologic index stations in the State are shown in figure 3. Streamflow at the

Table 1.—Streamflow at six selected stations for water year 1991

Station no. and name	Discharge during 1991 water year (cubic feet per second)			Discharge during period of record (cubic feet per second)		
	Max.	Min.	Avg.	Max.	Min.	Avg.
San Jacinto River basin						
08074500 Whiteoak Bayou at Houston, Tex.	9,310	24	165	18,300	0	91.3 (1937-91)
Brazos River basin						
08080500 Double Mountain Fork Brazos River near Aspermont, Tex. [1]	23,100	0	146	91,400	0	158 (1925-34, 1941-91)
08082500 Brazos River at Seymour, Tex.	23,300	15	461	95,400	0	375 (1925-91)
08095000 North Bosque River near Clifton, Tex. [2]	6,440	4.0	102	92,800	0	173 (1968-91)
08111000 Navasota River near Bryan, Tex.	23,200	0	809	38,200	0	578 (1961-91)
08114000 Brazos River at Richmond, Tex. [1]	51,400	846	7,913	123,000	35	7,184 (1941-91)

[1] National Stream Quality Accounting Network (NASQAN) site.
[2] Hydrologic index station.

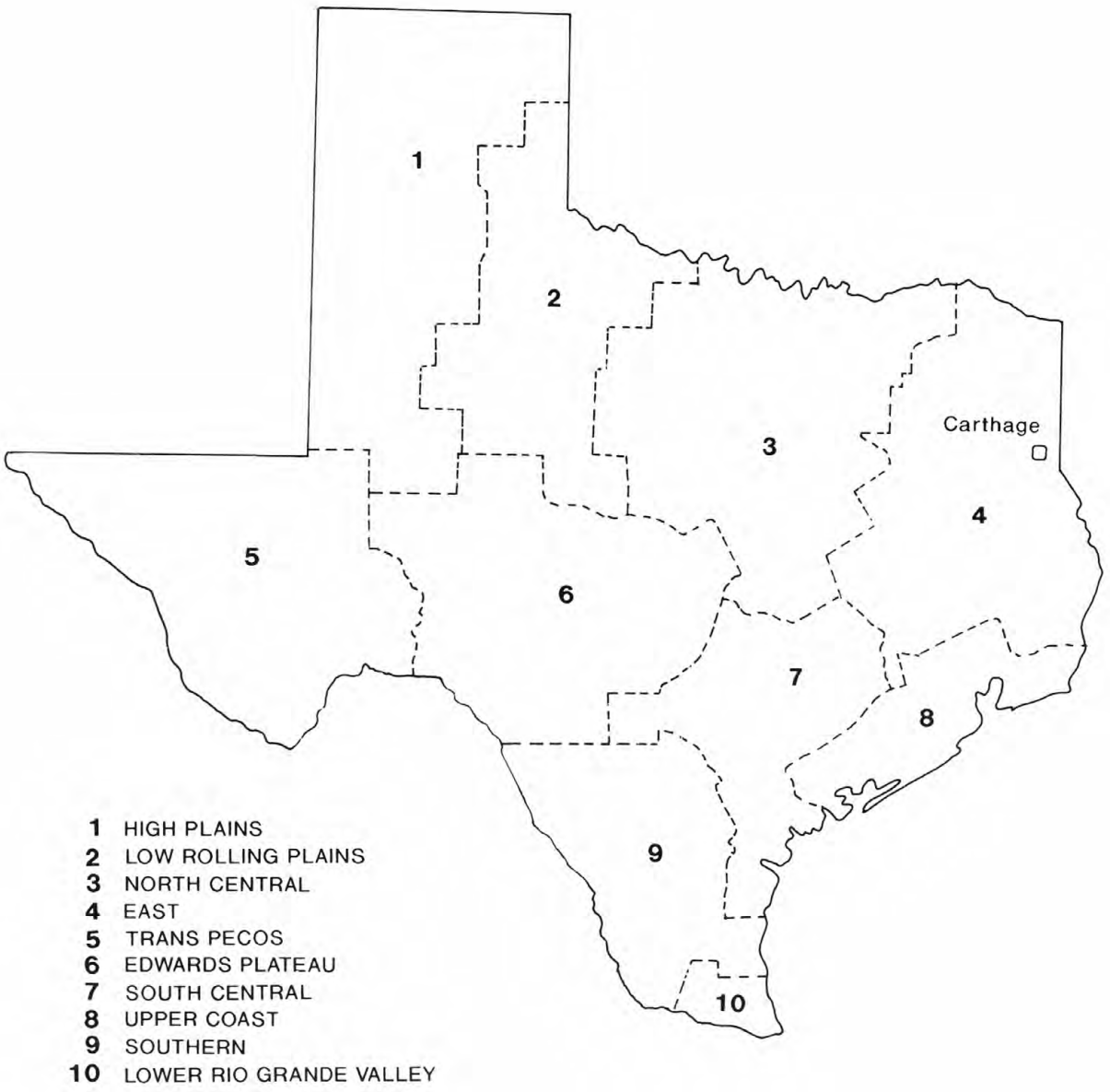


Figure 1.--Ten climatic divisions of the State (Modified from U.S. Department of Commerce, National Oceanic and Atmospheric Administration, 1991, Climatological data, Texas, 1991: National Climatic Data Center, v. 96, no. 9).

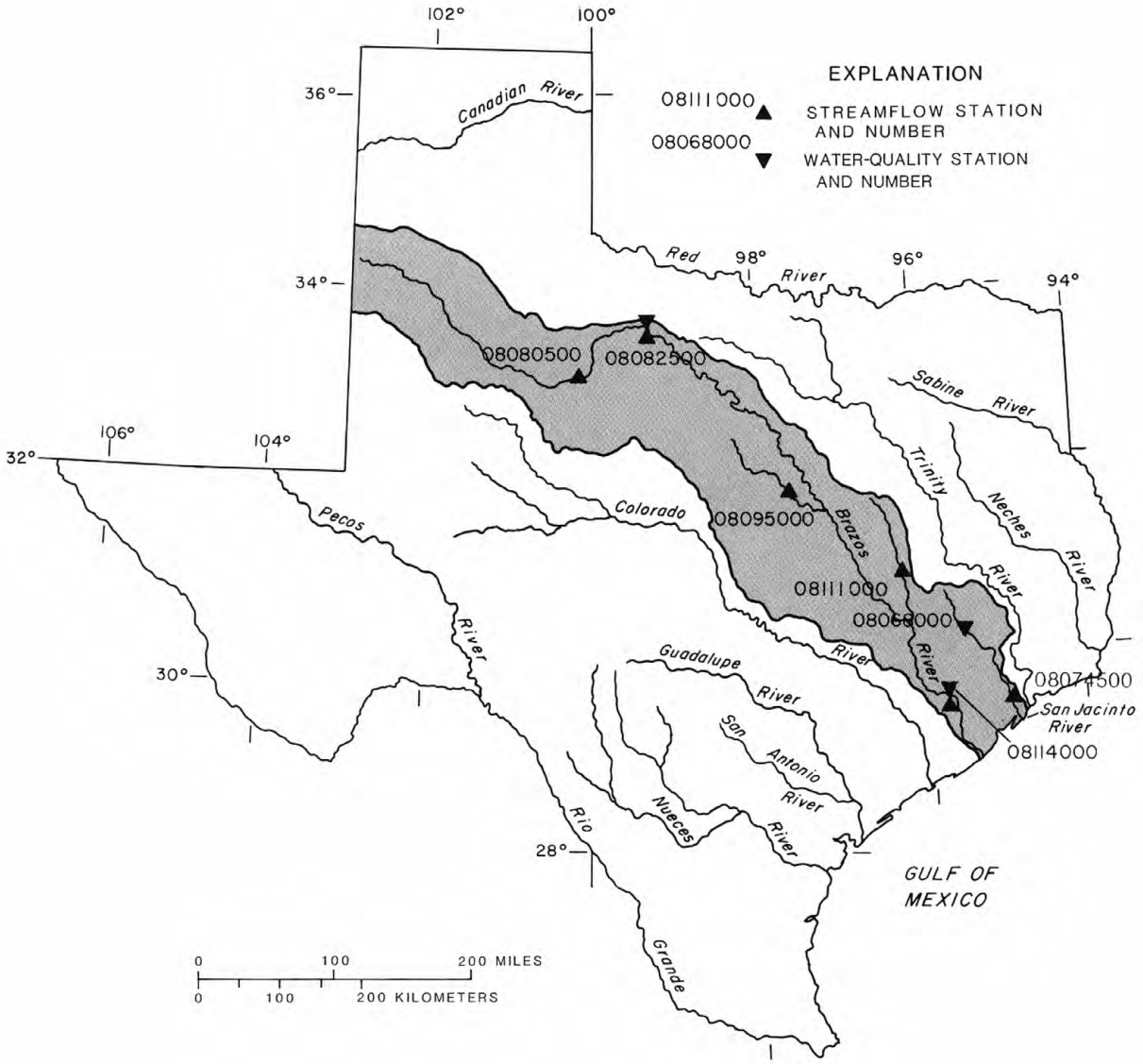


Figure 2.--Area of Texas covered by volume 2 (shaded) and location of selected streamflow and water-quality stations in volume 2.

hydrologic index station North Bosque River near Clifton was normal from October through May, and July, and above normal (within the highest 25 percent of record) during June, August, and September. For the Neches River near Rockland, streamflow was above normal for the entire water year. The North Concho River near Carlsbad had above normal streamflow from November through March, then normal the remainder of the year. The Guadalupe River near Spring Branch had normal streamflow for the entire water year.

Conservation storage in 21 selected reservoirs in this area of the State, with a total combined conservation capacity of 3,921,000 acre-feet, increased from 94 percent of capacity at the end of September 1990 to 98 percent of capacity at the end of September 1991. Records from these reservoirs indicate that storage increased in 12, decreased in 4, and remained the same in 5 during the water year.

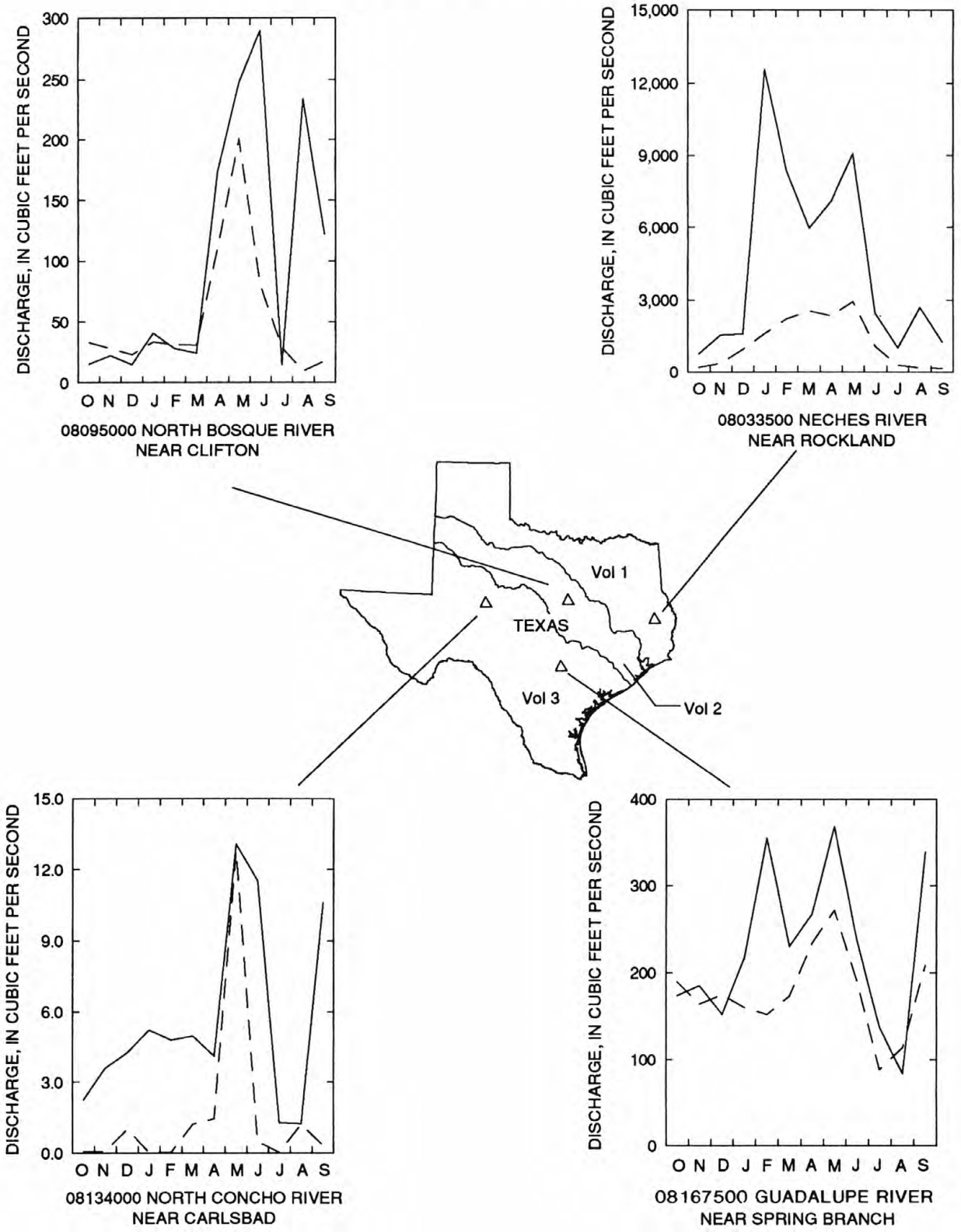
Water Quality

Dissolved-solids concentrations in most streams in the State are inversely related to streamflow. During years when precipitation and runoff are less than normal, streamflow commonly is much 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 concentration may remain relatively constant despite substantial fluctuations in precipitation and runoff.

Records of discharge-weighted-average concentrations of dissolved solids for water year 1991 are compared with those for the water years 1987-91 for selected long-term daily or continuous-record water-quality stations (fig. 2) in the San Jacinto and Brazos River basins. Results are shown in table 2.

Table 2.—Comparison of records of discharge-weighted-average concentrations of dissolved solids for the 1991 water year

Station no. and name	Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
	1991	1987-91	1991	1987-91
San Jacinto River basin				
08070200 East Fork San Jacinto River near New Caney, Tex.	315	260	76	79
Brazos River basin				
08082500 Brazos River at Seymour, Tex.	461	411	3,220	2,910
08114000 Brazos River at Richmond, Tex.	7,913	7,365	294	409



EXPLANATION

——— MONTHLY MEAN DISCHARGE FOR 1991 WATER YEAR

— — · MEDIAN OF MONTHLY MEAN DISCHARGE FOR 1951-80 WATER YEARS

Figure 3.--Comparison of monthly mean discharges at four long-term hydrologic index gaging stations during the 1991 water year with median of the monthly mean discharges for 1951-80 water years.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

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

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.

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1991 water year that began October 1, 1990, and ended September 30, 1991. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

Downstream Order Numbering

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for

each station, such as 08057000, which appears just to the left of the station name, includes the 2-digit Part number "08" plus the 6-digit downstream-order number "057000." The Part number designates the major river basin; for example, Part "08" is the Western Gulf of Mexico basin.

Records of Stage and Water Discharge

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

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

Data Collection and Computation

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

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adopted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

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

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

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

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

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

Data Presentation

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; 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 National Geodetic Vertical Datum of 1929 (see glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.—All periods of estimated daily discharge 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 Geological Survey by a cooperating organization are identified here.

AVERAGE DISCHARGE.—The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for those stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record, if the median differs from the average given by more than 10 percent.

EXTREMES FOR PERIOD OF RECORD.—Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

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.

EXTREMES FOR CURRENT YEAR.—Extremes given here are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

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

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

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 is usually expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN."), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches 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.

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 punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently.

Arrangement of Records

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

On site Measurements and Sample Collection

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

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

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

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

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the Texas District Office. The address is given on the back of the title page of this report.

Water Temperature

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

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

Sediment

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

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

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

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

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the 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 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 (1991) 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 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.

Remark Codes

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

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)

Remark codes -- Continued

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

ACCESS TO WATSTORE DATA

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

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

General inquiries about WATSTORE may be directed to:

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

In addition to providing direct access to WATSTORE, data can be provided in various machine-readable formats on magnetic tape or 5-1/4 inch floppy disk; and, as noted in the introduction, on CD-ROM discs. All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories , will be reproduced on a single CD-ROM disc. A limited number of CD-ROM discs will be available for sale by the Books & Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

DEFINITION OF TERMS

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

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

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

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

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

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

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 24 hours at 35 °C. In the laboratory these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 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 plus or minus 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

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

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

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

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

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the

living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

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

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

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

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

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

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

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

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

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

Cubic-foot-per-second day [$(ft^3/s)/d$] is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,445 cubic meters.

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

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

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

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

Dissolved refers to that material in a representative water sample which passes through a 0.45 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 0.492 to reflect the change.

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

$$\bar{d} = - \sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_1}{n}$$

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

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

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

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

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 ($CaCO_3$).

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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

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

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

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

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

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

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are: (1) To obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for; (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs; (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics; and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

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

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and ad-

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

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

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

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

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

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

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

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

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

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

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

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

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

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

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

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

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

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

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements

within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the 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)] or phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

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

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

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

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

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

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

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

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

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

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

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

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

Solute is any substance that is dissolved in water.

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

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

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

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

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

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

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

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

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

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

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

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In

addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

Water year in 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, 1991, is called the "water year 1991."

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

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

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

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

08067600 LAKE CONROE NEAR CONROE, TX

LOCATION.--Lat 30°21'30", long 95°33'39", Montgomery County, Hydrologic Unit 12040101, at service outlet tower at Conroe Dam on West Fork San Jacinto River, 140 ft upstream from centerline of dam, and 7.4 mi west of Conroe.

DRAINAGE AREA.--445 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by an earthfill dam 11,300 ft long, including a controlled spillway. The dam was completed Sept. 1, 1972, and deliberate impoundment began Jan. 9, 1973. Water is used for municipal and industrial purposes in the Houston metropolitan area. In addition, a small diversion is made for cooling purposes at the Gulf State Utilities generating plant on Lewis Creek Reservoir near Conroe. During the current year, 2,480 acre-ft was diverted to Lewis Creek Reservoir for that purpose. A spillway with five 40 x 30-foot tainter gates is located near the center of dam. Low-flow releases are made through a separate multi-gated inlet tower. The tower has three gated openings and one uncontrolled opening. It is connected to a stilling basin and a concrete weir by a 14-foot-diameter conduit through the dam. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	212.0	
Design flood	205.5	532,000
Top of tainter gates	202.5	462,600
Top of conservation pool (uncontrolled tower outlet)	201.0	430,300
Crest of spillway (sill of tainter gates)	173.0	64,960
Lowest gated outlet (invert)	144.5	300

COOPERATION.--The capacity table, furnished by the San Jacinto River Authority, is based on Geological Survey maps dated 1958-59.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 512,000 acre-ft May 22, 1983 (elevation, 204.66 ft); minimum since normal operating level was reached, 336,900 acre-ft Jan. 11, 1989 (elevation, 196.17 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 462,200 acre-ft Jan. 19 at 1300 to Jan. 20 at 0400 hours (elevation, 202.48 ft); minimum, 389,900 acre-ft Dec. 26 (elevation, 199.01 ft).

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

199.0	389,700	202.0	451,600
200.0	409,600	203.0	473,700
201.0	430,300		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	401300	393100	393500	394700	430700	433500	408800	436000	428000	427600	421400	416200
2	400100	392700	393500	401100	430700	434500	408600	432700	428000	427600	420800	422000
3	399500	392500	393700	402900	430700	432400	408800	433300	410900	427400	420800	424700
4	399700	393900	392900	404700	436700	431300	432400	434100	410500	427800	419500	425700
5	399500	392700	392300	405700	440300	430900	437700	432800	409600	428400	419500	426100
6	398700	392300	392900	408200	442000	431300	438400	430500	430100	427800	419500	426300
7	398700	392100	392500	408000	440700	431800	437700	430100	430500	427600	419300	426800
8	398300	396700	391900	407800	438400	432000	435000	430600	430500	427600	418900	427800
9	400700	395500	391700	410700	436000	431500	433500	430300	430700	427400	418700	429400
10	398700	395100	391700	419300	434300	430900	431300	430200	430300	427200	418500	429400
11	398100	395100	391300	425700	432800	430900	431100	430200	429800	426800	417900	429400
12	397700	395100	391100	427000	431300	431500	431300	430300	428200	426300	417300	429600
13	397100	394900	391700	427200	431500	431500	432000	430500	428400	426100	416900	429200
14	397100	394700	391300	437300	431800	431300	440900	431600	428800	425700	416900	429200
15	396500	394500	391900	448200	431500	432600	445400	431200	430900	425500	417900	429200
16	396300	394500	391700	450800	431100	433000	443700	434600	431300	424900	417500	429200
17	397300	394500	391700	448200	431300	432800	439400	433800	431100	424700	417500	429200
18	396700	394300	392100	458200	432000	431800	435600	432500	429800	423700	417500	431100
19	395600	394100	391700	462200	440900	430700	434100	431700	430100	423200	417500	430300
20	395100	393700	391700	460400	442600	431100	431500	430900	429000	422600	416900	429200
21	397100	393700	392700	454300	442200	430900	409400	430600	428600	422600	416400	428800
22	395900	394700	392300	448400	440300	431800	431500	430200	428600	422800	416400	428200
23	395700	394900	391700	443500	437700	431800	430900	430300	428600	422600	416900	428200
24	395500	394700	390300	440100	434500	431500	430500	430100	429200	421800	416700	429000
25	394900	394300	390100	437500	432800	431300	430500	429800	428800	421800	416400	427800
26	394300	393900	394100	434100	431300	431300	433700	430000	428800	421200	416000	427400
27	394300	395300	394300	432000	430900	432400	434700	429900	428600	420600	415600	427200
28	394100	395300	394100	431300	431800	432800	435600	429300	427600	420800	415200	426800
29	393700	394300	394100	431300	---	432600	436700	428800	427600	420800	414800	426300
30	393700	393700	395700	431100	---	431300	437300	428600	427200	422000	414600	426100
31	393300	---	394900	430700	---	430300	---	428400	---	422000	415000	---
MAX	401300	396700	395700	462200	442600	434500	445400	436000	431300	428400	421400	431100
MIN	393300	392100	390100	394700	430700	430300	408600	428400	409600	420600	414600	416200
(†)	198.18	199.20	199.26	201.02	201.07	201.00	201.33	200.91	200.85	200.60	200.26	200.80
(ϕ)	-8200	+400	+1200	+35800	+1100	-1500	+7000	-8900	-1200	-5200	-7000	+11100

CAL YR 1990 MAX 444100 MIN 390100 (ϕ) -7200
WTR YR 1991 MAX 462200 MIN 390100 (ϕ) +24600

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08067600 LAKE CONROE NEAR CONROE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: September 1973 to current year.

302127095335501 - LAKE CONROE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	RESER-VOIR STORAGE (AC-FT)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
FEB											
13...	1010	431000	1.00	245	8.5	13.0	1.15	10.8	103	87	8
13...	1012	--	10.0	250	8.5	13.0	--	10.6	101	--	--
13...	1014	--	20.0	250	8.4	12.5	--	10.4	98	--	--
13...	1016	--	30.0	260	7.9	11.0	--	8.8	80	--	--
13...	1018	--	40.0	265	7.1	10.5	--	7.3	66	--	--
13...	1020	--	52.0	265	7.1	10.5	--	7.6	68	93	9
APR											
01...	1048	409000	1.00	230	8.5	20.0	1.46	10.2	110	81	9
01...	1050	--	10.0	230	8.3	18.5	--	9.6	101	--	--
01...	1052	--	20.0	230	7.9	18.0	--	8.2	85	--	--
01...	1054	--	30.0	230	7.8	17.5	--	7.8	80	--	--
01...	1056	--	40.0	230	7.4	17.0	--	5.4	55	--	--
01...	1058	--	50.0	235	7.3	16.0	--	1.2	12	84	8
JUL											
31...	1057	422000	1.00	220	8.6	31.5	0.82	8.5	115	81	11
31...	1059	--	10.0	225	8.4	30.5	--	7.5	100	--	--
31...	1101	--	25.0	225	7.2	29.0	--	2.0	26	--	--
31...	1103	--	30.0	240	7.1	27.0	--	0.6	8	--	--
31...	1105	--	40.0	250	7.0	23.5	--	0	0	--	--
31...	1107	--	50.0	275	6.9	22.0	--	0	0	92	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
FEB											
13...	31	2.3	14	0.7	3.6	79	15	21	0.10	2.8	137
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	33	2.5	14	0.6	3.6	84	12	23	0.20	4.0	143
APR											
01...	29	2.1	12	0.6	3.2	72	6.4	21	0.20	2.4	119
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	30	2.1	13	0.6	3.3	76	6.6	20	0.20	4.2	125
JUL											
31...	29	2.1	12	0.6	2.9	70	5.0	21	0.20	5.1	119
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	33	2.4	12	0.5	3.1	98	0.90	20	0.20	11	147

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
FEB										
13...	0.090	0.010	0.100	0.040	0.56	0.60	0.020	0.020	21	10
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	0.180	0.020	0.200	0.060	0.74	0.80	0.030	0.030	40	70
13...	--	--	--	--	--	--	--	--	--	--
13...	0.180	0.020	0.200	0.150	0.75	0.90	0.030	0.030	12	170
APR										
01...	0.056	0.020	0.076	0.030	0.67	0.70	0.020	0.010	5	3
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	0.090	0.020	0.110	0.040	0.26	0.30	0.020	0.010	10	20
01...	--	--	--	--	--	--	--	--	--	--
01...	0.200	0.020	0.220	0.050	0.65	0.70	0.060	0.030	7	280
JUL										
31...	--	<0.010	<0.050	0.020	0.78	0.80	0.030	<0.010	5	1
31...	--	--	--	--	--	--	--	--	--	--
31...	--	<0.010	<0.050	<0.010	--	0.70	0.020	<0.010	<10	60
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	<0.010	<0.050	2.20	0.80	3.0	0.370	0.330	2100	3500

08067600 LAKE CONROE NEAR CONROE, TX--Continued

302132095333701 - LAKE CONROE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB								
13...	1020	1.00	245	8.4	13.0	1.24	9.6	92
13...	1022	10.0	245	8.4	13.0	--	9.6	92
13...	1024	20.0	250	8.3	12.5	--	9.2	87
13...	1026	30.0	260	7.8	11.0	--	8.8	80
13...	1028	40.0	265	7.6	10.5	--	8.0	72
13...	1030	53.0	265	7.5	10.5	--	7.8	70
APR								
01...	1115	1.00	230	8.4	20.0	1.54	10.0	108
01...	1117	10.0	230	8.4	18.5	--	9.8	103
01...	1119	20.0	230	7.9	18.0	--	8.2	85
01...	1121	30.0	230	7.7	17.5	--	7.7	79
01...	1123	40.0	235	7.4	17.0	--	4.6	47
01...	1125	55.0	235	7.3	16.5	--	1.2	12
JUL								
31...	1115	1.00	220	8.7	31.5	0.87	8.6	116
31...	1117	10.0	225	8.5	31.0	--	8.1	109
31...	1119	20.0	225	7.5	29.5	--	4.1	54
31...	1121	30.0	240	7.2	27.5	--	4.1	52
31...	1123	40.0	250	7.0	23.5	--	3.1	36
31...	1125	50.0	275	6.9	22.0	--	2.0	23
31...	1127	58.0	285	7.1	22.0	--	0.2	2

302245095365301 - LAKE CONROE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB								
13...	1118	1.00	245	8.3	13.0	0.98	10.0	95
13...	1120	10.0	245	8.2	12.5	--	9.6	91
13...	1122	20.0	250	7.8	11.5	--	8.8	81
13...	1124	29.0	250	7.8	11.5	--	8.8	81
APR								
01...	1026	1.00	230	8.2	19.0	1.14	9.6	102
01...	1028	10.0	230	8.0	18.0	--	9.3	97
01...	1030	20.0	235	7.6	17.5	--	7.6	78
01...	1032	27.0	235	7.4	17.5	--	5.8	60
JUL								
31...	1026	1.00	220	8.5	31.0	0.43	7.7	103
31...	1028	10.0	220	8.1	30.5	--	6.5	86
31...	1030	20.0	230	7.2	29.5	--	2.5	33
31...	1032	29.0	230	7.0	29.0	--	0.1	1

302323095341201 - LAKE CONROE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB								
13...	1200	1.00	235	8.7	14.0	1.19	12.2	119
13...	1202	10.0	235	8.6	14.0	--	12.0	117
13...	1204	20.0	235	8.6	13.5	--	12.0	116
13...	1206	30.0	240	8.4	13.5	--	11.2	108
13...	1208	40.0	260	7.6	11.0	--	8.6	79
13...	1210	50.0	260	7.5	11.0	--	8.6	79
APR								
01...	1148	1.00	225	8.2	20.5	1.25	9.5	104
01...	1150	10.0	225	8.0	18.0	--	8.8	92
01...	1152	20.0	230	7.8	17.5	--	7.8	80
01...	1154	30.0	230	7.7	17.5	--	7.3	75
01...	1156	48.0	230	7.3	17.0	--	3.0	31
JUL								
31...	1230	1.00	230	8.6	30.5	0.79	8.2	109
31...	1232	10.0	230	8.5	30.0	--	7.6	100
31...	1234	20.0	230	7.8	29.5	--	5.2	68
31...	1236	30.0	250	7.2	27.0	--	1.5	19
31...	1238	40.0	260	7.0	24.0	--	0.1	1
31...	1240	50.0	270	7.0	23.5	--	0.1	1

08067600 LAKE CONROE NEAR CONROE, TX--Continued

302320095334001 - LAKE CONROE SITE CL

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB								
13...	1220	1.00	240	8.6	14.5	1.27	12.2	120
13...	1222	10.0	240	8.6	14.5	--	12.2	120
13...	1224	20.0	240	8.4	13.5	--	12.0	116
13...	1226	30.0	240	8.3	13.5	--	11.8	114
13...	1228	44.0	260	7.4	11.0	--	8.6	78
APR								
01...	1212	1.00	230	8.3	19.5	1.55	9.7	104
01...	1214	10.0	230	8.3	18.0	--	9.6	100
01...	1216	20.0	230	8.0	18.0	--	8.7	91
01...	1218	30.0	230	7.8	17.5	--	7.7	79
01...	1220	42.0	230	7.7	17.5	--	7.1	73
JUL								
31...	1300	1.00	230	8.7	32.0	0.70	8.6	117
31...	1302	10.0	230	8.5	30.5	--	7.2	96
31...	1304	20.0	230	8.1	30.0	--	6.2	82
31...	1306	30.0	250	7.2	26.0	--	0.1	1
31...	1308	42.0	260	7.1	24.0	--	0.1	1

302448095374101 - LAKE CONROE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB								
13...	0927	1.00	225	8.3	14.5	0.99	10.6	104
13...	0929	10.0	240	7.8	12.0	--	9.5	88
13...	0931	20.0	250	7.6	11.0	--	8.7	79
13...	0933	30.0	250	7.5	11.5	--	8.8	81
APR								
01...	1234	1.00	225	8.3	20.0	1.18	9.9	107
01...	1236	10.0	225	8.2	18.5	--	9.4	99
01...	1238	20.0	230	7.6	18.0	--	6.6	69
01...	1240	27.0	230	7.4	18.0	--	4.2	44
JUL								
31...	1348	1.00	225	8.6	32.5	0.67	7.8	107
31...	1350	10.0	230	7.9	30.0	--	5.1	67
31...	1352	20.0	230	7.6	30.0	--	4.2	55
31...	1354	28.0	245	7.4	29.0	--	0.2	3

302607095360901 - LAKE CONROE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)
FEB											
13...	1250	1.00	215	8.2	13.5	0.91	11.8	114	76	7	27
13...	1252	10.0	215	8.1	13.5	--	11.6	112	--	--	--
13...	1254	20.0	215	8.0	13.0	--	11.2	107	--	--	--
13...	1256	36.0	230	7.5	12.0	--	9.0	84	79	7	28
APR											
01...	1254	1.00	220	8.4	20.0	1.13	9.9	107	79	10	28
01...	1256	10.0	225	8.1	18.0	--	9.0	94	--	--	--
01...	1258	20.0	225	7.7	18.0	--	7.5	78	--	--	--
01...	1300	30.0	225	7.5	17.5	--	6.8	70	--	--	--
01...	1302	40.0	230	7.2	17.0	--	2.5	26	81	10	29
JUL											
31...	1414	1.00	225	8.8	32.0	0.73	8.9	122	83	14	30
31...	1416	10.0	230	8.2	30.0	--	5.3	70	--	--	--
31...	1418	20.0	230	7.6	30.0	--	3.7	49	--	--	--
31...	1420	30.0	255	7.3	27.5	--	0.1	1	--	--	--
31...	1422	38.0	265	7.2	25.5	--	0.1	1	86	0	31

08067600 LAKE CONROE NEAR CONROE, TX--Continued

302607095360901 - LAKE CONROE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
FEB										
13...	2.1	12	0.6	3.6	69	5.2	19	<0.10	3.9	114
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	2.2	12	0.6	3.5	72	15	20	0.10	4.5	129
APR										
01...	2.1	12	0.6	3.3	69	<6.0	21	<0.10	3.0	--
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	2.1	12	0.6	3.1	71	6.4	20	0.20	3.8	119
JUL										
31...	1.9	12	0.6	2.6	69	5.1	22	0.20	5.8	121
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	2.1	12	0.6	3.0	94	1.2	19	0.10	7.9	137

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
FEB										
13...	--	0.010	<0.100	0.020	0.68	0.70	0.040	0.030	40	2
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	0.180	0.020	0.200	0.070	0.63	0.70	0.030	0.030	37	8
APR										
01...	0.040	0.020	0.060	0.030	0.47	0.50	0.020	0.010	8	3
01...	--	--	--	--	--	--	--	--	--	--
01...	0.052	0.030	0.082	0.050	0.65	0.70	0.020	0.020	<10	20
01...	--	--	--	--	--	--	--	--	--	--
01...	0.140	0.040	0.180	0.090	0.61	0.70	0.040	0.020	7	48
JUL										
31...	--	<0.010	<0.050	<0.010	--	0.60	0.040	<0.010	<3	3
31...	--	--	--	--	--	--	--	--	--	--
31...	--	<0.010	<0.050	<0.010	--	0.70	0.020	<0.010	110	470
31...	--	--	--	--	--	--	--	--	--	--
31...	--	<0.010	<0.050	1.50	0.60	2.1	0.200	0.140	1200	2700

302714095372201 - LAKE CONROE SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB								
13...	1325	1.00	185	7.9	15.0	0.60	11.2	112
13...	1327	10.0	195	7.4	13.5	--	9.8	95
13...	1329	20.0	230	7.2	11.0	--	7.0	64
13...	1331	24.0	230	7.2	11.0	--	7.0	64
APR								
01...	1324	1.00	220	8.2	20.5	0.98	9.8	107
01...	1326	10.0	225	7.7	18.5	--	7.8	82
01...	1328	24.0	225	7.4	18.0	--	4.2	44
JUL								
31...	1450	1.00	225	8.7	33.0	0.58	8.4	117
31...	1452	10.0	230	7.8	30.5	--	4.3	57
31...	1454	21.0	235	7.5	29.5	--	1.5	20

08067600 LAKE CONROE NEAR CONROE, TX--Continued

303129095360501 - LAKE CONROE SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)
FEB											
13...	1410	1.00	125	7.1	16.0	0.37	8.2	84	43	8	15
13...	1412	10.0	130	7.0	15.5	--	7.6	77	--	--	--
13...	1414	20.0	135	6.8	13.0	--	4.5	43	--	--	--
13...	1416	30.0	140	6.6	12.5	--	4.0	38	46	7	16
APR											
01...	1352	1.00	205	8.5	21.0	0.54	10.5	116	66	11	23
01...	1354	5.00	210	7.9	19.5	--	8.9	96	--	--	--
01...	1356	15.0	210	7.5	18.5	--	7.3	77	--	--	--
01...	1358	20.0	210	7.6	18.5	--	7.3	77	--	--	--
01...	1400	30.0	210	7.6	18.5	--	7.3	77	71	10	25
JUL											
31...	1520	1.00	225	8.9	34.5	0.47	9.8	139	80	8	29
31...	1522	10.0	230	7.4	30.5	--	2.9	39	--	--	--
31...	1524	15.0	235	7.5	30.5	--	3.0	40	--	--	--
31...	1526	20.0	235	7.7	30.5	--	3.0	40	--	--	--
31...	1528	27.0	235	7.6	30.5	--	2.8	37	81	2	29

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
FEB										
13...	1.4	7.4	0.5	3.1	35	7.4	13	<0.10	9.6	78
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	1.5	7.7	0.5	3.2	39	6.6	14	<0.10	8.8	81
APR										
01...	2.0	12	0.6	3.2	55	7.9	21	0.10	7.3	109
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	2.0	12	0.6	3.1	61	8.3	20	<0.10	5.7	113
JUL										
31...	1.	13	0.6	2.9	72	5.2	23	0.20	8.4	127
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	2.2	13	0.6	2.8	79	6.1	21	0.20	8.8	131

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB										
13...	--	0.030	<0.100	0.050	0.75	0.80	0.100	0.070	100	16
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	0.060	0.040	0.100	0.200	0.50	0.70	0.110	0.080	180	52
APR										
01...	--	0.020	<0.050	0.030	0.67	0.70	0.060	0.030	19	2
01...	--	--	--	--	--	--	--	--	--	--
01...	0.039	0.020	0.059	0.060	0.74	0.80	0.060	0.030	20	10
01...	--	--	--	--	--	--	--	--	--	--
01...	0.035	0.020	0.055	0.060	0.64	0.70	0.060	0.030	23	14
JUL										
31...	--	<0.010	<0.050	<0.010	--	1.1	0.070	<0.010	6	<1
31...	--	--	--	--	--	--	--	--	--	--
31...	--	0.010	<0.050	0.040	1.1	1.1	0.100	0.020	10	20
31...	--	--	--	--	--	--	--	--	--	--
31...	--	0.020	<0.050	0.060	0.94	1.0	0.110	0.020	<3	76

08067650 WEST FORK SAN JACINTO RIVER BELOW LAKE CONROE NEAR CONROE, TX

LOCATION.--Lat 30°20'31", long 95°32'34", Montgomery County, Hydrologic Unit 12040101, on right bank at downstream side of bridge on State Highway 105, 3.0 mi downstream from Lake Conroe Dam, and 5.9 mi west of Conroe.

DRAINAGE AREA.--451 mi^2.

PERIOD OF RECORD.--August 1972 to 1989 (discharge for periods of outflow from Lake Conroe only), Oct. 1, 1989 to current year (daily discharges 10 ft^3/s or greater).
Water-quality records.--Chemical, biochemical and pesticide analyses: October 1972 to September 1986, and October 1987 to August 1989.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 116.06 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Daily discharges below 10 ft^3/s are not published.

AVERAGE DISCHARGE.--17 years (water years 1973-89), 226 ft^3/s (163,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,780 ft^3/s May 22, 1983 (gage height, 35.50 ft); no flow for many days.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1940 reached a stage of 41.94 ft, from information by the Texas Department of Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,180 ft^3/s Jan. 18 at 1700-2100 hours (gage height, 29.85 ft). Minimum discharge not published.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	16	790	---	1330	---	---	---	---
2	---	---	---	22	13	1000	---	1330	---	---	---	---
3	---	---	---	23	12	1300	---	1450	---	---	---	18
4	---	---	---	---	483	578	---	1500	623	---	---	---
5	---	---	---	---	1150	369	728	1880	596	---	---	---
6	---	---	---	---	1340	17	1750	1280	233	---	---	---
7	---	---	---	---	1340	---	1750	448	12	---	---	---
8	---	---	---	---	1320	---	1720	209	---	---	---	---
9	---	---	---	---	1300	---	1700	441	---	---	---	---
10	---	---	---	26	987	---	1130	344	249	---	---	---
11	---	---	---	13	922	---	329	22	197	---	---	---
12	---	---	---	---	490	---	28	---	---	---	---	---
13	---	---	---	---	149	---	---	---	---	---	---	---
14	---	---	---	41	11	---	880	---	---	---	---	---
15	---	---	---	1310	16	95	2440	93	123	---	---	---
16	---	---	---	2150	---	588	2800	366	312	---	---	---
17	---	---	---	2450	---	769	2810	1450	312	---	---	---
18	---	---	---	2820	---	714	2650	1450	311	---	---	---
19	---	---	---	3070	571	346	2350	1320	125	---	---	---
20	---	---	---	3040	1580	21	2100	792	---	---	---	---
21	---	---	---	e3000	1880	---	581	324	---	---	---	---
22	---	---	---	e2940	1890	---	31	246	---	---	---	---
23	---	---	---	2890	1860	---	19	186	---	---	---	---
24	---	---	---	2830	1780	---	---	10	---	---	---	---
25	---	---	---	2550	1410	---	---	---	---	---	---	12
26	---	---	---	2300	549	---	---	---	---	---	---	---
27	---	---	---	1870	453	---	312	---	---	---	---	---
28	---	---	---	558	210	---	538	---	---	---	---	---
29	---	---	---	305	---	497	1300	---	---	---	---	---
30	---	---	---	202	---	530	1330	---	---	---	---	---
31	---	---	---	41	---	351	---	---	---	---	---	---

CAL YR 1990	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---		
WTR YR 1991	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---		

e Estimated

08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX
(National stream-quality accounting network)

LOCATION.--Lat 30°14'40", long 95°27'25", Montgomery County, Hydrologic Unit 12040101, near right bank at downstream side of pier of bridge on Interstate Highway 45 and U.S. Highway 75, 300 ft upstream from Missouri Pacific Railroad Co. bridge, 3.5 mi downstream from Lake Creek, 4.2 mi south of Conroe, and at mile 79.

DRAINAGE AREA.--828 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to September 1927, July 1939 to current year.

REVISED RECORDS.--WSP 1058: 1926. WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 95.03 ft above National Geodetic Vertical Datum of 1929. May 7, 1924, to Sept. 30, 1927, nonrecording gage at railroad bridge 285 ft downstream at datum 30.10 ft higher. July 13, 1939, to Sept. 30, 1963, water-stage recorder at datum 5.0 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since Jan. 9, 1973 by Lake Conroe (station 08067600), capacity 532,000 acre-ft, 14.5 mi upstream from station. There are no large diversions above station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--36 years (water years 1925-27, 1940-72) prior to regulation by Lake Conroe, 477 ft^3/s (345,600 acre-ft/yr); 19 years (water years 1973-91) regulated, 516 ft^3/s (373,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 110,000 ft^3/s Nov. 25, 1940 (gage height, 30.85 ft), present datum, from rating curve extended above 43,000 ft^3/s on basis of velocity-area studies; no flow June 14, 1956, and Sept. 19 to Oct. 1, 1965, result of temporary dams.
Maximum stage since at least December 1913, that of Nov. 25, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1913 reached a stage of 30.2 ft, present site and datum, from information by Missouri Pacific Railroad Co., discharge 101,000 ft^3/s, from rating curve as explained above.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,200 ft^3/s Jan. 21 at 0400 hours (gage height, 20.31 ft); minimum daily, 15 ft^3/s Oct. 1, 2, Oct. 31 to Nov. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	15	22	30	307	1160	156	1570	253	75	29	27
2	15	15	22	161	267	1650	105	2050	265	96	30	26
3	16	15	22	577	243	1410	96	2150	196	120	29	96
4	17	27	24	425	533	977	95	2050	1080	112	27	142
5	18	32	26	541	2350	710	668	3630	824	73	28	114
6	17	24	24	521	2440	400	2450	3050	559	87	28	253
7	17	21	23	320	2790	260	2870	1690	506	113	27	153
8	17	23	23	145	2720	198	3550	732	490	97	26	85
9	22	90	23	161	1810	163	3530	848	250	68	28	67
10	28	53	24	913	1340	141	2570	715	332	54	25	67
11	28	35	23	1200	1160	133	1130	406	357	47	24	63
12	22	27	23	1800	814	128	499	278	178	44	24	47
13	19	25	23	2490	517	120	279	204	111	41	23	53
14	18	23	23	1260	293	111	1320	169	113	39	24	41
15	18	21	25	4060	241	110	4350	195	354	36	26	36
16	17	21	26	4420	219	545	4170	506	677	35	27	59
17	20	20	31	7170	197	987	4710	3590	626	34	24	45
18	30	20	32	7180	198	1030	4790	2920	523	32	23	35
19	17	20	29	6590	398	753	3150	2460	379	32	24	40
20	16	20	26	7380	1780	388	2780	1900	146	30	23	38
21	18	20	25	8570	3040	215	1410	1230	101	31	22	31
22	23	20	24	5190	3320	168	481	722	150	33	21	27
23	21	26	24	3410	2590	142	319	525	296	37	21	26
24	20	23	26	3060	2100	125	247	332	322	35	22	25
25	19	22	26	2930	1790	117	206	220	228	33	21	31
26	17	22	31	2630	1460	111	188	175	116	32	21	35
27	16	23	182	2800	791	105	406	142	98	31	21	27
28	16	24	54	1500	547	101	607	124	116	29	21	24
29	16	23	38	794	---	371	1190	119	88	30	20	23
30	16	22	44	643	---	578	1380	123	87	30	20	22
31	15	---	41	472	---	547	---	153	---	29	33	---
TOTAL	584	772	1009	79343	36255	13954	49702	34978	9821	1615	762	1758
MEAN	18.8	25.7	32.5	2559	1295	450	1657	1128	327	52.1	24.6	58.6
MAX	30	90	182	8570	3320	1650	4790	3630	1080	120	33	253
MIN	15	15	22	30	197	101	95	119	87	29	20	22
AC-FT	1160	1530	2000	157400	71910	27680	98580	69380	19480	3200	1510	3490

CAL YR 1990 TOTAL 105812 MEAN 290 MAX 5330 MIN 15 AC-FT 209900
WTR YR 1991 TOTAL 230553 MEAN 632 MAX 8570 MIN 15 AC-FT 457300

08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1959 to current year. Pesticide analyses: May 1975 to June 1982. Sediment records: February 1966 to September 1967, October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1961 to September 1990.
WATER TEMPERATURE: October 1961 to September 1990.
DISSOLVED OXYGEN: August 1979 to May 1981.

INSTRUMENTATION.--From August 1979 to May 1981, a three-parameter water-quality monitor recorded specific conductance, water temperature, and dissolved oxygen at this station. From June 1981 to September 1990 specific conductance and water temperature were recorded continuously at this station.

REMARKS.--Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 970 microsiemens Aug. 17, 1990; minimum, 40 microsiemens Nov. 24, 1985.
WATER TEMPERATURE: Maximum, 37.0°C June 26, 1984; minimum daily, 0.0°C Dec. 22, 1963, Jan. 31, 1968.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV												
27...	0945	22	636	7.7	22.0	4.5	6.7	77	0.9	210	170	83
FEB												
27...	1040	769	238	7.8	12.0	20	11.0	100	2.5	140	84	82
JUN												
03...	1136	136	275	7.4	27.5	27	8.2	103	1.6	92	170	84
AUG												
19...	0930	23	445	7.7	26.0	9.0	6.7	82	1.0	210	250	83

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
NOV											
27...	0	26	4.4	90	4	5.6	0	119	98	38	100
FEB											
27...	11	29	2.3	16	0.8	3.2	0	87	71	12	25
JUN											
03...	21	29	2.8	21	1	--	0	77	63	8.8	32
AUG											
19...	0	27	3.8	54	3	6.2	0	111	90	24	58

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
NOV											
27...	0.10	22	361	366	3.58	3.58	0.020	0.020	3.60	3.60	0.080
FEB											
27...	<0.10	6.1	142	138	0.200	--	0.010	<0.010	0.210	0.220	0.050
JUN											
03...	0.20	17	163	--	0.520	0.550	0.080	0.030	0.600	0.580	0.160
AUG											
19...	0.30	23	277	271	3.68	3.59	0.020	0.010	3.70	3.60	0.050

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	SEDI-MENT, SUS-PENDED (MG/L)
NOV											
27...	0.070	0.62	--	--	0.70	1.50	1.50	1.50	1.60	4.6	9
FEB											
27...	0.050	0.75	--	--	0.80	0.070	0.050	0.040	0.060	0.12	31
JUN											
03...	0.100	0.84	--	--	1.0	0.370	0.260	0.270	0.330	0.83	45
AUG											
19...	0.050	0.45	0.45	0.50	0.50	1.50	1.20	1.20	1.20	3.7	26

08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
NOV											
27...	0.53	87	30	<1	84	<0.5	<1.0	<1	<3	1	87
FEB											
27...	64	84	40	<1	98	<0.5	<1.0	<1	<3	2	58
JUN											
03...	17	97	40	2	100	<0.5	<1.0	1	<3	5	92
AUG											
19...	1.6	93	20	2	70	<0.5	<1.0	<1	<3	1	30

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
NOV											
27...	<1	13	51	<0.1	<10	<1	<1	<1.0	330	<6	9
FEB											
27...	1	<4	16	<0.1	<10	<1	<1	<1.0	96	<6	5
JUN											
03...	3	<4	54	<0.1	<10	2	<1	<1.0	120	<6	55
AUG											
19...	<1	12	70	<0.1	<10	1	<1	<1.0	280	<6	7

08068090 WEST FORK SAN JACINTO RIVER ABOVE LAKE HOUSTON NEAR PORTER, TX

LOCATION.--Lat 30°05'09", long 95°17'59", Montgomery County, Hydrologic Unit 12040101, on left bank, 4.4 mi southwest of Porter, 5.0 mi upstream from Spring Creek and 6.2 mi northwest of Humble.

DRAINAGE AREA.--962 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, at site 1.7 mi downstream, water years 1968-72, 1974-75. February to March 1984 (discharge measurements only), May 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 33 ft above National Geodetic Vertical Datum of 1929, from topographic map and levels.

REMARKS.--Records good except those for estimated daily discharges, which are poor. There is considerable regulation during high flow periods by Lake Conroe (capacity 532,000 acre-ft) 34.3 mi upstream. During periods of low base flow in tributaries entering Lake Houston, occasional releases are made from Lake Conroe in order to maintain water levels in Lake Houston, which has several large diversions. There are no large diversions upstream from station. There is only minor sewage effluent discharge from the city of Conroe and other small communities into the river upstream from this station.

AVERAGE DISCHARGE.--7 years, 550 ft^3/s (398,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (estimated), 30,000 ft^3/s May 18, 1989 (gage height, 29.76 ft), from statistical studies of areal stations and rainfall data; minimum daily, 19 ft^3/s Sept. 29-30, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,610 ft^3/s Jan. 19 at 0200 hours (gage height, 23.59 ft); minimum daily, 18 ft^3/s Oct. 1-3, 16, 31, Nov. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	e18	e25	85	240	2190	321	1510	e300	e100	51	73
2	18	e20	e26	142	169	2120	90	2060	e350	e100	49	60
3	18	e19	28	1240	143	1730	72	2240	e350	e130	50	74
4	20	e27	27	694	e451	1520	164	2960	e1500	e120	51	251
5	20	e35	29	708	e1700	869	1510	4450	e1100	e100	48	178
6	20	e28	31	711	e2600	641	4450	4020	e900	e90	54	228
7	19	e25	30	598	e3200	345	3900	2500	e650	e120	52	301
8	19	e28	29	343	e3100	239	4130	1390	e550	e110	53	168
9	21	e95	30	229	e2300	185	4220	1320	e500	e90	52	241
10	21	e62	30	1260	e1600	154	3230	1100	e500	e80	57	141
11	26	e47	29	1640	e1400	133	1590	779	e550	e75	51	118
12	26	e34	31	1430	e960	123	835	436	e400	e70	51	77
13	22	e28	29	2370	e600	111	411	310	e200	e66	51	61
14	21	e26	28	1730	320	100	1570	235	e150	e64	53	60
15	21	e25	29	4150	179	93	6810	241	e350	e62	87	50
16	18	e24	32	5020	151	288	5490	390	e800	e62	103	49
17	23	e24	34	5880	135	1040	5600	3440	e750	e60	66	69
18	26	e23	41	7400	133	1180	6920	3830	e650	e60	61	50
19	34	e24	41	7960	145	986	4550	3000	e550	e60	57	46
20	25	e23	39	6610	1260	596	3570	2610	e400	57	53	82
21	29	e23	36	7440	2850	270	2270	2010	e200	57	55	56
22	26	e23	35	6430	3840	175	849	1140	e180	59	53	48
23	28	e30	35	4120	3220	135	435	772	e350	69	52	42
24	e30	e27	34	3290	2470	111	303	556	e370	80	51	40
25	e26	e25	35	3130	2160	93	222	336	e300	68	51	43
26	e20	e25	38	2790	1820	88	183	266	e200	58	52	44
27	e19	e27	303	2890	1060	85	202	200	e130	61	48	46
28	e19	e28	289	2140	688	77	601	e164	e130	61	51	40
29	e19	e27	118	934	---	127	924	e140	e110	57	50	37
30	e19	e25	91	604	---	597	1450	e130	e100	67	50	35
31	e18	---	93	499	---	571	---	e150	---	54	57	---
TOTAL	689	895	1725	84467	38894	16972	66872	44685	13570	2367	1720	2808
MEAN	22.2	29.8	55.6	2725	1389	547	2229	1441	452	76.4	55.5	93.6
MAX	34	95	303	7960	3840	2190	6920	4450	1500	130	103	301
MIN	18	18	25	85	133	77	72	130	100	54	48	35
AC-FT	1370	1780	3420	167500	77150	33660	132600	88630	26920	4690	3410	5570

CAL YR 1990 TOTAL 127417 MEAN 349 MAX 5060 MIN 18 AC-FT 252700
WTR YR 1991 TOTAL 275664 MEAN 755 MAX 7960 MIN 18 AC-FT 546800

e Estimated

08068090 WEST FORK SAN JACINTO RIVER ABOVE LAKE HOUSTON NEAR PORTER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1984 to current year.

INSTRUMENTATION.--Stage-activated water sampler since January 1985 provides water-quality samples over selected runoff events.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
FEB											
20...	1615	1640	--	--	--	--	--	--	--	--	--
21...	1215	2850	--	--	--	--	--	--	--	--	--
22...	0815	3920	--	--	--	--	--	--	--	--	--
23...	1615	3050	--	--	--	--	--	--	--	--	--
MAR											
27...	1134	88	358	7.6	23.0	8.7	102	130	190	97	23
AUG											
06...	0804	56	595	7.3	26.0	6.8	84	140	84	110	18
SEP											
17...	0926	72	431	7.5	26.5	6.7	83	230	130	79	13

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
FEB											
20...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAR											
27...	33	3.6	33	1	3.2	74	20	51	0.10	15	207
AUG											
06...	36	4.5	76	3	4.4	90	21	110	0.30	20	331
SEP											
17...	26	3.5	49	2	4.5	66	14	69	0.20	16	229

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
FEB										
20...	0.200	--	0.020	--	0.220	--	0.050	--	1.0	--
21...	0.140	--	0.030	--	0.170	--	0.090	--	0.81	--
22...	0.110	--	0.020	--	0.130	--	0.060	--	0.84	--
23...	0.120	--	0.020	--	0.140	--	0.070	--	1.0	--
MAR										
27...	0.680	0.690	0.050	0.030	0.730	0.720	0.040	<0.010	0.86	--
AUG										
06...	0.770	0.810	0.060	0.030	0.830	0.840	0.080	0.050	0.52	0.45
SEP										
17...	1.26	1.28	0.040	0.020	1.30	1.30	0.060	0.040	0.74	0.46

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
FEB										
20...	--	1.1	0.090	--	--	0.020	--	--	--	--
21...	--	0.90	0.080	--	--	0.030	--	--	--	--
22...	--	0.90	0.080	--	--	0.050	--	--	--	--
23...	--	1.1	0.070	--	--	0.040	--	--	--	--
MAR										
27...	0.70	0.90	0.360	0.220	0.210	0.260	0.64	10	130	34
AUG										
06...	0.50	0.60	0.570	0.450	0.430	0.500	1.3	5.9	4	34
SEP										
17...	0.50	0.80	0.480	0.380	0.340	0.360	1.0	7.8	35	7

08068520 SPRING CREEK AT SPRING, TX

LOCATION.--Lat 30°05'31", long 95°24'21", Harris-Montgomery County line, Hydrologic Unit 12040102, near right bank at upstream side of bridge on Riley-Fussel Road, 1.1 mi northeast of Spring, 2.7 mi downstream from Missouri Pacific Railroad bridge, 3.6 mi downstream from former station 08068500 at Interstate Highway 45, 6.9 mi upstream from Cypress Creek, and 9.9 mi upstream from mouth.

DRAINAGE AREA.--419 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1939 to current year. Prior to 1975, published as "near Spring".

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 62.17 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 5, 1946, nonrecording gage, and Jan. 6, 1946, to Oct. 1, 1965, water-stage recorder at site 3.6 mi upstream at different datum. Oct. 2, 1965, to Feb. 19, 1976, water-stage recorder at former site at datum 10.93 ft higher; unadjusted for land-surface subsidence.

REMARKS.--Records good except those for estimated discharges, which are poor. No known diversion above station.

AVERAGE DISCHARGE.--52 years, 224 ft³/s (7.26 in/yr), 162,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,700 ft³/s Nov. 25, 1940 (gage height, 33.60 ft) former site and datum, from graph based on gage readings; minimum, 1.1 ft³/s Oct. 23, 24, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1879, 34.3 ft, former site and datum, May 30, 1929, from floodmarks identified by local residents, discharge, 48,300 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 17	1100	5,950	18.23	Apr. 8	1500	4,010	14.95
Jan. 21	0600	4,320	15.51	Apr. 16	2100	*5,980	*18.29
Feb. 5	2300	2,530	11.95	May 7	2300	3,990	14.91
Apr. 5	2400	3,460	13.91				

Minimum discharge, 10.0 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	14	17	40	115	962	72	147	545	69	30	83
2	12	13	16	217	111	758	64	131	163	211	28	80
3	12	14	15	895	107	435	59	131	226	276	27	175
4	16	26	16	788	990	221	852	451	538	265	62	388
5	16	37	17	819	2170	140	2260	977	281	93	35	403
6	14	22	19	477	2320	113	3070	1930	179	61	28	272
7	14	18	21	204	1950	93	3170	3430	227	73	27	240
8	13	34	21	153	1050	80	3780	3240	347	127	29	333
9	17	353	19	351	386	73	2580	1390	960	74	28	286
10	16	83	20	1540	259	68	1130	927	1190	55	24	126
11	14	77	20	1350	179	64	754	1220	836	46	22	97
12	14	51	18	1290	135	64	507	837	471	42	22	125
13	14	36	18	1150	117	64	269	311	205	35	22	101
14	13	27	19	426	102	63	1690	198	157	34	22	109
15	13	23	19	2080	88	65	3950	156	910	33	e85	65
16	13	20	26	3790	79	102	5190	147	715	32	e60	139
17	38	17	28	5610	74	185	5160	664	606	31	e50	113
18	58	16	27	4630	77	230	2850	1340	518	29	e45	64
19	29	16	21	3380	118	225	1210	1380	361	29	e50	49
20	22	16	19	3310	176	140	880	810	164	28	e35	42
21	42	15	19	4070	353	102	1290	582	107	35	29	36
22	29	16	24	2290	432	89	1620	428	113	32	27	32
23	21	19	23	703	262	81	725	324	154	30	26	29
24	18	17	22	430	197	76	285	237	140	30	23	29
25	16	16	21	343	151	73	224	168	127	29	22	35
26	16	16	41	303	143	70	165	134	154	39	21	33
27	15	18	301	266	129	68	183	110	126	36	21	50
28	15	19	109	204	132	70	259	95	130	30	21	39
29	15	17	75	172	---	180	196	103	90	31	21	31
30	15	17	60	150	---	87	155	162	74	41	21	28
31	14	---	50	131	---	72	---	616	---	38	299	---
TOTAL	587	1083	1141	41562	12402	5113	44599	22776	10814	2014	1262	3632
MEAN	18.9	36.1	36.8	1341	443	165	1487	735	360	65.0	40.7	121
MAX	58	353	301	5610	2320	962	5190	3430	1190	276	299	403
MIN	12	13	15	40	74	63	59	95	74	28	21	28
AC-FT	1160	2150	2260	82440	24600	10140	88460	45180	21450	3990	2500	7200
CFSM	.05	.09	.09	3.20	1.06	.39	3.55	1.75	.86	.16	.10	.29
IN.	.05	.10	.10	3.69	1.10	.45	3.96	2.02	.96	.18	.11	.32

CAL YR 1990 TOTAL 53017 MEAN 145 MAX 2830 MIN 12 AC-FT 105200 CFSM .35 IN. 4.71
WTR YR 1991 TOTAL 146985 MEAN 403 MAX 5610 MIN 12 AC-FT 291500 CFSM .96 IN. 13.05

e Estimated

08068520 SPRING CREEK AT SPRING, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: August 1983 to current year.

INSTRUMENTATION.--Stage-activated water sampler since October 1984 provides water-quality samples over selected runoff events.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
MAR											
28...	0920	67	376	7.8	19.5	8.3	90	120	92	65	0
AUG											
05...	1012	34	417	7.3	27.5	7.2	91	1400	1500	67	0
SEP											
16...	1200	105	306	7.4	27.0	6.7	84	620	1400	48	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAR											
28...	20	3.6	48	3	3.3	76	10	56	0.20	15	210
AUG											
05...	21	3.5	60	3	4.3	87	12	62	0.30	13	240
SEP											
16...	15	2.6	40	3	4.4	72	8.1	32	0.20	11	169

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
MAR										
28...	1.01	1.13	0.190	0.070	1.20	1.20	0.120	0.120	0.78	0.78
AUG										
05...	1.96	1.97	0.040	0.030	2.00	2.00	0.090	0.070	0.51	0.43
SEP										
16...	2.04	2.05	0.060	0.050	2.10	2.10	0.190	0.160	0.91	0.64

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAR										
28...	0.90	0.90	0.990	0.830	0.830	0.920	2.5	9.9	650	81
AUG										
05...	0.50	0.60	1.10	0.890	0.890	0.950	2.7	6.9	32	96
SEP										
16...	0.80	1.1	1.00	0.880	0.830	0.930	2.5	12	81	29

08068720 CYPRESS CREEK AT KATY-HOCKLEY ROAD NEAR HOCKLEY, TX

LOCATION.--Lat 29°57'00", long 95°48'29", Harris County, Hydrologic Unit 12040102, on left bank at bridge on Katy-Hockley Road, 3.3 mi downstream from station 08068700, 5.6 mi southeast of Hockley, and 6.3 mi upstream from station 08068740.

DRAINAGE AREA.--110 mi^2.

PERIOD OF RECORD.--June 1975 to July 1983, February 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. A concrete weir located 0.9 mi downstream from the gage, washed out Aug. 11, 1991. Datum of gage is 100.00 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversions and return flow for irrigation occur upstream from station. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--14 years (water years 1975-82, 1985-91), 53.6 ft^3/s (38,830 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,370 ft^3/s Jan. 20, 1979 (gage height, 61.05 ft), but may have been exceeded during period of no record July 29 to Jan. 31, 1984; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood in June 1960 reached a stage of 62.0 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,510 ft^3/s Apr. 16 at 1800 hours (gage height, 59.93 ft); no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.03	.00	.00	e1.0	12	9.6	.13	6.5	2.1	2.6	.38	e1.0
2	e.03	.01	.00	e20	10	8.5	.06	16	2.6	11	2.1	7.5
3	e.02	.02	.00	188	6.8	5.6	.07	10	2.8	12	.00	9.1
4	e.04	.01	.00	177	100	4.8	.25	116	2.6	8.7	1.7	36
5	e.02	.02	.00	37	398	4.1	117	102	1.6	15	.13	25
6	e.03	.01	.00	19	394	3.6	574	35	.00	12	.00	19
7	e.02	.02	.00	16	145	2.8	737	16	2.5	6.9	.00	25
8	e.01	.90	.00	5.6	65	3.3	625	15	23	5.6	.00	18
9	.09	7.8	.00	32	36	3.0	378	117	32	5.0	.16	15
10	1.8	29	.00	297	22	2.1	121	136	32	5.2	.15	14
11	1.2	3.5	.00	438	15	1.5	103	47	18	4.2	13	9.4
12	.47	.00	.00	263	10	1.4	86	20	10	1.1	8.2	6.5
13	.25	.00	.00	72	7.5	2.2	54	11	.25	3.6	e2.0	e3.0
14	.23	.00	.00	71	5.9	1.7	592	7.0	.00	3.3	e1.0	e1.5
15	.12	.00	.00	843	6.6	1.1	1340	5.2	.38	3.2	15	e1.2
16	.12	.00	.00	1010	3.8	2.3	1480	32	31	3.3	11	e1.0
17	2.1	.00	.00	1040	3.5	6.8	1420	180	21	2.7	e4.0	e1.5
18	14	.00	.00	1010	2.8	8.6	1140	147	3.9	1.8	e2.0	e.60
19	31	.00	.00	1130	6.6	3.9	791	73	1.2	.76	e1.5	e.50
20	.69	.00	.00	1140	17	2.3	296	62	.00	.31	e1.2	e.70
21	.04	.00	.00	1020	13	1.9	135	35	.00	.34	e1.0	e.60
22	.17	.00	.00	726	15	2.0	92	22	7.8	.17	e.80	e.50
23	.09	.00	.00	265	13	1.8	70	15	13	1.6	e.60	e.40
24	.06	.00	.00	152	5.6	1.7	53	6.1	5.9	2.0	e.40	e.50
25	.40	.00	.00	111	4.5	1.7	40	4.1	8.1	2.7	e.20	1.1
26	.12	.00	.00	86	4.0	1.4	30	4.5	124	1.6	e.10	e1.4
27	.04	.00	2.1	59	4.8	1.1	20	4.4	87	3.1	e.05	e1.5
28	.06	.00	7.2	40	3.8	1.1	15	5.6	20	6.5	e.02	e1.1
29	.03	.00	e6.0	28	---	2.1	10	17	13	2.3	e.01	e.90
30	.01	.00	e4.0	22	---	1.1	6.7	6.3	8.7	1.6	e.00	e.75
31	.00	---	e2.0	16	---	.47	---	4.4	---	.97	e.00	---
TOTAL	53.29	41.29	21.30	10334.6	1331.2	95.57	10326.21	1278.1	474.43	131.15	66.70	204.25
MEAN	1.72	1.38	.69	333	47.5	3.08	344	41.2	15.8	4.23	2.15	6.81
MAX	31	29	7.2	1140	398	9.6	1480	180	124	15	15	36
MIN	.00	.00	.00	1.0	2.8	.47	.06	4.1	.00	.17	.00	.40
AC-FT	106	82	42	20500	2640	190	20480	2540	941	260	132	405

CAL YR 1990 TOTAL 1905.33 MEAN 5.22 MAX 254 MIN .00 AC-FT 3780
WTR YR 1991 TOTAL 24358.09 MEAN 66.7 MAX 1480 MIN .00 AC-FT 48310

e Estimated

08068740 CYPRESS CREEK AT HOUSE AND HAHL ROAD NEAR CYPRESS, TX

LOCATION.--Lat 29°57'32", long 95°43'03", Harris County, Hydrologic Unit 12040102, on right bank at bridge on House and Hahl Road, 1.4 mi southwest of Cypress, and 6.3 mi downstream from station 08068720.

DRAINAGE AREA.--131 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1975 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 100.00 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records good. No estimated daily discharges. Stage discharge relationship affected by seasonal vegetal growth during most years. Considerable diversions and return flow from irrigation occurs upstream from station, especially during period April through October.

AVERAGE DISCHARGE.--16 years, 72.4 ft³/s (52,450 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,590 ft³/s Sept. 22, 1979 (gage height, 46.33 ft); no flow for many days (result of pumping for irrigation).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1908, about 49 ft in 1937, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,710 ft³/s Apr. 15 at 1300 hours (gage height, 45.68 ft); minimum daily discharge, 0.03 ft³/s Apr. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.08	.08	1.7	22	33	.10	12	.66	5.6	1.9	.92
2	.06	.06	.07	44	22	18	.05	32	.30	8.0	2.2	9.8
3	.06	.05	.07	332	16	13	.03	15	.29	43	1.3	25
4	.07	1.2	.08	328	235	7.7	.05	96	.37	17	1.8	69
5	.11	1.2	.08	96	624	6.3	207	126	.62	19	1.7	69
6	.08	.64	.08	48	611	5.4	829	44	.17	15	1.5	40
7	.06	1.0	.09	32	313	4.9	941	20	31	8.1	1.2	59
8	.05	8.2	.12	18	103	4.0	859	18	113	5.6	.81	41
9	.04	59	.12	56	59	3.7	660	100	57	6.9	.44	31
10	.16	65	.08	482	37	2.0	294	169	51	14	.41	26
11	2.3	17	.08	655	27	.81	176	59	31	14	19	19
12	1.0	2.2	.09	505	21	.59	152	24	15	11	8.9	11
13	.78	.69	.11	137	17	.36	93	15	2.0	12	5.0	6.0
14	1.1	.38	.11	73	13	.40	662	10	.31	6.2	2.2	2.4
15	.87	.32	.11	982	15	.47	1650	7.8	6.5	4.1	20	1.5
16	.81	.23	.11	1170	10	3.5	1620	39	25	3.1	29	1.3
17	58	1.9	.12	1130	9.0	6.2	1570	263	34	3.0	10	2.1
18	52	1.1	.14	1220	8.2	13	1480	241	6.9	2.2	3.8	.89
19	77	.37	.16	1370	16	5.7	1230	88	.74	1.5	2.0	.84
20	15	.49	.13	1330	24	2.4	694	64	.16	.91	1.7	1.1
21	20	.26	.07	1230	24	1.0	234	32	.04	.76	1.6	1.0
22	18	.25	.06	1040	22	1.2	166	20	11	1.1	1.4	.93
23	17	.20	.05	607	23	.47	119	14	20	18	1.2	.85
24	13	.14	.04	274	15	.22	85	5.3	92	15	.84	.71
25	14	.12	.10	183	10	.23	52	2.6	183	10	.62	1.9
26	8.4	.20	2.8	137	8.2	.22	36	1.5	219	9.3	.53	1.5
27	2.2	.13	17	87	9.7	.14	25	2.1	168	6.7	.48	1.6
28	.83	.16	11	61	7.9	.20	20	3.1	37	10	.44	1.2
29	.53	.17	9.5	44	---	5.3	16	15	19	5.0	.33	.97
30	.27	.12	4.7	35	---	.62	11	6.2	11	3.5	.30	.77
31	.17	---	2.7	28	---	.24	---	2.7	---	2.4	.34	---
TOTAL	304.06	162.86	50.05	13735.7	2322.0	141.27	13881.23	1547.3	1136.06	281.97	122.94	428.28
MEAN	9.81	5.43	1.61	443	82.9	4.56	463	49.9	37.9	9.10	3.97	14.3
MAX	77	65	17	1370	624	33	1650	263	219	43	29	69
MIN	.04	.05	.04	1.7	7.9	.14	.03	1.5	.04	.76	.30	.71
AC-FT	603	323	99	27240	4610	280	27530	3070	2250	559	244	849

CAL YR 1990	TOTAL	5192.89	MEAN	14.2	MAX	630	MIN	.00	AC-FT	10300
WTR YR 1991	TOTAL	34113.72	MEAN	93.5	MAX	1650	MIN	.03	AC-FT	67660

08068740 CYPRESS CREEK AT HOUSE AND HAHL ROAD NEAR CYPRESS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1977 to August 1991 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
NOV												
29...	1135	0.18	626	8.0	15.5	55	10	8.5	83	0.8	92	0
FEB												
28...	1136	6.9	247	7.8	13.5	140	32	9.5	90	3.0	57	0
MAY												
09...	0928	54	106	7.4	20.0	160	85	6.9	76	6.4	33	0
AUG												
07...	1155	1.0	438	8.0	30.0	55	10	5.5	72	2.6	90	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)
NOV												
29...	26	6.4	98	4	5.5	180	16	83	0.50	2.5	346	<1
FEB												
28...	17	3.6	26	1	4.6	66	15	29	0.10	4.3	140	14
MAY												
09...	9.4	2.2	6.7	0.5	4.2	33	3.1	10	<0.10	7.4	63	212
AUG												
07...	27	5.3	54	2	4.9	130	7.3	54	0.30	14	248	15

DATE	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
NOV												
29...	<1	--	5.82	0.080	5.90	0.110	0.99	1.1	4.10	3.30	6.1	3
FEB												
28...	3	11	0.290	0.020	0.310	0.050	1.5	1.5	0.310	0.200	13	<1
MAY												
09...	30	182	0.300	0.120	0.420	0.170	1.8	2.0	0.500	0.160	19	2
AUG												
07...	7	8	0.100	0.040	0.140	0.080	0.92	1.0	0.240	0.180	11	5

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)
NOV												
29...	190	<0.5	<1.0	<5	<3	<10	120	<10	5	21	<0.1	<10
FEB												
28...	95	<0.5	1.0	<5	<3	<10	450	<10	<4	44	<0.1	<10
MAY												
09...	56	<0.5	<1.0	<5	<3	<10	340	<10	<4	19	<0.1	<10
AUG												
07...	190	<0.5	<1.0	<5	<3	<10	45	<10	7	83	<0.1	<10

DATE	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)
NOV												
29...	<10	4	<1.0	160	<6	3	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010
FEB												
28...	<10	<1	<1.0	83	<6	10	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010
MAY												
09...	<10	<1	<1.0	41	<6	7	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010
AUG												
07...	<10	<1	<1.0	130	<6	20	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010

08068740 CYPRESS CREEK AT HOUSE AND HAHL ROAD NEAR CYPRESS, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-SYSTON TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
NOV												
29...	<0.010	0.01	<0.010	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01
FEB												
28...	<0.010	0.01	<0.010	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01
MAY												
09...	<0.010	0.06	<0.010	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	0.03	<0.01
AUG												
07...	<0.010	0.01	<0.010	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
NOV												
29...	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.01	<0.01	<0.01
FEB												
28...	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.02	0.03	<0.01
MAY												
09...	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.02	0.02	<0.01
AUG												
07...	<0.01	--	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.04	<0.01	<0.01

08068780 LITTLE CYPRESS CREEK NEAR CYPRESS, TX

LOCATION.--Lat 30°00'57", long 95°41'50", Harris County, Hydrologic Unit 12040102, on right bank at downstream side of bridge on Cypress-Rose Hill Road, 3.2 mi north of Cypress, and 6.9 mi upstream from mouth.

DRAINAGE AREA.--41.0 mi².

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

GAGE.--Water-stage and rainfall recorders and crest-stage gage. Datum of gage is 80.00 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Several observations of water temperature were made during the year. Stage and rainfall radio-telemetry at station are operated by Harris Flood Control District.

AVERAGE DISCHARGE.--9 years, 20.0 ft³/s (6.62 in/yr), 14,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,400 ft³/s Nov. 25, 1987 at 1300 hours (gage height, 80.49 ft); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 15	1200	2,170	79.20	Apr. 6	0600	2,090	79.10
Jan. 19	0500	1,030	77.23	Apr. 15	0300	*2,180	*79.22

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.4	.35	.43	1.5	24	.19	.71	.38	.39	.04	2.2
2	.00	.80	.33	17	.71	9.6	.15	.57	.25	7.6	.03	17
3	.00	.65	.18	336	.48	4.2	.13	11	.20	24	.13	30
4	.00	1.5	.14	135	136	2.1	50	68	5.6	7.4	.15	48
5	.00	3.6	.12	23	345	1.0	402	18	.97	1.8	.06	13
6	.00	1.7	.11	23	89	.63	1730	5.2	.34	.64	.06	6.2
7	.00	.75	.06	37	31	.41	582	1.7	11	.39	.06	6.7
8	.00	.74	.01	11	15	.32	110	1.0	287	.28	.06	4.3
9	.00	57	.09	17	7.8	.27	38	35	54	.17	.06	1.9
10	.00	25	.08	273	4.6	.26	18	18	53	.16	.05	1.4
11	.00	6.3	.08	293	3.1	.26	17	5.7	24	.76	.05	22
12	.00	1.9	.10	46	2.1	.26	9.7	2.1	9.6	4.2	.05	40
13	.00	.88	.09	13	1.7	.33	5.5	.97	3.6	3.3	.07	13
14	.00	.57	.10	28	1.5	.39	574	.65	1.8	.78	.10	4.5
15	.00	.43	.07	1570	1.2	.32	1740	.49	5.3	.39	4.8	2.5
16	.00	.61	.09	920	.74	.61	501	4.1	10	.25	5.3	1.1
17	1.8	.40	.08	122	.60	6.2	86	14	22	.13	.73	1.9
18	19	.36	.08	292	.85	3.0	46	5.9	7.0	.06	.33	4.3
19	7.9	.48	.11	855	7.9	1.1	32	1.5	1.1	.04	.17	1.3
20	1.9	.36	.11	267	11	.49	54	.91	.43	.03	.12	.62
21	.79	.23	.14	50	4.0	.33	24	.68	.28	.02	.10	16
22	.59	.18	.10	24	5.8	.72	12	.65	2.7	.03	.06	10
23	.59	.15	.08	15	4.2	1.8	7.0	.44	4.3	1.8	.04	3.7
24	3.0	.19	.08	17	2.3	.41	6.3	.33	62	2.9	.04	12
25	3.5	.31	.08	20	1.2	.23	4.9	.26	104	.95	.04	15
26	1.3	.25	.23	11	1.6	.25	4.1	.40	22	.50	.04	10
27	.76	.21	14	8.3	1.3	.23	2.5	.22	10	.25	.03	2.5
28	.48	.18	8.5	6.9	1.1	.29	1.7	.17	2.8	.14	.02	.87
29	.34	.16	2.5	5.9	---	.88	1.2	1.8	.81	.10	.02	.38
30	.52	.13	1.0	4.9	---	.95	.90	4.0	.56	.09	.02	.25
31	3.8	---	.60	3.5	---	.39	---	.82	---	.06	.04	---
TOTAL	46.27	107.42	29.69	5444.93	683.28	62.23	6060.27	205.27	707.02	59.61	12.87	292.62
MEAN	1.49	3.58	.96	176	24.4	2.01	202	6.62	23.6	1.92	.42	9.75
MAX	19	57	14	1570	345	24	1740	68	287	24	5.3	48
MIN	.00	.13	.01	.43	.48	.23	.13	.17	.20	.02	.02	.25
AC-FT	92	213	59	10800	1360	123	12020	407	1400	118	26	580
CFSM	.04	.09	.02	4.28	.60	.05	4.93	.16	.57	.05	.01	.24
IN.	.04	.10	.03	4.94	.62	.06	5.50	.19	.64	.05	.01	.27

CAL YR 1990	TOTAL	2494.62	MEAN	6.83	MAX	563	MIN	.00	AC-FT	4950	CFSM	.17	IN.	2.26
WTR YR 1991	TOTAL	13711.48	MEAN	37.6	MAX	1740	MIN	.00	AC-FT	27200	CFSM	.92	IN.	12.44

08068800 CYPRESS CREEK AT GRANT ROAD NEAR CYPRESS, TX

LOCATION.--Lat 29°58'24", long 95°35'54", Harris County, Hydrologic Unit 12040102, on right bank at downstream side of bridge on Grant Road and 6.0 mi east of Cypress.

DRAINAGE AREA.--214 mi^2.

PERIOD OF RECORD.--May 1982 (discharge measurements only), October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 80.00 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Base flow sustained by effluent from urbanized farming areas in the basin. Several observations of water temperature were made during the year. Stage rainfall radio-telemetry operated by Harris County Flood Control District at station.

AVERAGE DISCHARGE.--9 years, 91.0 ft^3/s (65,930 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,550 ft^3/s May 14, 1982, and Nov. 26, 1987; maximum gage height, 43.48 ft May 14, 1982; minimum daily (estimated), 0.05 ft^3/s Apr. 26, 29, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,280 ft^3/s Apr. 15 at 2230 hours (gage height, 42.83 ft); minimum daily, 0.59 ft^3/s Nov. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	6.3	1.2	9.7	28	106	4.4	12	11	18	4.2	3.7
2	3.2	5.1	1.2	199	25	44	3.8	46	9.2	16	3.1	13
3	2.5	5.0	1.5	610	20	25	4.4	24	7.8	69	13	61
4	4.6	20	1.5	572	395	15	17	90	7.8	44	9.3	116
5	4.2	10	1.5	215	1040	10	475	184	11	28	4.8	106
6	4.6	4.5	1.5	205	795	8.1	1700	85	8.7	22	3.8	101
7	5.0	3.5	1.9	85	502	7.0	1930	33	16	15	3.1	72
8	4.6	46	1.7	40	172	6.9	1100	32	432	17	3.1	71
9	9.1	131	1.7	151	78	6.5	792	72	252	13	2.9	59
10	12	71	1.7	978	49	5.7	505	224	150	12	2.7	34
11	3.8	32	1.6	1090	34	4.7	300	128	97	16	6.6	33
12	4.0	10	1.4	717	26	3.6	259	51	43	15	17	44
13	4.7	5.0	1.5	297	21	4.9	153	25	24	18	6.8	28
14	4.7	4.1	1.5	95	17	4.0	1310	18	13	15	6.6	16
15	5.1	3.6	1.6	1430	15	4.7	3110	16	35	11	47	43
16	5.6	3.6	1.7	2500	14	16	2840	22	34	8.9	42	43
17	192	3.6	1.8	1610	12	22	1690	210	79	8.7	17	51
18	218	3.8	1.8	1620	10	17	1380	309	34	8.7	9.3	16
19	e49	3.9	1.7	2110	23	14	1210	187	15	8.7	7.5	13
20	e36	3.2	1.7	1830	29	8.2	940	100	11	8.7	7.5	7.3
21	e28	2.7	2.1	1280	42	6.3	445	63	8.5	8.7	6.9	9.0
22	e24	2.3	2.0	1110	29	6.1	216	37	49	8.7	6.5	16
23	e19	2.7	2.0	852	27	4.8	197	28	179	18	5.8	9.8
24	e18	1.4	2.2	432	20	4.8	112	17	406	44	4.7	11
25	e19	.59	2.2	226	14	4.5	75	12	e578	17	3.7	29
26	e19	.86	12	165	11	4.2	49	11	e306	14	3.3	18
27	e9.1	1.1	45	103	10	4.0	37	10	e263	12	3.2	12
28	3.1	1.2	26	73	23	4.7	27	11	109	11	3.1	8.2
29	2.8	1.2	20	54	---	15	20	21	46	9.8	2.8	6.3
30	3.1	1.2	15	44	---	9.4	15	20	26	7.7	2.8	5.2
31	4.0	---	12	35	---	5.5	---	14	---	7.6	14	---
TOTAL	725.1	390.45	172.2	20737.7	3481	402.6	20916.6	2112	3261.0	531.2	274.1	1055.5
MEAN	23.4	13.0	5.55	669	124	13.0	697	68.1	109	17.1	8.84	35.2
MAX	218	131	45	2500	1040	106	3110	309	578	69	47	116
MIN	2.5	.59	1.2	9.7	10	3.6	3.8	10	7.8	7.6	2.7	3.7
AC-FT	1440	774	342	41130	6900	799	41490	4190	6470	1050	544	2090

CAL YR 1990 TOTAL 9389.44 MEAN 25.7 MAX 874 MIN .37 AC-FT 18620
WTR YR 1991 TOTAL 54059.45 MEAN 148 MAX 3110 MIN .59 AC-FT 107200

e Estimated

08069000 CYPRESS CREEK NEAR WESTFIELD, TX

LOCATION.--Lat 30°02'08", long 95°25'43", Harris County, Hydrologic Unit 12040102, on left bank at downstream side of downstream bridge on Interstate Highway 45 and U.S. Highway 75, 0.9 mi upstream from Senger Gully, 1.8 mi northwest of Westfield, 2.0 mi upstream from Missouri Pacific Railroad Co. bridge, and 11.0 mi upstream from mouth.

DRAINAGE AREA.--285 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1944 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum gage is 63.89 ft above National Geodetic Vertical Datum of of 1929; unadjusted for land-surface subsidence. Prior to Mar. 17, 1951, water-stage recorder at upstream side of bridge at datum 12.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No large diversions upstream from station. Low flow is maintained by sewage effluent. Channel below gage was rectified in 1950-51, 1975, and 1981. Harris County Flood Control District stage and rainfall radio-telemetry located at station.

AVERAGE DISCHARGE.--47 years, 163 ft^3/s (118,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,100 ft^3/s Oct. 8, 1949 (gage height, 33.44 ft) present datum, from rating curve extended above 11,000 ft^3/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 34 ft May 1929 (discharge, 26,000 ft^3/s), present datum, from information by local resident. Flood in November 1940 reached a stage of about 32 ft, present datum (discharge, 15,000 ft^3/s), from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 10	1300	2,600	15.69	Apr. 5	1700	3,140	17.57
Jan. 15	0300	2,610	15.72	Apr. 14	1700	*5,070	*23.04
Jan. 18	1500	3,900	19.97				

Minimum daily discharge, 15 ft^3/s Oct. 12 and Apr. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	28	20	33	55	992	18	35	30	e50	31	42
2	16	30	21	706	44	184	16	55	25	e50	26	25
3	17	37	23	1370	43	88	15	70	64	e50	25	205
4	25	142	21	681	1060	57	527	75	85	e41	55	200
5	30	114	20	393	1500	38	1680	251	30	e35	32	185
6	34	41	21	543	1100	30	2220	159	28	e34	26	332
7	47	31	39	246	740	25	2190	77	115	560	23	278
8	18	222	22	110	350	23	1550	385	450	e291	36	296
9	38	686	21	501	162	24	1010	124	461	e48	31	221
10	31	177	22	2000	108	21	742	186	248	37	21	98
11	20	113	22	1400	79	22	907	202	176	41	20	80
12	15	65	20	982	63	19	431	94	112	42	37	84
13	16	39	19	516	54	17	252	57	76	43	36	108
14	16	31	20	279	45	18	2730	41	56	46	32	63
15	17	26	20	2010	35	29	3670	88	657	40	147	53
16	16	24	54	2040	33	143	2980	66	430	34	111	191
17	561	23	36	2070	31	125	2230	186	243	29	70	179
18	893	23	75	2700	30	43	1710	298	94	28	65	115
19	166	25	27	2480	117	38	1500	273	201	26	112	54
20	99	25	22	2090	57	28	1290	148	38	24	35	44
21	207	23	22	1580	232	22	733	111	30	54	30	30
22	102	35	24	1280	124	20	297	91	168	38	33	41
23	53	32	e24	1080	67	19	239	66	208	122	32	48
24	42	22	e24	786	58	17	169	49	761	95	28	52
25	41	21	e24	342	47	16	130	31	1090	57	27	154
26	42	23	143	239	43	18	95	24	544	45	28	49
27	39	32	408	179	33	18	75	22	316	42	27	45
28	33	34	80	128	96	21	61	26	227	37	26	33
29	30	22	52	97	---	150	52	170	e189	40	25	29
30	26	20	58	80	---	34	41	60	e68	35	27	29
31	25	---	51	66	---	21	---	39	---	36	137	---
TOTAL	2737	2166	1455	29007	6406	2320	29560	3559	7220	2150	1391	3363
MEAN	88.3	72.2	46.9	936	229	74.8	985	115	241	69.4	44.9	112
MAX	893	686	408	2700	1500	992	3670	385	1090	560	147	332
MIN	15	20	19	33	30	16	15	22	25	24	20	25
AC-FT	5430	4300	2890	57540	12710	4600	58630	7060	14320	4260	2760	6670

CAL YR 1990	TOTAL	35796	MEAN	98.1	MAX	1660	MIN	15	AC-FT	71000
WTR YR 1991	TOTAL	91334	MEAN	250	MAX	3670	MIN	15	AC-FT	181200

e Estimated

08069000 CYPRESS CREEK NEAR WESTFIELD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1959 to April 1964, October 1977 to June 1978, August 1983 to current year. Chemical, biochemical, and pesticide analyses: August 1983 to current year. Sediment analyses: October 1976 to September 1979. October 1986 to April 1990.

INSTRUMENTATION.--Stage-activated water sampler since October 1984 provides water-quality samples over selected runoff events.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
JAN											
02...	1700	1240	--	--	--	--	--	--	--	--	--
02...	2100	2200	--	--	--	--	--	--	--	--	--
03...	0100	2330	--	--	--	--	--	--	--	--	--
03...	0500	1940	--	--	--	--	--	--	--	--	--
MAR											
28...	0800	15	791	8.2	21.5	7.2	81	280	320	110	0
AUG											
05...	0820	26	602	8.1	28.5	5.7	74	680	250	92	0
SEP											
16...	0950	254	201	7.2	26.5	5.8	72	6000	9800	37	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
JAN											
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
MAR											
28...	36	5.5	110	5	9.5	170	26	95	0.50	16	454
AUG											
05...	30	4.2	92	4	8.3	140	21	77	0.40	16	368
SEP											
16...	12	1.7	24	2	5.1	54	7.1	19	0.10	6.4	118

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
JAN										
02...	1.52	--	0.080	--	1.60	--	0.100	--	1.3	--
02...	0.540	--	0.060	--	0.600	--	0.140	--	0.46	--
03...	0.660	--	0.040	--	0.700	--	0.150	--	0.75	--
03...	0.460	--	0.040	--	0.500	--	0.160	--	0.44	--
MAR										
28...	8.66	8.60	0.340	0.300	9.00	8.90	0.670	0.610	1.7	1.7
AUG										
05...	4.89	4.92	0.110	0.080	5.00	5.00	0.160	0.120	0.94	0.98
SEP										
16...	1.55	1.55	0.050	0.050	1.60	1.60	0.130	0.140	1.2	1.2

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN										
02...	--	1.4	1.00	--	--	0.980	--	--	--	--
02...	--	0.60	0.520	--	--	0.470	--	--	--	--
03...	--	0.90	0.570	--	--	0.490	--	--	--	--
03...	--	0.60	0.500	--	--	0.430	--	--	--	--
MAR										
28...	2.3	2.4	4.10	3.90	3.90	4.10	12	7.3	15	19
AUG										
05...	1.1	1.1	3.50	3.30	3.30	3.50	10	7.9	21	4
SEP										
16...	1.3	1.3	1.10	1.00	0.960	0.980	2.9	12	230	15

08070000 EAST FORK SAN JACINTO RIVER NEAR CLEVELAND, TX

LOCATION.--Lat 30°20'11", long 95°06'14", Liberty County, Hydrologic Unit 12040103, near left bank at downstream side of bridge on State Highway 105, 1,880 ft downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 1.2 mi west of Cleveland, and 4.3 mi downstream from Winter Creek.

DRAINAGE AREA.--325 mi^2.

PERIOD OF RECORD.--April 1939 to current year.
Water-quality records.--Chemical analyses: September 1961 to April 1964, January 1968 to September 1989. Biochemical analyses: August 1983 to September. Pesticide analyses: January to August 1984.

GAGE.--Water-stage recorder. Datum of gage is 107.98 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 13, 1955, at site 1,800 ft upstream at datum 5.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. There are no large diversions above station. Rain gage and gage-height telemeter at station.

AVERAGE DISCHARGE.--52 years, 229 ft^3/s (9.57 in/yr), 165,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,000 ft^3/s Nov. 24, 1940 (gage height, 24.1 ft), present site and datum, from rating curve extended above 27,000 ft^3/s; minimum daily, 3.0 ft^3/s Aug. 23, 24, Sept. 27, 28, 1956.
Maximum stage since at least 1900, that of Nov. 24, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 5, 1935, reached a stage of 23.6 ft (discharge, 53,500 ft^3/s), present site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 17	2400	3,020	14.76	Apr. 17	0100	3,180	14.95
Jan. 21	0700	*3,300	*15.08				

Minimum discharge, 14.0 ft^3/s Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	17	20	89	138	970	86	835	103	52	28	111
2	15	17	20	154	120	1650	68	549	104	57	23	117
3	15	17	20	730	110	1830	60	390	81	68	20	140
4	19	23	19	802	433	1440	409	638	102	71	20	348
5	19	27	19	625	1730	611	1910	841	115	161	21	645
6	21	26	19	231	1830	308	1530	538	90	66	35	697
7	19	21	19	127	1900	224	1110	236	73	48	30	214
8	17	25	21	106	1250	179	1310	232	71	43	22	110
9	23	33	20	149	388	145	1120	805	69	40	21	88
10	22	47	20	781	236	122	970	393	68	36	22	76
11	21	34	20	1210	183	108	491	225	72	33	20	88
12	18	30	21	1160	152	102	273	158	167	36	20	77
13	17	25	21	941	134	98	211	119	99	36	19	60
14	17	21	22	347	120	91	678	100	71	30	21	78
15	16	19	22	1270	105	85	2190	265	64	29	34	115
16	16	18	22	1830	93	120	2960	387	86	27	133	75
17	19	18	22	2580	93	356	3060	393	76	38	162	53
18	20	18	29	2940	99	634	2300	775	80	30	81	45
19	18	18	25	2490	162	402	852	1090	70	29	48	74
20	17	18	26	2400	642	199	747	1310	56	24	34	69
21	30	18	26	3170	1240	141	720	1110	48	23	29	48
22	25	19	41	2180	1790	119	293	552	45	23	26	39
23	28	20	39	573	1840	104	191	416	47	26	24	35
24	22	26	26	342	1530	93	148	273	83	36	23	37
25	19	24	24	452	892	84	125	192	105	44	21	35
26	18	23	34	816	389	78	112	148	68	32	20	32
27	17	23	164	763	409	75	169	120	47	30	19	30
28	17	23	234	355	401	72	893	102	46	32	19	28
29	17	25	138	240	---	88	1030	93	54	33	19	27
30	17	22	96	198	---	119	769	95	50	28	19	25
31	17	---	86	164	---	114	---	97	---	26	24	---
TOTAL	591	695	1335	30215	18409	10761	26785	13477	2310	1287	1057	3616
MEAN	19.1	23.2	43.1	975	657	347	893	435	77.0	41.5	34.1	121
MAX	30	47	234	3170	1900	1830	3060	1310	167	161	162	697
MIN	15	17	19	89	93	72	60	93	45	23	19	25
AC-FT	1170	1380	2650	59930	36510	21340	53130	26730	4580	2550	2100	7170
CFSM	.06	.07	.13	3.00	2.02	1.07	2.75	1.34	.24	.13	.10	.37
IN.	.07	.08	.15	3.46	2.11	1.23	3.07	1.54	.26	.15	.12	.41

CAL YR 1990	TOTAL	82170	MEAN	225	MAX	4050	MIN	13	AC-FT	163000	CFSM	.69	IN.	9.41
WTR YR 1991	TOTAL	110538	MEAN	303	MAX	3170	MIN	15	AC-FT	219300	CFSM	.93	IN.	12.65

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX

LOCATION.--Lat 30°08'43", long 95°06'14", Montgomery County, Hydrologic Unit 12040103, on right bank at downstream side of bridge on Farm Road 1485, 1.0 mi upstream from Church House Gully, 5.5 mi east of New Caney, and 5.9 mi upstream from Caney Creek.

DRAINAGE AREA.--388 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1952-58, 1969-76, 1983-84, May 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 43.98 ft above National Geodetic Vertical Datum of 1929 (from Texas Highway Department bench mark).

REMARKS.--Records good except those for estimated daily discharges, which are poor. There are no known diversions. Stage and rainfall radio-telemetry owned by Harris County Flood Control District located at station.

AVERAGE DISCHARGE.--7 years, 280 ft³/s (9.80 in/yr), 202,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft³/s May 19, 1989 (gage height, 24.67 ft) from rating curve extended above 6,200 ft³/s on basis of velocity-area study; minimum, 9.8 ft³/s Oct. 31-Nov. 4, 1990.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1973 reached a stage of 29.6 ft, from floodmark on left bank, identified by local resident. Flood in November 1940 may have been slightly higher.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 19	0900	*2,810	*16.16	Apr. 18	1400	2,780	16.08
Apr. 6	1400	2,700	15.86				

Minimum discharge, 9.8 ft³/s Oct. 31 to Nov. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	9.8	27	80	203	e1160	143	761	101	57	33	24
2	17	9.8	26	92	176	e1980	110	780	102	56	33	78
3	17	9.8	24	337	158	e2200	91	518	103	58	32	97
4	18	10	24	580	413	e1730	100	452	85	55	32	117
5	29	13	25	630	1440	e1300	865	943	98	69	34	243
6	26	18	25	514	1690	e700	2520	1110	109	77	34	421
7	22	19	25	256	1590	420	1810	575	105	70	45	446
8	23	17	24	157	e1500	288	1260	295	103	63	49	175
9	21	25	24	145	e750	232	1260	458	78	58	38	103
10	29	36	24	478	e510	194	1030	746	73	53	34	118
11	26	39	24	822	e320	169	909	405	69	49	34	79
12	25	31	24	963	253	153	580	251	76	44	35	75
13	23	28	24	914	215	143	403	186	147	42	33	72
14	21	24	24	751	191	135	771	149	104	42	31	64
15	19	21	25	756	171	126	1600	158	151	41	78	68
16	19	19	26	1170	152	128	2020	318	186	38	39	92
17	19	18	26	1510	139	215	2420	581	147	37	102	69
18	19	18	26	2020	136	412	2710	470	120	41	126	53
19	23	18	32	2700	171	547	2120	769	83	39	77	46
20	16	18	32	2150	283	377	1070	1010	68	36	49	61
21	15	18	31	1900	905	232	839	1140	62	37	38	59
22	43	18	31	2340	1430	180	753	1010	93	33	32	48
23	23	18	38	1770	1640	154	404	548	102	32	27	42
24	21	19	48	660	e1840	137	280	398	91	33	24	40
25	18	22	36	446	e1070	123	226	269	105	40	23	40
26	14	25	32	510	e467	112	195	194	105	45	22	41
27	12	24	66	717	e490	105	198	155	84	39	21	37
28	11	24	162	655	e481	100	288	127	72	36	21	35
29	11	24	214	387	---	157	815	110	64	36	21	33
30	10	25	146	289	---	141	949	104	61	37	21	32
31	10	---	107	240	---	146	---	105	---	36	24	---
TOTAL	618	618.4	1422	26939	18784	14196	28739	15095	2947	1429	1242	2908
MEAN	19.9	20.6	45.9	869	671	458	958	487	98.2	46.1	40.1	96.9
MAX	43	39	214	2700	1840	2200	2710	1140	186	77	126	446
MIN	10	9.8	24	80	136	100	91	104	61	32	21	24
AC-FT	1230	1230	2820	53430	37260	28160	57000	29940	5850	2830	2460	5770
CFSM	.05	.05	.12	2.24	1.73	1.18	2.47	1.25	.25	.12	.10	.25
IN.	.06	.06	.14	2.58	1.80	1.36	2.76	1.45	.28	.14	.12	.28

CAL YR 1990	TOTAL	77264.4	MEAN	212	MAX	3200	MIN	9.8	AC-FT	153300	CFSM	.55	IN. 7.41
WTR YR 1991	TOTAL	114937.4	MEAN	315	MAX	2710	MIN	9.8	AC-FT	228000	CFSM	.81	IN. 11.02

e Estimated

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: August 1983 to current year. Pesticide analyses: August 1985 to September 1990.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1984 to current year.
WATER TEMPERATURE: June 1984 to current year.

INSTRUMENTATION.--Since June 1984, specific conductance and water temperature are recorded continuously at this station. Since June 1984, a stage-activated water sampler provides water-quality samples over selected runoff events.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum specific conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 870 microsiemens May 7, 1985; minimum, 21 microsiemens May 19, 1989.
WATER TEMPERATURE: Maximum, 32.0°C Aug. 21, 1990; minimum, 1.0 °C Dec. 24, 1989.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 332 microsiemens Dec. 26; minimum, 50 microsiemens Apr. 6.
WATER TEMPERATURE: Maximum, 30.0°C July 14, 15; minimum, 6.5°C Dec. 25.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
MAR											
28...	0735	100	220	7.3	20.0	7.5	83	44	150	57	16
APR											
05...	2400	2030	--	--	--	--	--	--	--	--	--
06...	1600	2690	--	--	--	--	--	--	--	--	--
07...	0400	2140	--	--	--	--	--	--	--	--	--
08...	0400	1210	--	--	--	--	--	--	--	--	--
AUG											
06...	1130	35	217	7.0	26.5	6.8	84	72	510	46	8
SEP											
18...	1234	53	207	7.4	26.5	7.2	89	72	680	51	13

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAR											
28...	19	2.4	19	1	1.6	41	6.4	35	<0.10	14	123
APR											
05...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	15	2.1	25	2	1.6	38	4.0	41	<0.10	14	127
SEP											
18...	17	2.1	17	1	2.9	38	4.9	33	<0.10	15	116

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
MAR										
28...	0.170	0.190	0.030	0.020	0.200	0.210	0.060	0.040	0.24	0.26
APR										
05...	0.056	--	0.040	--	0.096	--	0.040	--	1.3	--
06...	0.050	--	0.050	--	0.100	--	0.050	--	0.85	--
07...	--	--	0.040	--	<0.050	--	0.050	--	0.65	--
08...	0.002	--	0.050	--	0.052	--	0.060	--	0.74	--
AUG										
06...	0.190	--	0.010	<0.010	0.200	0.210	0.030	0.030	0.37	0.27
SEP										
18...	0.230	--	0.020	<0.010	0.250	0.250	0.030	0.020	0.47	0.38

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
28...	0.30	0.30	0.090	0.040	0.010	0.050	0.03	8.8	330	48
APR										
05...	--	1.3	0.080	--	--	0.030	--	--	--	--
06...	--	0.90	0.060	--	--	0.030	--	--	--	--
07...	--	0.70	0.060	--	--	0.020	--	--	--	--
08...	--	0.80	0.070	--	--	0.030	--	--	--	--
AUG										
06...	0.30	0.40	0.120	0.040	0.040	0.060	0.12	4.3	130	120
SEP										
18...	0.40	0.50	0.140	0.050	0.040	0.080	0.12	9.5	150	56

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1990 TO SEPTEMBER 1991

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICROSIEMENS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1990	618	175	107	178	29	48	12	20	43
NOV.	1990	618.4	179	108	181	30	50	12	20	43
DEC.	1990	1422	172	105	404	28	109	12	46	42
JAN.	1991	26939	93	62	4490	13	915	10	745	27
FEB.	1991	18784	101	66	3340	14	716	10	528	29
MAR.	1991	14196	136	85	3260	21	803	11	432	36
APR.	1991	28739	114	74	5710	17	1280	11	854	32
MAY	1991	15095	148	92	3770	23	937	12	490	39
JUNE	1991	2947	186	111	881	32	258	10	83	43
JULY	1991	1429	196	116	448	34	131	11	42	45
AUG.	1991	1242	173	105	353	29	96	12	39	42
SEPT	1991	2908	144	90	703	23	180	11	87	37
TOTAL		114937.4	**	**	23700	**	5530	**	3390	**
WTD.AVG.		315	120	76	**	18	**	11	**	33

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	174	97	140	173	163	169	195	190	193	274	232	245
2	106	94	98	173	164	169	192	187	190	289	188	263
3	180	95	131	175	167	171	191	185	188	224	132	195
4	209	100	174	192	174	182	187	181	184	137	75	102
5	208	194	200	193	186	190	183	177	180	90	76	84
6	196	195	195	192	189	191	184	180	182	101	91	96
7	197	192	194	192	187	189	186	181	184	144	102	109
8	197	192	194	206	176	187	187	182	185	150	145	148
9	193	187	191	181	147	166	189	183	186	155	128	150
10	189	179	185	175	160	169	189	184	187	138	97	120
11	189	186	188	159	153	156	190	187	188	104	93	96
12	189	182	185	160	151	157	191	186	189	118	98	108
13	186	180	183	159	152	156	191	185	188	128	119	124
14	186	173	180	159	151	154	189	185	188	121	115	117
15	183	172	178	162	155	159	189	187	188	115	84	97
16	182	171	177	156	151	154	194	185	188	85	68	74
17	180	171	177	151	148	149	188	186	187	79	72	75
18	186	179	182	152	149	150	195	185	188	84	77	81
19	191	187	189	160	151	155	187	183	185	77	75	76
20	192	182	187	167	159	163	191	185	187	76	73	74
21	189	165	180	175	166	170	191	184	187	81	75	79
22	187	170	178	262	175	199	187	184	185	80	76	78
23	175	148	155	221	216	219	188	178	185	86	77	81
24	165	144	153	219	209	213	180	177	178	112	87	99
25	168	155	163	214	209	211	188	178	181	132	113	123
26	157	152	155	212	209	210	332	183	223	159	133	140
27	159	153	156	218	201	211	179	142	164	162	116	136
28	163	155	160	214	205	208	176	143	163	114	101	104
29	168	158	163	206	197	201	155	123	137	105	94	98
30	171	160	166	199	194	197	149	126	134	98	94	95
31	173	162	169	---	---	---	239	155	211	102	98	100
MONTH	209	94	172	262	147	179	332	123	183	289	68	115

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	106	102	104	144	100	116	233	213	221	179	128	154
2	110	105	108	106	89	99	274	237	259	149	123	130
3	114	109	112	99	90	93	276	266	269	166	123	142
4	116	69	101	106	99	103	278	216	256	189	101	146
5	69	56	61	116	106	111	220	51	147	116	73	93
6	61	56	58	137	116	124	60	50	56	132	90	116
7	66	61	64	153	137	145	98	59	72	173	125	143
8	66	64	65	166	153	159	118	101	109	186	153	163
9	104	64	95	177	166	172	125	102	117	179	117	156
10	125	105	115	186	178	183	137	118	126	132	79	105
11	144	126	136	195	187	192	148	118	129	129	114	121
12	157	144	151	203	195	200	160	124	139	182	130	149
13	165	157	161	209	202	206	161	139	146	199	159	173
14	172	165	169	212	207	210	173	78	128	236	177	192
15	180	172	176	212	210	211	99	78	89	241	177	199
16	185	180	183	212	206	210	105	70	87	247	163	197
17	191	185	188	206	194	200	108	87	96	219	120	164
18	197	190	193	227	186	197	122	94	104	226	168	196
19	197	184	191	227	172	191	137	95	112	206	123	169
20	184	176	180	182	174	179	169	125	145	171	118	142
21	178	106	144	194	181	187	158	138	148	176	111	139
22	107	101	105	200	193	197	162	127	141	182	128	165
23	104	101	103	205	198	203	171	135	155	157	136	147
24	105	103	104	209	203	207	190	150	170	167	145	155
25	106	104	105	216	207	211	189	162	172	218	163	174
26	120	105	111	224	213	218	206	172	186	230	174	182
27	135	121	128	232	221	225	221	179	192	194	185	190
28	150	136	143	232	223	230	230	178	198	200	193	195
29	---	---	---	211	185	197	229	124	155	210	200	206
30	---	---	---	214	185	197	180	127	147	219	210	215
31	---	---	---	230	214	225	---	---	---	223	212	218
MONTH	197	56	127	232	89	181	278	50	149	247	73	162

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	229	219	223	222	213	219	188	177	181	193	189	191
2	227	220	222	212	201	206	189	187	188	193	188	190
3	301	221	264	220	205	214	198	188	192	189	139	159
4	251	225	234	215	177	197	213	199	207	---	---	e135
5	266	251	258	198	184	191	213	208	210	182	90	130
6	266	203	235	197	152	181	217	212	214	147	77	93
7	203	132	185	146	107	119	224	217	221	95	79	85
8	192	127	153	132	108	119	219	210	212	119	96	108
9	222	195	208	168	134	151	215	208	212	135	120	128
10	230	223	227	188	169	181	208	196	201	142	98	126
11	224	219	223	205	188	194	196	193	195	145	110	128
12	231	219	223	219	207	212	195	192	194	165	146	156
13	240	202	223	214	208	210	194	182	187	180	166	173
14	303	227	262	222	215	220	193	183	187	185	180	182
15	223	113	162	223	219	221	195	52	134	203	184	191
16	160	56	131	229	219	225	210	135	181	220	194	209
17	85	58	70	232	225	228	209	167	198	245	192	219
18	110	80	87	232	227	229	162	110	138	241	194	210
19	151	118	133	227	216	220	147	95	108	206	195	199
20	178	152	166	222	220	221	169	101	127	225	207	218
21	201	179	190	222	199	217	170	144	155	222	214	219
22	203	89	165	217	210	213	155	145	151	214	190	199
23	154	119	132	219	208	215	152	148	150	215	191	203
24	189	155	171	207	197	202	150	148	149	228	216	222
25	207	189	196	213	197	207	159	151	155	237	226	234
26	215	196	209	210	205	207	169	159	163	224	213	217
27	210	178	197	208	205	206	179	168	171	214	210	212
28	205	178	189	205	202	205	188	179	185	213	202	209
29	204	195	199	203	196	201	191	188	190	204	198	201
30	212	198	201	195	180	185	191	188	190	209	203	205
31	---	---	---	180	176	179	190	179	186	---	---	---
MONTH	303	56	191	232	107	200	224	52	178	245	77	178

e Estimated

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	24.5	22.5	23.5	18.0	16.0	17.0	15.5	13.5	14.5	9.0	8.5	9.0
2	24.5	23.0	24.0	18.0	16.5	17.0	17.0	15.5	16.0	9.5	8.5	9.0
3	25.0	23.5	24.5	19.5	18.0	19.0	17.0	13.5	15.5	10.0	9.0	9.5
4	25.0	24.0	24.5	19.5	17.5	19.0	13.5	12.0	12.5	10.0	9.5	9.5
5	25.5	23.5	24.5	17.0	15.0	16.0	12.5	10.5	11.5	10.5	9.5	10.0
6	25.5	24.0	24.5	16.0	14.0	15.0	12.5	11.0	12.0	11.5	10.5	11.0
7	26.0	24.5	25.5	17.0	15.0	16.0	13.5	11.5	12.5	11.5	11.0	11.5
8	26.0	24.5	25.5	16.0	14.5	15.0	11.5	10.0	11.0	11.0	11.0	11.0
9	25.5	21.0	23.5	14.5	13.5	14.0	11.0	9.0	10.5	11.0	11.0	11.0
10	21.0	19.0	20.0	14.5	12.5	13.5	11.5	9.0	10.5	11.5	11.0	11.5
11	20.0	18.0	19.5	14.0	12.5	13.5	12.0	10.5	11.0	11.5	11.5	11.5
12	19.5	17.5	18.5	14.0	12.0	13.0	13.5	11.5	12.5	11.5	10.5	11.0
13	19.0	17.0	18.0	14.0	12.5	13.5	14.5	12.5	13.5	10.5	9.5	10.0
14	20.0	17.0	18.5	14.5	12.5	13.5	15.5	13.5	14.5	10.0	9.5	10.0
15	21.0	19.0	20.0	15.0	13.0	14.0	17.0	15.0	16.0	11.5	10.0	11.0
16	21.0	19.0	20.0	16.5	14.5	15.5	17.5	16.0	16.5	11.0	10.5	11.0
17	20.5	20.0	20.5	16.5	14.5	15.5	18.5	17.5	18.0	11.0	10.5	11.0
18	20.5	19.0	20.0	17.0	15.0	16.0	18.5	16.5	17.5	11.0	10.5	11.0
19	19.0	17.0	18.5	17.5	16.0	17.0	16.0	14.5	15.5	11.0	10.5	10.5
20	19.5	17.0	18.5	18.5	17.0	18.0	17.5	15.5	16.5	10.5	10.0	10.5
21	19.5	18.0	19.0	19.0	17.5	18.5	18.5	16.0	17.5	10.5	9.5	10.0
22	18.5	17.0	18.0	20.0	18.5	19.0	15.5	11.0	13.0	9.5	9.0	9.0
23	17.5	16.0	17.0	19.5	17.5	19.0	11.0	9.0	10.0	9.0	9.0	9.0
24	17.5	15.5	16.5	17.0	15.5	16.5	9.0	7.5	8.5	10.0	9.5	9.5
25	17.0	15.0	16.0	19.0	17.0	18.0	7.5	6.5	7.0	10.5	9.5	10.0
26	16.0	14.0	15.0	20.0	18.5	19.0	8.0	7.5	7.5	11.0	10.0	10.5
27	16.5	14.0	15.5	20.0	19.5	20.0	8.0	7.5	8.0	11.0	10.0	10.5
28	16.5	14.5	15.5	20.0	17.5	19.0	9.5	8.0	8.5	11.5	11.0	11.5
29	17.0	15.0	16.5	17.5	15.5	16.5	11.0	9.5	10.5	13.0	11.5	12.5
30	17.5	15.5	16.5	15.0	13.5	14.5	12.0	10.5	11.5	13.0	12.0	12.5
31	17.5	15.5	16.5	---	---	---	10.5	9.5	10.0	12.0	11.0	11.5
MONTH	26.0	14.0	20.0	20.0	12.0	16.5	18.5	6.5	12.5	13.0	8.5	10.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.5	10.0	10.5	17.0	13.5	15.5	18.5	16.0	17.0	22.5	22.0	22.0
2	11.5	9.5	10.5	17.0	16.5	16.5	19.0	16.0	17.5	22.0	21.5	22.0
3	12.0	10.0	11.0	17.0	16.0	16.5	18.5	17.0	17.5	23.0	22.0	22.5
4	13.5	11.0	12.0	16.0	15.0	15.5	18.5	18.0	18.0	23.0	22.0	22.5
5	14.5	13.5	14.0	16.0	15.0	15.5	18.0	17.5	18.0	23.0	22.0	22.5
6	14.5	14.5	14.5	17.5	16.(	16.5	18.5	17.5	18.0	22.0	21.0	21.5
7	14.5	14.0	14.5	18.0	17.0	17.5	19.5	18.5	19.0	21.0	20.5	21.0
8	14.5	13.5	14.0	18.5	17.0	17.5	20.5	19.5	20.0	20.5	20.0	20.5
9	14.0	13.0	13.5	18.0	16.0	17.0	21.0	20.5	20.5	20.5	19.5	20.0
10	14.0	13.0	13.5	17.5	15.5	16.0	21.0	21.0	21.0	20.5	19.5	20.0
11	15.0	13.5	14.0	16.5	15.0	16.0	21.5	21.0	21.0	22.5	20.5	21.5
12	16.0	14.5	15.0	17.5	16.0	16.5	21.5	21.0	21.5	23.5	22.0	22.5
13	16.0	15.0	15.5	17.5	15.5	16.5	21.5	21.5	21.5	25.0	22.5	23.5
14	16.5	15.0	15.5	16.0	15.0	15.5	21.5	20.0	21.0	24.5	23.0	24.0
15	15.0	13.5	14.5	15.0	14.0	14.5	20.0	19.5	20.0	24.5	23.0	23.5
16	13.5	12.5	13.0	14.0	13.5	14.0	20.0	20.0	20.0	24.0	22.5	23.0
17	14.0	12.5	13.5	15.5	14.0	14.5	20.5	20.0	20.5	23.0	22.0	22.5
18	15.0	14.0	14.5	15.5	14.5	15.0	21.5	21.0	21.0	23.5	22.5	23.0
19	15.5	15.0	15.5	15.5	14.0	15.0	22.0	21.5	21.5	22.5	22.5	22.5
20	15.0	14.5	15.0	16.5	15.0	16.0	22.0	21.0	21.5	23.0	22.5	23.0
21	14.5	13.5	14.0	17.5	16.5	17.0	21.0	20.5	20.5	23.5	23.0	23.0
22	13.5	12.5	13.0	19.0	17.5	18.5	21.5	20.5	21.0	23.5	23.0	23.5
23	13.0	12.0	12.5	18.5	17.5	18.0	21.5	20.5	21.0	24.0	23.0	23.5
24	13.0	12.5	12.5	19.5	17.0	18.0	21.0	20.0	20.5	24.5	23.5	24.0
25	13.0	12.5	12.5	19.0	17.5	18.5	22.5	20.5	21.5	25.5	24.0	24.5
26	12.5	12.0	12.0	21.0	18.5	19.5	22.0	21.5	22.0	26.0	24.0	25.0
27	12.5	11.5	12.0	21.0	20.0	20.5	23.0	22.0	22.5	26.5	24.5	25.5
28	13.0	12.0	12.5	21.0	19.5	20.5	23.5	22.5	23.0	27.0	25.0	25.5
29	---	---	---	20.5	19.0	19.5	23.0	22.0	22.5	26.0	25.0	25.5
30	---	---	---	19.5	17.5	18.5	23.0	22.0	22.5	26.0	25.0	25.5
31	---	---	---	19.0	16.5	17.5	---	---	---	27.0	24.5	25.5
MONTH	16.5	9.5	13.5	21.0	13.5	17.0	23.5	16.0	20.5	27.0	19.5	23.0

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

08070500 CANEY CREEK NEAR SPLENDORA, TX

LOCATION.--Lat 30°15'34", long 95°18'08", Montgomery County, Hydrologic Unit 12040103, on left bank at downstream side of bridge on Farm Road 2090, 4 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, and 8 mi west of Splendora.

DRAINAGE AREA.--105 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1943 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 118.44 ft above National Geodetic Vertical Datum of 1929. Prior to June 17, 1965, at site 170 ft upstream at datum 5.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No diversion above station.

AVERAGE DISCHARGE.--48 years, 76.2 ft^3/s (9.85 in/yr), 55,210 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft^3/s June 14, 1973 (gage height, 26.30 ft); minimum, 4.1 ft^3/s Oct. 26, 1956 (caused by construction upstream).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1885, 27.0 ft in November 1940, present site and datum, from information by local resident. Flood in May 1935 reached a stage of 24.3 ft, present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 16	1200	*2,230	*14.20	Apr. 15	2200	2,200	14.14
Jan. 19	2000	2,140	13.98				

Minimum discharge, 8.6 ft^3/s Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	13	13	24	54	555	46	60	45	e22	17	16
2	8.8	13	14	73	52	577	44	51	39	e22	15	14
3	8.6	14	14	449	52	208	43	154	42	e22	14	13
4	9.7	16	14	254	148	151	59	447	79	e22	12	51
5	11	22	13	60	826	91	385	637	64	e22	12	46
6	14	22	13	46	410	73	512	136	41	e22	12	46
7	12	18	13	43	139	60	222	68	37	e22	12	25
8	11	18	13	35	94	54	141	95	43	e22	12	21
9	12	30	13	47	79	49	97	126	41	e22	15	19
10	13	35	13	305	73	47	72	77	39	22	14	26
11	12	23	12	325	67	46	72	60	61	21	14	26
12	12	19	14	108	62	46	70	48	41	21	12	17
13	11	17	13	69	60	44	61	41	33	20	12	14
14	11	15	12	56	59	42	410	38	28	19	13	12
15	11	15	11	874	55	41	1650	40	75	19	22	12
16	11	15	12	1670	52	74	953	46	85	18	20	15
17	11	16	13	190	52	200	228	158	46	18	18	13
18	14	16	17	312	55	144	333	200	33	17	17	13
19	14	16	15	1420	85	78	147	180	29	17	19	21
20	12	15	14	670	459	63	96	209	24	16	15	15
21	13	15	14	154	138	60	74	108	38	17	14	14
22	15	16	14	106	279	55	63	61	29	19	13	15
23	16	17	13	90	205	54	61	53	26	32	13	15
24	14	18	12	86	114	50	56	49	27	28	13	15
25	13	16	12	161	92	48	53	49	27	20	13	15
26	13	15	15	103	86	48	51	40	31	18	13	14
27	13	15	84	81	83	48	165	35	23	16	12	14
28	13	15	70	74	78	47	401	34	23	14	12	14
29	13	14	40	68	---	52	97	36	24	14	12	14
30	13	13	28	65	---	60	98	40	e22	13	11	13
31	13	---	25	59	---	51	---	48	---	14	15	---
TOTAL	377.2	522	593	8077	4008	3216	6760	3424	1195	611	438	578
MEAN	12.2	17.4	19.1	261	143	104	225	110	39.8	19.7	14.1	19.3
MAX	16	35	84	1670	826	577	1650	637	85	32	22	51
MIN	8.6	13	11	24	52	41	43	34	22	13	11	12
AC-FT	748	1040	1180	16020	7950	6380	13410	6790	2370	1210	869	1150
CFSM	.12	.17	.18	2.48	1.36	.99	2.15	1.05	.38	.19	.13	.18
IN.	.13	.18	.21	2.86	1.42	1.14	2.39	1.21	.42	.22	.16	.20

CAL YR 1990	TOTAL	18791.1	MEAN	51.5	MAX	1140	MIN	8.3	AC-FT	37270	CFSM	.49	IN.	6.66
WTR YR 1991	TOTAL	29799.2	MEAN	81.6	MAX	1670	MIN	8.6	AC-FT	59110	CFSM	.78	IN.	10.56

e Estimated

08070500 CANEY CREEK NEAR SPLENDORA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Chemical analyses: October 1962 to April 1964. Chemical, biochemical, and pesticide analyses: August 1983 to current year. Sediment analyses: February 1966, April 1973 to March 1975.

INSTRUMENTATION.--Stage-activated water sampler since November 1984 provides water-quality samples over selected runoff events.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
JAN											
03...	1500	546	--	--	--	--	--	--	--	--	--
03...	1900	666	--	--	--	--	--	--	--	--	--
03...	2300	755	--	--	--	--	--	--	--	--	--
04...	0300	609	--	--	--	--	--	--	--	--	--
MAR											
28...	0900	46	150	7.2	19.0	7.9	86	48	110	48	10
AUG											
05...	1200	12	92	6.4	25.5	7.4	90	150	900	24	6
SEP											
18...	0908	14	90	7.2	24.0	7.1	84	100	800	25	1

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
JAN											
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
MAR											
28...	16	2.0	12	0.8	1.4	38	5.4	23	<0.10	13	97
AUG											
05...	7.2	1.4	8.8	0.8	0.90	18	2.1	15	<0.10	12	60
SEP											
18...	7.6	1.4	8.3	0.7	1.2	24	1.8	12	<0.10	12	61

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
JAN										
03...	0.170	--	0.030	--	0.200	--	0.070	--	0.73	--
03...	0.180	--	0.020	--	0.200	--	0.040	--	0.36	--
03...	0.150	--	0.050	--	0.200	--	0.070	--	0.53	--
04...	0.170	--	0.030	--	0.200	--	0.050	--	0.45	--
MAR										
28...	0.240	0.240	0.010	0.010	0.250	0.250	0.040	0.020	0.36	0.38
AUG										
05...	0.230	--	0.010	<0.010	0.240	0.240	0.030	<0.010	--	--
SEP										
18...	0.320	--	0.010	<0.010	0.330	0.350	0.030	0.020	0.27	0.28

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN										
03...	--	0.80	0.150	--	--	0.060	--	--	--	--
03...	--	0.40	0.130	--	--	0.050	--	--	--	--
03...	--	0.60	0.200	--	--	0.090	--	--	--	--
04...	--	0.50	0.160	--	--	0.090	--	--	--	--
MAR										
28...	0.40	0.40	0.040	0.050	<0.010	<0.010	--	5.1	350	40
AUG										
05...	0.20	<0.20	0.050	0.030	0.020	0.030	0.06	2.6	170	52
SEP										
18...	0.30	0.30	0.060	0.020	0.020	0.030	0.06	3.6	250	37

08071280 LUCE BAYOU ABOVE LAKE HOUSTON NEAR HUFFMAN, TX

LOCATION.--Lat 30°06'34", long 95°03'35", Liberty County, Hydrologic Unit 12040103, on left bank, in Tricontinental Pipeline Co. right-of-way, 1.1 mi upstream from Key Gully, 3.1 mi east of Huffman-Cleveland Road, and 6.3 mi northeast of Huffman.

DRAINAGE AREA.--218 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, at site 2.2 mi downstream, water years, 1970, 1972, 1975; February to April 1984 (discharge measurements only), May 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 39.91 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. There are diversions above station for irrigation, but amounts are unknown. Harris County Flood Control District stage and rainfall radio-telemetry located at station.

AVERAGE DISCHARGE.--7 years, 194 ft³/s (12.09 in/yr), 140,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft³/s May 19, 1989 (gage height, 33.45 ft); no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 19	1100	1,480	21.17	Apr. 8	0700	*4,010	*24.40
Feb. 23	1400	1,570	21.36	Apr. 18	0900	2,560	22.88
Mar. 3	2300	1,470	21.15				

Minimum discharge, 0.16 ft³/s Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	1.6	.36	4.1	55	407	34	35	94	47	1.7	1.8
2	.19	1.3	.45	17	46	655	23	48	68	52	1.3	1.1
3	.16	1.2	.50	85	40	1190	18	42	39	72	1.1	1.2
4	.32	1.4	.45	109	246	1330	123	31	28	72	1.5	1.2
5	1.9	1.8	.39	200	874	960	644	32	20	83	2.3	4.2
6	.80	1.6	.44	118	856	666	1870	152	14	101	1.9	8.7
7	.79	1.6	.50	22	908	394	2600	351	11	217	1.0	8.7
8	5.2	1.7	.49	2.1	1000	207	3890	593	28	170	.90	5.7
9	4.7	7.5	.41	16	865	123	3030	695	16	62	1.5	4.2
10	3.5	7.3	.34	456	613	78	2030	465	14	31	1.1	3.1
11	2.7	3.7	.34	657	311	57	1480	397	20	16	.91	2.7
12	1.8	11	.34	623	158	47	1120	318	17	9.2	.83	6.9
13	6.5	10	.28	590	96	40	805	191	12	6.2	.80	15
14	4.7	6.9	.24	519	70	34	822	105	10	4.4	.83	4.9
15	3.1	4.9	.27	615	55	29	1690	73	45	3.3	32	2.6
16	2.1	3.5	.29	679	46	31	1960	137	134	2.7	121	6.4
17	1.7	2.4	.32	678	41	51	2270	302	438	2.5	38	5.3
18	3.3	1.6	.37	912	37	66	2460	302	551	2.3	18	2.7
19	1.8	1.2	.37	1440	72	73	1830	340	512	2.1	7.1	1.7
20	1.4	.88	.48	1290	132	66	1150	301	305	1.9	3.8	1.2
21	1.7	.68	.59	1110	445	53	722	218	87	1.9	2.0	1.5
22	2.5	.74	.58	987	1180	45	313	129	48	1.8	1.3	2.4
23	4.4	1.2	.69	772	1530	38	139	87	60	1.8	1.1	3.3
24	11	1.6	.76	525	1500	31	89	68	79	3.3	1.1	2.1
25	6.6	1.7	.83	307	1190	26	64	63	81	3.1	.81	2.0
26	1.7	1.2	.93	216	845	23	51	46	56	2.4	.71	1.4
27	.90	.82	6.6	182	508	21	43	33	37	4.1	.61	1.1
28	.81	.55	7.3	136	276	19	47	23	27	7.1	.58	4.4
29	.65	.68	34	102	---	23	56	17	20	3.9	.58	3.0
30	1.8	.45	26	78	---	32	43	49	30	2.8	.59	1.9
31	1.8	---	11	62	---	42	---	101	---	2.1	3.3	---
TOTAL	80.76	82.70	96.91	13509.2	13995	6857	31416	5744	2901	991.9	250.25	112.4
MEAN	2.61	2.76	3.13	436	500	221	1047	185	96.7	32.0	8.07	3.75
MAX	11	11	34	1440	1530	1330	3890	695	551	217	121	15
MIN	.16	.45	.24	2.1	37	19	18	17	10	1.8	.58	1.1
AC-FT	160	164	192	26800	27760	13600	62310	11390	5750	1970	496	223
CFSM	.01	.01	.01	2.00	2.29	1.01	4.80	.85	.44	.15	.04	.02
IN.	.01	.01	.02	2.31	2.39	1.17	5.36	.98	.50	.17	.04	.02

CAL YR 1990 TOTAL 31070.51 MEAN 85.1 MAX 1690 MIN .16 AC-FT 61630 CFSM .39 IN. 5.30
WTR YR 1991 TOTAL 76037.12 MEAN 208 MAX 3890 MIN .16 AC-FT 150800 CFSM .96 IN. 12.98

08071280 LUCE BAYOU ABOVE LAKE HOUSTON NEAR HUFFMAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1984 to current year.

INSTRUMENTATION.--Stage-activated water sampler since May 1984 provides water-quality samples over selected runoff events.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
MAR											
27...	1413	20	165	6.4	21.5	5.0	57	36	210	48	11
APR											
04...	0610	234	--	--	--	--	--	--	--	--	--
04...	2210	451	--	--	--	--	--	--	--	--	--
06...	0210	1870	--	--	--	--	--	--	--	--	--
07...	1110	3900	--	--	--	--	--	--	--	--	--
AUG											
06...	1000	2.0	230	7.1	25.5	3.9	48	190	180	80	3
SEP											
18...	1100	2.8	225	7.2	25.5	5.2	64	80	180	47	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAR											
27...	15	2.5	15	0.9	2.0	37	5.2	27	<0.10	8.3	100
APR											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	27	3.1	16	0.8	1.6	77	3.6	23	0.10	5.4	127
SEP											
18...	15	2.3	25	2	3.1	56	6.7	30	0.20	5.2	122

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
MAR										
27...	0.300	0.280	0.020	0.020	0.320	0.300	0.100	0.080	1.3	1.2
APR										
04...	--	--	0.030	--	<0.050	--	0.030	--	0.47	--
04...	0.250	--	0.080	--	0.330	--	0.080	--	0.52	--
06...	0.120	--	0.030	--	0.150	--	0.090	--	0.91	--
07...	0.230	--	0.040	--	0.270	--	0.110	--	0.19	--
AUG										
06...	0.100	--	0.010	<0.010	0.110	0.110	0.040	0.030	0.66	0.57
SEP										
18...	0.120	--	0.020	<0.010	0.140	0.140	0.030	0.020	0.57	0.48

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAR										
27...	1.3	1.4	0.150	0.100	0.040	0.090	0.12	21	1100	91
APR										
04...	--	0.50	0.080	--	--	<0.010	--	--	--	--
04...	--	0.60	0.070	--	--	0.020	--	--	--	--
06...	--	1.0	0.060	--	--	<0.010	--	--	--	--
07...	--	0.30	0.010	--	--	<0.010	--	--	--	--
AUG										
06...	0.60	0.70	0.070	0.040	0.030	0.041	0.09	10	200	210
SEP										
18...	0.50	0.60	0.150	0.080	0.050	0.090	0.15	12	340	82

08072000 LAKE HOUSTON NEAR SHELDON, TX

LOCATION.--Lat 29°54'58", long 95°08'28", Harris County, Hydrologic Unit 12040101, at intake structure on San Jacinto River near right bank 100 ft upstream from Lake Houston Dam, 4.0 mi north of Sheldon, 4.6 mi upstream from bridge on U.S. Highway 90, and 18 mi northeast of Houston.

DRAINAGE AREA.--2,828 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1954 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage at dam is 0.70 ft below National Geodetic Vertical Datum of 1929; unadjusted for land-surface subsidence.

REMARKS.--The lake is formed by two earthfill embankment sections and a 3,160-foot long concrete spillway midway between the embankment sections. The dam was completed and storage began Apr. 9, 1954. The spillway includes two tainter gates, 18.0 x 20.5 ft, that can be used for control of releases below gage heights of 44.5 ft and above 28.0 ft. In addition, there is a 36-inch-diameter sluice gate that is used for low-flow releases. Water is used for irrigation, municipal, and industrial supply in the Houston metropolitan area. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	63.0	-
Design flood	57.0	-
Crest of spillway	44.5	146,700
Crest of tainter gates (sill)	28.0	22,800
Lowest gated outlet (invert)	22.0	6,180

COOPERATION.--The capacity table, furnished by the city of Houston, is based on a sedimentation study made in 1965. Records of diversions were furnished by the San Jacinto River Authority and the city of Houston.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 219,400 acre-ft May 19, 1989 (gage height, 49.60 ft); minimum since first filling of lake in August 1954, 53,380 acre-ft Dec. 1, 1971 (gage height, 34.08 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 174,500 acre-ft Jan. 19 at 0900 to 1200 hours (gage height, 46.63 ft); minimum, 119,500 acre-ft Oct. 17 (gage height, 42.12 ft).

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

42.0	118,200	44.0	140,700	46.0	165,900
43.0	129,100	45.0	152,900	47.0	179,600

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	124700	125200	129400	133200	154200	159800	154800	157100	156400	155500	150600	145800
2	124200	125000	128400	136900	154600	163600	153700	157100	156000	156000	150000	145500
3	123800	124700	129000	147200	153900	162100	154100	157700	156000	155900	149400	146400
4	124300	125800	128400	154300	161600	162000	158400	158900	157300	156400	149100	147800
5	124100	125300	127900	157200	165400	159900	167500	163200	157300	156000	149200	151200
6	123500	125000	128200	158500	162300	158600	170700	163400	156700	155100	148900	154100
7	123200	125000	127700	156400	158700	157300	167800	162600	156100	155900	148500	155900
8	122800	126900	127200	155100	157600	155900	165900	161200	158000	156400	148100	156100
9	124200	128900	127100	156700	155200	154600	163600	159800	158400	155800	147800	156400
10	122700	130000	127000	163700	152000	154800	159800	158100	157200	154500	147300	155800
11	122000	130400	127000	162300	151800	154700	156800	156900	157200	154500	146900	155400
12	121600	130500	126200	161000	153900	154600	155800	155100	156400	153900	146400	155000
13	120900	130500	126500	161000	155000	153300	158400	153800	155600	153400	145700	154700
14	120400	130400	125900	161700	154500	154100	167500	155100	155100	152900	146100	154500
15	120200	130100	126300	165800	153900	154500	172900	158400	164600	152400	148500	154200
16	119800	129900	126200	168800	154100	155400	171200	159800	164500	152000	149800	153800
17	122100	129900	125600	169500	153800	156100	168600	163300	162600	151800	149800	153900
18	125100	129700	126700	173600	153200	156500	168900	163900	158000	151100	150200	154100
19	125500	129400	126600	171400	154200	156700	166000	163800	155500	150600	149800	153200
20	125600	129200	126300	167800	155000	156800	160400	163300	152300	150500	149200	152200
21	127700	128900	127500	166200	162500	155400	157700	162100	150900	150300	147400	151300
22	127900	130100	126900	163800	160700	153900	155400	160600	153400	150800	148600	151200
23	127800	130300	126200	159100	159400	153400	149800	158600	156300	151100	148300	151300
24	127700	130000	125100	154600	157800	154500	147800	157600	158100	152300	147800	152700
25	127100	129900	125000	157100	156700	153200	149000	156700	158600	152200	147200	151400
26	126500	129400	126500	159000	154800	152800	150300	156300	157400	152000	146600	150800
27	126200	130400	128900	159700	151100	154300	151800	155800	156100	152200	146200	150600
28	125800	130700	130400	158900	147200	153800	154200	155200	155900	151900	145500	150100
29	125500	129900	131500	157100	---	154300	155800	157100	154800	151700	144800	149700
30	125300	129600	133300	155100	---	154600	156400	156700	154300	151300	144500	149500
31	125400	---	132900	155000	---	153900	---	156400	---	150900	145600	---
MAX	127900	130700	133300	173600	165400	163600	172900	163900	164600	156400	150600	156400
MIN	119800	124700	125000	133200	147200	152800	147800	153800	150900	150300	144500	145500
(†)	42.66	43.04	43.33	46.16	44.53	45.08	45.27	45.27	45.11	44.84	44.40	44.72
(Φ)	+200	+4200	+3300	+22100	-7800	+6700	+2500	0	-2100	-3400	-5300	+3900
(††)	14320	12290	13180	11470	11530	11920	11690	13280	14240	15470	17880	11210

CAL YR 1990 MAX 167000 MIN 118400 (Φ) +16100 (††) 179220
WTR YR 1991 MAX 173600 MIN 119800 (Φ) +24300 (††) 158480

(†) Gage height, in feet, at end of month.
(Φ) Change in contents, in acre-feet.
(††) Diversions in acre-feet, for municipal and industrial sue by the city of Houston, and by the San Jacinto River Authority.

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1961 to April 1964, December 1969 to current year. Biochemical analyses: August 1983 to current year. Pesticide analyses: May 1968 to August 1972, August 1983 to current year.

295516095080801 - LAKE HOUSTON SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	RESER-VOIR STORAGE (AC-FT)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV											
19...	1015	129000	1.00	245	8.5	18.0	0.27	8.2	86	150	56
19...	1016	--	0.44	--	--	--	--	--	--	--	--
19...	1017	--	5.00	245	8.5	18.0	--	8.2	86	--	--
19...	1019	--	10.0	245	8.5	17.5	--	7.4	76	--	--
19...	1021	--	15.0	245	8.5	17.5	--	7.1	73	--	--
19...	1023	--	20.0	250	9.2	17.0	--	6.4	65	--	--
19...	1025	--	25.0	260	8.8	17.0	--	5.6	57	--	--
19...	1027	--	30.0	280	8.9	16.5	--	4.6	47	--	--
19...	1029	--	35.0	290	8.7	16.0	--	4.1	41	--	--
19...	1031	--	40.0	290	8.6	16.0	--	3.9	39	--	--
19...	1033	--	46.0	290	9.6	16.0	--	3.9	39	--	--
FEB											
12...	0920	154000	1.00	110	7.4	16.5	0.33	8.8	89	96	52
12...	0921	--	0.54	--	--	--	--	--	--	--	--
12...	0922	--	10.0	120	7.2	14.0	--	8.2	78	--	--
12...	0924	--	20.0	125	7.4	13.0	--	8.2	77	--	--
12...	0926	--	30.0	125	7.9	11.5	--	8.3	75	--	--
12...	0928	--	43.0	120	8.1	10.5	--	6.3	56	--	--
MAR											
26...	0930	153000	1.00	135	7.2	19.0	0.30	7.2	77	170	120
26...	0932	--	10.0	135	7.1	18.5	--	6.9	73	--	--
26...	0934	--	20.0	150	7.0	18.0	--	5.6	59	--	--
26...	0936	--	30.0	135	7.0	17.5	--	5.4	56	--	--
26...	0938	--	46.0	135	6.9	17.0	--	4.8	49	--	--
MAY											
21...	0956	162000	1.00	130	7.0	25.5	0.27	5.8	70	28	K8
21...	0958	--	10.0	130	7.0	25.5	--	5.7	69	--	--
21...	1000	--	20.0	130	7.0	25.0	--	5.6	67	--	--
21...	1002	--	30.0	130	6.8	24.5	--	4.0	48	--	--
21...	1004	--	40.0	135	6.6	23.0	--	1.0	12	--	--
21...	1006	--	44.0	135	6.6	23.0	--	0.7	8	--	--
AUG											
05...	1030	149000	1.00	145	7.2	30.0	0.47	5.0	66	K2	28
05...	1032	--	10.0	145	7.1	30.0	--	4.3	57	--	--
05...	1034	--	20.0	145	7.1	29.0	--	0.8	10	--	--
05...	1036	--	30.0	145	7.0	29.0	--	0.2	3	--	--
05...	1038	--	42.0	150	6.9	28.5	--	0	0	--	--
SEP											
18...	0920	154000	1.00	185	7.8	30.0	0.52	7.4	98	K2	76
18...	0922	--	5.00	185	7.6	28.5	--	6.2	80	--	--
18...	0924	--	10.0	185	7.4	28.0	--	5.0	64	--	--
18...	0926	--	15.0	190	7.1	28.0	--	4.7	60	--	--
18...	0928	--	25.0	190	7.0	28.0	--	3.0	38	--	--
18...	0930	--	35.0	190	7.0	28.0	--	2.4	31	--	--
18...	0932	--	45.0	190	7.1	27.5	--	2.6	33	--	--

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295516095080801 - LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
NOV											
19...	48	0	16	2.0	27	2	3.3	53	10	32	0.20
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	52	0	17	2.2	34	2	3.9	58	11	38	0.30
FEB											
12...	36	6	12	1.5	8.6	0.6	2.5	30	5.4	14	<0.10
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	38	5	13	1.4	8.4	0.6	2.5	33	5.1	13	<0.10
MAR											
26...	42	11	14	1.7	10	0.7	2.1	31	6.3	18	<0.10
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	42	10	14	1.6	10	0.7	2.2	32	6.7	18	0.10
MAY											
21...	39	5	13	1.7	9.8	0.7	2.6	34	5.4	15	<0.10
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	42	5	14	1.8	9.4	0.6	2.5	37	5.1	15	<0.10
AUG											
05...	42	1	14	1.7	12	0.8	1.9	41	5.0	17	0.10
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	44	1	15	1.7	11	0.7	1.9	43	4.6	16	0.10
SEP											
18...	46	0	15	2.0	17	1	2.6	46	6.6	24	0.10
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	46	0	15	2.0	16	1	2.8	47	6.4	22	0.10

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295516095080801 - LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
NOV											
19...	13	136	0.070	0.070	0.030	0.030	0.100	0.100	0.070	0.070	0.43
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	11	157	0.650	0.660	0.050	0.040	0.700	0.700	0.220	0.190	0.78
FEB											
12...	5.4	68	0.070	--	0.030	<0.010	0.100	0.100	0.030	0.040	1.3
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	5.3	70	0.170	--	0.030	<0.010	0.200	0.200	0.140	0.140	0.36
MAR											
26...	6.1	79	0.260	0.280	0.070	0.040	0.330	0.320	0.030	<0.010	0.67
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	0.290	0.310	0.090	0.080	0.380	0.390	0.050	0.020	0.85
26...	--	--	--	--	--	--	--	--	--	--	--
26...	6.6	80	0.250	0.260	0.110	0.080	0.360	0.340	0.070	0.020	0.73
MAY											
21...	7.3	78	0.330	0.370	0.060	0.020	0.390	0.390	0.120	0.110	0.58
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	0.310	0.351	0.060	0.020	0.370	0.371	0.100	0.090	0.90
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	7.8	80	0.240	--	0.080	<0.010	0.320	0.320	0.170	0.150	1.0
AUG											
05...	9.2	86	--	--	0.020	<0.010	<0.050	<0.050	<0.010	<0.010	--
05...	--	--	0.042	--	0.020	<0.010	0.062	<0.050	0.020	<0.010	0.58
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	10	88	0.073	0.075	0.020	0.010	0.093	0.085	0.110	0.090	0.69
SEP											
18...	11	106	--	--	0.010	<0.010	<0.050	<0.050	0.020	<0.010	0.48
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	0.120	--	0.020	<0.010	0.140	0.140	0.020	0.020	0.58
18...	--	--	--	--	--	--	--	--	--	--	--
18...	11	105	0.130	--	0.020	<0.010	0.150	0.170	0.040	0.030	0.56

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295516095080801 - LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)
NOV											
19...	0.43	0.50	0.50	0.260	0.240	0.140	0.180	0.43	7.9	7.0	--
19...	--	--	--	--	--	--	--	--	--	--	1.80
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	0.41	0.60	1.0	0.580	0.460	0.460	0.530	1.4	7.3	6.6	--
FEB											
12...	0.56	0.60	1.3	0.120	0.080	0.060	0.090	0.18	12	15	--
12...	--	--	--	--	--	--	--	--	--	--	10.0
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	0.36	0.50	0.50	0.120	0.120	0.050	0.080	0.15	9.6	12	--
MAR											
26...	--	0.20	0.70	0.140	0.080	0.060	0.090	0.18	14	13	1.10
26...	--	--	--	--	--	--	--	--	--	--	--
26...	0.78	0.80	0.90	0.190	0.140	0.090	0.120	0.28	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	0.58	0.60	0.80	0.160	0.090	0.050	0.110	0.15	12	13	--
MAY											
21...	0.59	0.70	0.70	0.180	0.110	0.100	0.160	0.31	15	14	0.400
21...	--	--	--	--	--	--	--	--	--	--	--
21...	0.71	0.80	1.0	0.170	0.080	0.070	0.150	0.21	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	0.65	0.80	1.2	0.200	0.090	0.080	0.180	0.25	15	14	--
AUG											
05...	--	0.60	0.50	0.200	0.140	0.110	0.150	0.34	--	10	9.60
05...	--	0.60	0.60	0.220	0.140	0.120	0.170	0.37	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	0.41	0.50	0.80	0.370	0.270	0.240	0.300	0.74	13	12	--
SEP											
18...	--	0.40	0.50	0.230	0.170	0.150	0.170	0.46	9.4	8.2	5.50
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	0.58	0.60	0.60	0.260	0.190	0.180	0.230	0.55	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	0.47	0.50	0.60	0.270	0.220	0.180	0.220	0.55	9.4	8.4	--

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295516095080801 - LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
NOV											
19...	--	30	2	--	--	--	--	--	--	--	--
19...	<0.100	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	23	22	--	--	--	--	--	--	--	--
FEB											
12...	--	82	4	--	--	--	--	--	--	--	--
12...	0.700	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	100	16	--	--	--	--	--	--	--	--
MAR											
26...	<0.100	120	12	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	90	<10	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	160	77	--	--	--	--	--	--	--	--
MAY											
21...	<0.200	170	17	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.06
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	130	70	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	220	320	--	--	--	--	--	--	--	--
AUG											
05...	0.600	39	14	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.03
05...	--	40	40	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	210	950	--	--	--	--	--	--	--	--
SEP											
18...	<0.100	7	8	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.02
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	40	150	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	34	180	--	--	--	--	--	--	--	--

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295516095080801 - LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	DI-ELDRIN TOTAL (UG/L)	DI-SYSTON TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
NOV											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAY											
21...	<0.010	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	0.03	<0.01	<0.01
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
AUG											
05...	<0.010	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
SEP											
18...	<0.010	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295516095080801 - LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
NOV											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAY											
21...	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.02	<0.01	<0.01
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
AUG											
05...	--	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.01	<0.01	<0.01
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
SEP											
18...	--	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.03	<0.01	<0.01
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295702095091401 - LAKE HOUSTON SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
NOV								
19...	1115	1.00	245	8.6	18.5	0.34	8.5	90
19...	1117	5.00	245	8.3	16.5	--	8.5	86
19...	1119	10.0	245	8.3	18.5	--	8.4	89
19...	1121	15.0	245	8.1	18.0	--	7.9	83
19...	1123	20.0	250	7.9	17.0	--	5.9	60
19...	1125	30.0	265	7.8	16.5	--	4.1	42
19...	1127	40.0	270	7.8	16.5	--	3.7	37
FEB								
12...	1015	1.00	110	7.3	17.0	0.33	8.1	82
12...	1017	10.0	110	7.1	14.5	--	7.2	69
12...	1019	20.0	120	7.2	13.0	--	7.3	68
12...	1021	30.0	120	7.2	11.5	--	7.7	69
12...	1023	41.0	120	7.2	11.5	--	8.2	74
MAR								
26...	1015	1.00	145	7.3	20.0	0.32	7.5	82
26...	1017	10.0	145	7.2	19.5	--	7.2	78
26...	1019	20.0	150	7.2	19.0	--	6.7	72
26...	1021	30.0	155	7.0	18.0	--	5.3	56
26...	1023	36.0	155	7.0	18.0	--	5.1	53
MAY								
21...	1042	1.00	130	7.0	25.5	0.30	5.4	65
21...	1044	10.0	130	7.0	25.5	--	5.4	65
21...	1046	20.0	130	6.9	25.0	--	5.3	64
21...	1048	30.0	125	6.6	24.0	--	2.2	26
21...	1050	39.0	125	6.6	22.5	--	0	0
AUG								
05...	1115	1.00	150	7.1	30.0	0.49	4.5	59
05...	1117	10.0	150	7.0	30.0	--	4.1	54
05...	1119	20.0	150	6.9	29.5	--	0.9	12
05...	1121	30.0	150	6.8	29.0	--	0.1	1
05...	1123	38.0	150	6.9	29.0	--	0.1	1
SEP								
18...	1008	1.00	190	8.0	29.5	0.58	7.3	96
18...	1010	10.0	190	7.1	28.5	--	4.1	53
18...	1012	20.0	210	7.0	28.0	--	1.8	23
18...	1014	30.0	215	7.0	28.0	--	0.8	10
18...	1016	38.0	220	7.0	27.5	--	0.1	1

295902095074201 - LAKE HOUSTON SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV										
19...	1145	1.00	250	8.3	18.5	0.34	8.7	92	110	20
19...	1146	0.56	--	--	--	--	--	--	--	--
19...	1147	5.00	250	8.3	18.5	--	8.6	91	--	--
19...	1149	10.0	265	8.1	18.0	--	7.9	83	--	--
19...	1151	15.0	275	7.9	17.0	--	5.9	60	--	--
19...	1153	20.0	285	7.8	16.5	--	4.2	43	--	--
19...	1155	28.0	290	7.9	16.5	--	3.7	38	--	--
FEB										
12...	1040	1.00	110	7.2	17.0	0.36	8.0	81	44	40
12...	1041	0.59	--	--	--	--	--	--	--	--
12...	1042	10.0	130	7.2	14.5	--	7.0	67	--	--
12...	1044	20.0	140	7.2	13.0	--	7.3	68	--	--
12...	1046	30.0	140	7.2	12.0	--	7.2	66	--	--
MAR										
26...	1045	1.00	170	7.3	20.5	0.40	7.2	79	K8	40
26...	1047	5.00	170	7.3	20.0	--	7.2	79	--	--
26...	1049	10.0	170	7.2	20.0	--	7.1	78	--	--
26...	1051	20.0	170	7.2	19.5	--	6.8	73	--	--
26...	1053	30.0	165	7.0	19.0	--	5.6	60	--	--
MAY										
21...	1108	1.00	130	6.9	25.5	0.31	5.4	66	56	120
21...	1110	10.0	130	6.9	25.0	--	5.1	61	--	--
21...	1112	20.0	130	6.8	25.0	--	5.0	60	--	--
21...	1114	30.0	125	6.6	24.0	--	0.9	11	--	--
AUG										
05...	1153	1.00	155	7.2	30.5	0.43	5.0	66	K4	140
05...	1155	10.0	155	7.1	30.5	--	4.5	60	--	--
05...	1157	20.0	170	6.9	30.0	--	0.8	11	--	--
05...	1159	28.0	165	6.9	29.5	--	0.1	1	--	--
SEP										
18...	1032	1.00	205	7.8	29.5	--	7.2	94	20	32
18...	1034	10.0	215	7.2	28.5	--	3.9	50	--	--
18...	1036	20.0	215	7.1	28.0	--	2.1	27	--	--
18...	1038	29.0	215	7.3	28.0	--	0.3	4	--	--

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295902095074201 - LAKE HOUSTON SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)
NOV									
19...	49	0	16	2.1	29	2	3.4	57	12
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	52	0	17	2.3	33	2	3.6	65	11
FEB									
12...	37	6	12	1.6	8.4	0.6	2.4	31	5.7
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	45	5	15	1.8	10	0.6	2.6	40	4.6
MAR									
26...	48	8	16	2.0	14	0.9	2.4	40	6.0
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	48	9	16	2.0	14	0.9	2.2	39	7.2
MAY									
21...	40	7	13	1.8	9.3	0.6	2.3	33	5.4
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	39	6	13	1.7	8.5	0.6	2.4	33	4.4
AUG									
05...	42	1	14	1.8	13	0.9	2.2	41	5.4
05...	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--
05...	45	0	15	1.8	14	0.9	2.3	45	5.7
SEP									
18...	46	0	15	2.0	20	1	2.8	49	4.9
18...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
18...	46	0	15	2.1	22	1	3.1	50	8.0

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
NOV									
19...	33	0.30	12	142	0.080	0.020	0.100	0.040	0.56
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	37	0.30	11	154	0.640	0.060	0.700	0.280	0.72
FEB									
12...	13	<0.10	5.9	68	0.160	0.040	0.200	0.090	0.81
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	15	<0.10	5.8	79	0.170	0.030	0.200	0.150	0.65
MAR									
26...	23	<0.10	7.3	95	0.280	0.050	0.330	0.060	0.74
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	22	<0.10	7.6	95	0.270	0.050	0.320	0.090	0.71
MAY									
21...	16	<0.10	7.1	75	0.280	0.070	0.350	0.120	0.98
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	15	<0.10	7.6	73	0.180	0.070	0.250	0.250	0.95
AUG									
05...	19	0.10	10	90	--	0.020	<0.050	0.020	0.68
05...	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--
05...	21	0.10	10	97	--	0.020	<0.050	0.060	0.64
SEP									
18...	26	0.20	11	111	--	0.020	<0.050	0.010	0.59
18...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
18...	26	0.10	12	119	0.120	0.070	0.190	0.110	0.49

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295902095074201 - LAKE HOUSTON SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
NOV									
19...	0.60	0.250	0.210	7.8	6.4	--	--	81	4
19...	--	--	--	--	--	4.30	0.200	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	1.0	0.580	0.560	8.4	6.1	--	--	86	10
FEB									
12...	0.90	0.120	0.080	12	15	--	--	130	43
12...	--	--	--	--	--	4.10	0.200	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	0.80	0.130	0.090	8.9	9.8	--	--	82	28
MAR									
26...	0.80	0.200	0.130	13	13	4.20	<0.100	130	16
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	0.80	0.210	0.130	13	13	--	--	150	17
MAY									
21...	1.1	0.160	0.140	12	15	2.10	<0.200	170	160
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	1.2	0.200	0.200	--	--	--	--	150	310
AUG									
05...	0.70	0.220	0.160	12	9.6	5.50	0.400	27	45
05...	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--
05...	0.70	0.320	0.240	12	9.2	--	--	43	220
SEP									
18...	0.60	0.250	0.200	9.0	8.0	13.0	<0.100	7	20
18...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
18...	0.60	0.400	0.370	9.4	7.7	--	--	30	370

300016095073401 - LAKE HOUSTON SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
NOV								
19...	1230	1.00	265	8.6	19.0	0.32	9.7	104
19...	1232	5.00	265	8.5	19.0	--	9.6	102
19...	1234	10.0	265	8.1	18.5	--	8.5	90
19...	1236	15.0	265	7.8	17.5	--	6.5	67
19...	1238	20.0	275	7.4	16.5	--	5.4	55
19...	1240	25.0	275	7.3	16.5	--	4.4	45
FEB								
12...	1118	1.00	110	7.1	16.0	0.36	7.4	74
12...	1120	10.0	105	7.1	14.0	--	7.1	68
12...	1122	20.0	195	7.3	14.0	--	7.2	69
12...	1124	26.0	150	7.2	12.5	--	6.6	61
MAR								
26...	1110	1.00	180	7.4	21.0	0.38	7.8	87
26...	1112	10.0	180	7.4	20.5	--	7.7	85
26...	1114	20.0	180	7.4	20.5	--	7.5	83
26...	1116	25.0	180	7.3	20.5	--	7.4	82
MAY								
21...	1137	1.00	135	6.9	25.0	0.37	5.3	64
21...	1139	10.0	135	6.9	25.0	--	5.2	63
21...	1141	20.0	140	6.9	24.5	--	4.7	56
21...	1143	25.0	140	6.8	24.5	--	2.9	35
AUG								
05...	1225	1.00	160	7.4	30.5	0.49	5.2	69
05...	1227	10.0	160	7.2	30.5	--	4.7	62
05...	1229	20.0	180	7.0	30.0	--	1.0	13
05...	1231	23.0	185	6.9	30.0	--	0.8	10
SEP								
18...	1055	1.00	215	8.3	30.0	0.46	7.8	103
18...	1057	10.0	215	7.2	28.5	--	4.0	52
18...	1059	20.0	210	7.1	28.0	--	1.7	22
18...	1101	26.0	210	7.2	28.0	--	0.3	4

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300158095074601 - LAKE HOUSTON SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
NOV											
19...	1340	1.00	235	9.0	19.5	0.34	9.5	102	20	30	46
19...	1341	0.56	--	--	--	--	--	--	--	--	--
19...	1342	5.00	230	8.8	19.0	--	8.4	90	--	--	--
19...	1344	10.0	200	8.3	17.5	--	5.2	54	--	--	--
19...	1346	21.0	200	8.1	17.0	--	4.3	44	--	--	38
FEB											
12...	1255	1.00	65	6.6	17.0	0.37	7.7	78	40	92	22
12...	1256	0.60	--	--	--	--	--	--	--	--	--
12...	1257	10.0	60	6.5	14.5	--	7.6	73	--	--	--
12...	1259	21.0	75	6.8	14.0	--	7.6	72	--	--	26
MAR											
26...	1240	1.00	165	7.4	21.5	0.45	7.9	89	K8	K12	49
26...	1242	10.0	165	7.2	21.0	--	7.8	87	--	--	--
26...	1244	22.0	140	6.9	19.0	--	7.9	85	--	--	40
MAY											
21...	1245	1.00	100	6.7	24.5	0.26	5.5	66	150	130	34
21...	1247	10.0	100	6.7	24.5	--	5.4	64	--	--	--
21...	1249	22.0	105	6.6	24.0	--	4.4	52	--	--	34
AUG											
05...	1330	1.00	165	7.5	31.0	0.46	6.5	87	K1	180	44
05...	1332	10.0	165	6.9	30.5	--	2.4	32	--	--	--
05...	1334	20.0	150	6.8	29.5	--	0.2	3	--	--	40
SEP											
18...	1203	1.00	200	8.3	31.5	0.43	8.1	110	K2	28	37
18...	1205	5.00	200	7.6	29.5	--	6.5	85	--	--	--
18...	1207	10.0	175	6.9	28.5	--	1.5	19	--	--	--
18...	1209	21.0	150	6.8	28.0	0.58	0.2	3	--	--	37

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV											
19...	0	15	2.1	27	2	2.9	49	8.9	32	0.20	9.8
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	0	12	1.9	21	1	2.2	39	6.4	26	0.20	10
FEB											
12...	5	7.0	1.2	5.2	0.5	1.7	17	4.9	9.0	0.10	5.5
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	8	8.1	1.3	6.4	0.6	1.7	18	5.6	11	<0.10	7.9
MAR											
26...	12	16	2.1	14	0.9	2.0	37	6.9	24	<0.10	8.9
26...	--	--	--	--	--	--	--	--	--	--	--
26...	9	13	1.9	12	0.8	1.7	31	6.0	20	<0.10	8.1
MAY											
21...	8	11	1.5	6.0	0.5	1.9	26	3.1	12	<0.10	8.0
21...	--	--	--	--	--	--	--	--	--	--	--
21...	7	11	1.5	7.0	0.5	1.7	27	3.6	13	<0.10	8.3
AUG											
05...	4	14	2.3	15	1	2.1	40	5.5	21	0.10	9.8
05...	--	--	--	--	--	--	--	--	--	--	--
05...	2	13	1.9	13	0.9	1.9	38	5.3	22	0.10	20
SEP											
18...	0	12	1.8	18	1	2.7	43	3.6	27	0.10	11
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	0	12	1.7	11	0.8	2.1	39	3.5	15	0.10	11

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300158095074601 - LAKE HOUSTON SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
NOV											
19...	128	--	--	0.010	0.010	<0.100	<0.100	0.070	0.070	0.93	0.93
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	104	--	0.080	0.020	0.020	<0.100	0.100	0.140	0.140	0.66	0.36
FEB											
12...	45	--	--	0.030	<0.010	<0.100	<0.100	0.050	0.040	1.0	1.1
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	53	--	--	0.040	<0.010	<0.100	<0.100	0.070	0.050	0.83	0.75
MAR											
26...	97	0.130	0.130	0.030	0.030	0.160	0.160	0.030	0.030	0.77	0.57
26...	--	--	--	--	--	--	--	--	--	--	--
26...	83	0.110	0.120	0.030	0.020	0.140	0.140	0.100	0.060	0.80	0.84
MAY											
21...	60	0.100	0.130	0.060	0.010	0.160	0.140	0.110	0.090	1.1	1.1
21...	--	--	--	--	--	--	--	--	--	--	--
21...	64	0.080	--	0.070	<0.010	0.150	0.140	0.160	0.110	1.0	0.79
AUG											
05...	94	--	--	0.010	<0.010	<0.050	<0.050	<0.010	0.010	--	0.79
05...	--	--	--	--	--	--	--	--	--	--	--
05...	101	--	--	0.020	<0.010	<0.050	<0.050	0.080	0.080	0.72	0.42
SEP											
18...	103	--	--	0.020	<0.010	<0.050	<0.050	0.010	0.010	0.69	0.39
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	81	--	--	0.020	<0.010	<0.050	<0.050	0.160	0.150	0.64	0.35

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)
NOV											
19...	1.0	1.0	0.200	0.200	0.070	0.130	0.21	7.9	6.2	--	--
19...	--	--	--	--	--	--	--	--	--	8.00	0.400
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	0.50	0.80	0.150	0.150	0.150	0.090	0.46	5.6	5.4	--	--
FEB											
12...	1.1	1.1	0.080	0.080	0.040	0.050	0.12	18	20	--	--
12...	--	--	--	--	--	--	--	--	--	2.00	0.100
12...	--	--	--	--	--	--	--	--	--	--	--
12...	0.80	0.90	0.070	0.030	0.020	0.040	0.06	17	19	--	--
MAR											
26...	0.60	0.80	0.120	0.060	0.040	0.060	0.12	12	12	8.20	0.400
26...	--	--	--	--	--	--	--	--	--	--	--
26...	0.90	0.90	0.090	0.090	0.040	0.030	0.12	17	12	--	--
MAY											
21...	1.2	1.2	0.090	0.020	0.010	0.060	0.03	21	18	1.00	<0.200
21...	--	--	--	--	--	--	--	--	--	--	--
21...	0.90	1.2	0.100	0.040	0.020	0.080	0.06	18	18	--	--
AUG											
05...	0.80	0.80	0.220	0.140	0.140	0.140	0.43	13	11	17.0	1.20
05...	--	--	--	--	--	--	--	--	--	--	--
05...	0.50	0.80	0.210	0.130	0.100	0.130	0.31	12	8.7	--	--
SEP											
18...	0.40	0.70	0.210	0.130	0.110	0.120	0.34	9.6	7.4	8.20	<0.100
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	0.50	0.80	0.210	0.100	0.090	0.110	0.28	9.8	8.0	--	--

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300158095074601 - LAKE HOUSTON SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)
NOV											
19...	38	<1	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	30	20	--	--	--	--	--	--	--	--	--
FEB											
12...	200	30	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	240	56	--	--	--	--	--	--	--	--	--
MAR											
26...	150	16	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	470	98	--	--	--	--	--	--	--	--	--
MAY											
21...	250	62	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.01	<0.010
21...	--	--	--	--	--	--	--	--	--	--	--
21...	330	81	--	--	--	--	--	--	--	--	--
AUG											
05...	47	44	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.03	<0.010
05...	--	--	--	--	--	--	--	--	--	--	--
05...	280	710	--	--	--	--	--	--	--	--	--
SEP											
18...	16	410	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.02	<0.010
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	300	650	--	--	--	--	--	--	--	--	--

DATE	DI-SYSTON TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
NOV											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAY											
21...	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
AUG											
05...	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
SEP											
18...	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300158095074601 - LAKE HOUSTON SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
NOV										
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
FEB										
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
MAR										
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
MAY										
21...	<0.01	<0.01	<0.1	<0.01	--	<1	<0.01	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
AUG										
05...	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.01	<0.01	<0.01
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
SEP										
18...	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.04	<0.01	<0.01
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

300209095091201 - LAKE HOUSTON SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV											
19...	1300	1.00	300	9.2	20.5	0.35	11.1	122	56	K10	51
19...	1301	0.58	--	--	--	--	--	--	--	--	--
19...	1302	5.00	300	9.1	20.5	--	11.0	121	--	--	--
19...	1304	12.0	310	8.8	19.5	--	8.3	90	--	--	56
FEB											
12...	1200	1.00	220	7.6	16.5	0.34	8.9	90	120	20	70
12...	1201	0.56	--	--	--	--	--	--	--	--	--
12...	1202	10.0	220	7.5	15.5	--	8.5	84	--	--	--
12...	1204	13.0	225	7.5	15.0	--	8.4	82	--	--	73
MAR											
26...	1152	1.00	275	8.8	22.5	0.38	11.0	126	K12	48	76
26...	1154	5.00	275	8.8	22.5	--	11.0	126	--	--	--
26...	1156	12.0	275	8.7	22.5	--	10.5	120	--	--	76
MAY											
21...	1210	1.00	165	7.2	25.5	0.26	6.2	75	190	230	53
21...	1212	10.0	165	7.1	25.0	--	5.6	67	--	--	--
21...	1214	14.0	165	7.0	25.0	--	5.4	65	--	--	54
AUG											
05...	1255	1.00	360	8.9	31.0	0.46	6.8	91	K2	120	72
05...	1257	10.0	415	8.8	30.0	--	5.3	70	--	--	--
05...	1259	12.0	415	8.6	30.0	--	5.2	68	--	--	79
SEP											
18...	1122	1.00	255	8.8	31.5	0.21	10.8	147	K12	28	52
18...	1124	5.00	280	8.0	30.0	--	5.8	77	--	--	--
18...	1126	13.0	300	7.3	29.5	--	1.8	24	--	--	56

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300209095091201 - LAKE HOUSTON SITE FC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV											
19...	0	17	2.1	37	2	4.4	71	12	38	0.30	8.5
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	0	18	2.6	38	2	4.7	72	13	38	0.40	9.5
FEB											
12...	9	24	2.4	16	0.8	3.2	61	8.2	26	<0.10	6.3
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	11	25	2.5	17	0.9	3.4	62	8.2	26	<0.10	6.3
MAR											
26...	10	26	2.8	25	1	3.4	66	11	35	<0.10	6.9
26...	--	--	--	--	--	--	--	--	--	--	--
26...	12	26	2.7	24	1	3.2	64	11	35	0.10	6.9
MAY											
21...	7	18	2.0	11	0.7	2.9	46	4.3	18	<0.10	7.7
21...	--	--	--	--	--	--	--	--	--	--	--
21...	8	18	2.1	12	0.7	3.1	46	5.7	19	<0.10	7.6
AUG											
05...	0	24	2.9	46	2	3.8	85	14	54	0.30	14
05...	--	--	--	--	--	--	--	--	--	--	--
05...	0	26	3.5	55	3	4.4	96	16	66	0.30	16
SEP											
18...	0	17	2.3	27	2	4.4	60	9.8	32	0.20	14
18...	--	--	--	--	--	--	--	--	--	--	--
18...	0	18	2.7	33	2	4.9	66	10	37	0.20	15

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)
NOV											
19...	167	0.650	0.660	0.050	0.040	0.700	0.700	0.090	0.050	1.3	0.45
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	173	1.03	0.740	0.070	0.060	1.10	0.800	0.200	0.120	1.2	0.98
FEB											
12...	125	0.270	--	0.030	<0.010	0.300	0.300	0.030	0.030	0.77	0.77
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	128	0.350	--	0.030	<0.010	0.380	0.370	0.090	0.100	0.81	0.80
MAR											
26...	151	0.170	0.170	0.030	0.030	0.200	0.200	0.020	<0.010	1.3	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	149	0.190	0.190	0.040	0.030	0.230	0.220	0.030	<0.010	1.3	--
MAY											
21...	93	0.180	0.250	0.080	0.010	0.260	0.260	0.090	0.050	1.0	0.65
21...	--	--	--	--	--	--	--	--	--	--	--
21...	97	0.190	0.260	0.080	0.020	0.270	0.280	0.130	0.080	0.87	0.62
AUG											
05...	212	--	--	0.010	<0.010	<0.050	<0.050	0.020	0.010	1.4	0.49
05...	--	--	--	--	--	--	--	--	--	--	--
05...	248	0.120	0.150	0.040	0.020	0.160	0.170	0.140	0.160	1.5	1.4
SEP											
18...	145	0.110	0.180	0.040	0.020	0.150	0.200	0.030	0.030	1.6	0.57
18...	--	--	--	--	--	--	--	--	--	--	--
18...	166	0.770	0.800	0.090	0.050	0.860	0.850	0.240	0.260	0.86	0.54

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300209095091201 - LAKE HOUSTON SITE FC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)
NOV											
19...	0.50	1.4	0.910	0.680	0.690	0.760	2.1	9.6	7.4	--	--
19...	--	--	--	--	--	--	--	--	--	25.0	0.900
19...	--	--	--	--	--	--	--	--	--	--	--
19...	1.1	1.4	1.10	0.730	0.670	0.910	2.1	11	7.8	--	--
FEB											
12...	0.80	0.80	0.200	0.210	0.120	0.170	0.37	11	12	--	--
12...	--	--	--	--	--	--	--	--	--	4.40	0.200
12...	--	--	--	--	--	--	--	--	--	--	--
12...	0.90	0.90	0.230	0.190	0.120	0.140	0.37	11	11	--	--
MAR											
26...	0.50	1.3	0.380	0.220	0.240	0.240	0.74	13	10	56.0	2.80
26...	--	--	--	--	--	--	--	--	--	--	--
26...	0.60	1.3	0.410	0.220	0.200	0.230	0.61	13	10	--	--
MAY											
21...	0.70	1.1	0.200	0.090	0.080	0.170	0.25	18	15	3.90	0.300
21...	--	--	--	--	--	--	--	--	--	--	--
21...	0.70	1.0	0.230	0.090	0.090	0.190	0.28	17	15	--	--
AUG											
05...	0.50	1.4	0.670	0.530	0.500	0.510	1.5	15	7.6	44.0	2.20
05...	--	--	--	--	--	--	--	--	--	--	--
05...	1.6	1.6	0.860	0.630	0.610	0.680	1.9	13	6.6	--	--
SEP											
18...	0.60	1.6	0.650	0.490	0.460	0.480	1.4	13	7.7	51.0	3.40
18...	--	--	--	--	--	--	--	--	--	--	--
18...	0.80	1.1	0.790	0.590	0.570	0.570	1.7	12	8.4	--	--

DATE	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)
NOV											
19...	55	1	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	67	3	--	--	--	--	--	--	--	--	--
FEB											
12...	110	20	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	120	44	--	--	--	--	--	--	--	--	--
MAR											
26...	39	2	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	24	2	--	--	--	--	--	--	--	--	--
MAY											
21...	87	42	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.04	<0.010
21...	--	--	--	--	--	--	--	--	--	--	--
21...	120	61	--	--	--	--	--	--	--	--	--
AUG											
05...	35	14	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.02	<0.010
05...	--	--	--	--	--	--	--	--	--	--	--
05...	44	19	--	--	--	--	--	--	--	--	--
SEP											
18...	4	1	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.07	<0.010
18...	--	--	--	--	--	--	--	--	--	--	--
18...	44	72	--	--	--	--	--	--	--	--	--

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300209095091201 - LAKE HOUSTON SITE FC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	DI-SYSTON TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
NOV											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAY											
21...	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	0.01	<0.01	<0.01	<0.01
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
AUG											
05...	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
SEP											
18...	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--

DATE	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PHORATE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
NOV										
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
FEB										
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
MAR										
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
MAY										
21...	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.11	<0.01	<0.01
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
AUG										
05...	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.01	<0.01	<0.01
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
SEP										
18...	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.06	<0.01	<0.01
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

08072050 SAN JACINTO RIVER NEAR SHELDON, TX

LOCATION.--Lat 29°52'34", long 95°05'37", Harris County, Hydrologic Unit 12040104, on left bank at U.S. Highway 90 bridge, 0.3 mi downstream from Southern Pacific Railway Co. bridge, 1.5 mi east of Sheldon, 4.6 mi downstream from Lake Houston, and 21 mi northeast of Houston.

DRAINAGE AREA.--2,879 mi^2.

PERIOD OF RECORD.--February 1970 to current year (elevations prior to 1973, beginning 1973 gage heights. Discharge measurement, May 19, 1989.

Water-quality records.--Chemical and biochemical analyses: February 1970 to September 1972. Pesticide analyses: May 1971 to September 1972.

GAGE.--Water-stage recorder. Datum of gage is 0.69 ft below National Geodetic Vertical Datum of 1929, adjustment of 1973. Prior records unadjusted for land-surface subsidence.

REMARKS.--Records fair. Gage heights reflect tidal fluctuations. Stage and rainfall radio-telemetry at station is operated by Harris County Flood Control District.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 20.12 ft June 15, 1973; minimum recorded elevation, minus 2.52 ft Oct. 28, 1985. A discharge measurement of 111,000 ft^3/s was made near the peak of May 19, 1989 (gage height, 20.08 ft). No other measurements have been made at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since at least 1875, 31.5 ft Nov. 26, 1940, at site 0.3 mi upstream at Southern Pacific Railway Co. bridge.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 8.80 ft Jan. 20 at 1500 hours; minimum, minus 1.73 ft Dec. 24.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	2.72	.77	3.39	1.35	3.63	1.89	2.32	.38	2.67	.93	4.00	1.60
2	3.47	1.41	3.77	1.63	3.56	1.03	2.80	.98	2.80	1.40	3.37	2.27
3	3.70	2.62	3.83	1.93	3.30	-.23	2.83	.94	2.80	1.43	2.93	.72
4	2.95	1.30	3.97	1.01	1.67	-.79	2.47	1.08	3.99	1.14	2.64	.57
5	2.98	.88	1.80	-.70	2.65	.93	2.87	2.17	5.19	3.55	2.75	1.43
6	3.21	1.23	3.14	1.39	2.64	1.30	3.07	1.66	5.08	4.10	2.75	1.37
7	3.24	1.47	3.20	1.04	2.60	.04	1.83	.40	4.10	3.63	2.22	.37
8	3.22	1.42	3.53	2.04	2.00	.63	2.20	.72	3.22	2.00	2.17	.15
9	3.48	-.75	3.51	-.33	2.25	1.08	3.63	1.35	3.13	1.48	2.17	.45
10	.41	-.85	1.47	-.58	2.15	.87	4.22	2.90	2.57	.93	2.48	.47
11	2.40	-.28	2.19	.58	2.19	.58	4.07	2.42	2.25	-.02	2.90	1.32
12	2.62	.47	2.42	1.13	2.70	1.07	3.14	.88	2.20	.43	2.72	.79
13	2.17	.39	2.23	.31	2.52	.01	2.88	1.41	2.53	.76	2.05	.01
14	2.62	1.02	2.58	.71	2.40	.57	5.37	1.98	2.25	.05	1.86	-.03
15	2.73	1.12	3.07	1.42	2.35	.51	5.37	3.33	1.74	-.57	3.25	1.64
16	2.92	1.58	2.88	.77	2.65	1.02	4.49	3.60	3.08	.60	5.08	2.24
17	3.21	1.68	2.83	.68	3.07	1.19	5.53	4.49	3.28	1.73	4.92	2.03
18	2.95	-.18	3.28	1.38	3.11	.22	8.20	5.53	3.00	1.56	2.53	.80
19	3.15	1.20	3.35	1.67	2.58	.88	8.80	8.17	2.83	1.00	2.97	.98
20	3.52	2.03	3.33	1.37	3.05	1.35	8.17	6.35	2.18	-.17	3.44	1.48
21	3.47	.92	3.37	1.80	3.22	1.55	6.35	5.12	3.36	.88	3.24	1.30
22	1.95	.53	3.38	1.51	2.23	1.15	5.27	5.01	3.12	1.76	3.10	1.54
23	2.49	.97	3.15	1.18	1.05	-1.54	5.16	3.93	2.65	1.31	2.42	.43
24	2.68	.87	2.80	1.93	1.18	-1.73	4.40	2.75	2.81	1.48	2.45	.32
25	2.14	.44	3.20	1.98	2.24	1.17	3.10	.80	2.70	1.23	2.92	.96
26	2.40	1.20	3.27	2.25	3.60	1.51	3.00	1.15	2.18	.49	3.28	1.50
27	2.58	1.02	3.93	2.65	2.44	1.27	3.38	1.50	2.50	.93	3.46	1.62
28	2.37	.93	2.93	1.15	2.65	.37	3.37	1.45	3.60	1.65	2.94	1.56
29	2.58	.97	2.37	.30	2.84	.87	3.09	1.22	---	---	2.60	.36
30	2.77	1.58	3.48	1.27	2.67	-.37	3.04	.18	---	---	2.28	-.28
31	2.65	1.20	---	---	1.65	-.64	2.17	.07	---	---	2.15	.68
MONTH	3.70	-.85	3.97	-.70	3.63	-1.73	8.80	.07	5.19	-.57	5.08	-.28

08072050 SAN JACINTO RIVER NEAR SHELDON, TX--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	2.04	.12	3.83	1.69	4.00	2.37	2.58	.74	2.43	1.38	3.04	1.11
2	3.24	.77	4.11	2.05	3.67	2.10	2.58	.94	2.45	1.14	3.04	1.07
3	3.07	1.44	4.05	2.37	3.40	1.53	2.40	1.26	2.64	.90	3.21	1.07
4	3.83	1.41	3.78	2.21	2.78	1.16	2.10	1.24	2.51	.62	3.86	1.32
5	6.87	1.68	3.75	2.19	2.55	1.35	2.65	1.15	2.71	.61	3.86	1.68
6	7.78	6.87	3.47	2.12	2.14	1.23	2.69	.98	2.66	.66	3.87	2.06
7	7.65	6.37	4.22	2.67	3.31	1.19	3.26	.97	2.79	.73	3.42	1.83
8	6.37	5.32	4.11	2.98	4.41	2.55	3.28	.98	2.57	.71	3.16	1.54
9	5.60	4.63	3.92	2.86	4.19	2.27	2.81	.66	2.65	.38	3.22	1.66
10	4.75	3.36	3.76	2.82	4.27	2.17	2.88	.52	2.23	.49	3.54	2.08
11	4.38	3.66	3.47	2.52	3.65	1.58	2.97	.67	2.31	.37	3.54	1.85
12	5.48	3.72	3.44	2.06	3.49	1.25	2.75	.61	2.13	.49	3.33	1.66
13	5.36	3.52	3.62	1.59	3.46	1.08	2.63	.58	2.09	.76	3.27	1.56
14	4.56	2.40	3.97	1.29	3.60	1.35	2.33	.50	2.43	1.07	3.32	1.77
15	8.32	4.56	4.30	1.37	3.75	1.50	2.22	.57	2.81	1.03	3.40	1.47
16	8.35	7.98	4.4	2.88	3.77	2.38	2.44	.69	2.48	.88	3.08	1.30
17	7.98	7.05	4.02	2.25	3.75	3.08	1.98	.93	2.43	.84	2.85	1.08
18	7.15	6.68	4.00	2.57	3.12	1.96	2.18	.82	2.39	.52	2.86	1.08
19	7.05	5.53	4.23	2.62	2.77	1.37	2.38	.81	2.05	.24	2.80	1.12
20	5.53	3.23	4.37	3.19	2.40	1.22	2.83	.78	2.00	.20	2.70	.90
21	3.88	2.37	3.71	2.58	2.52	.95	2.97	1.26	2.23	.32	3.10	1.43
22	3.92	2.37	3.94	2.92	2.67	.87	3.17	1.12	2.39	1.30	3.24	1.58
23	3.32	1.58	4.27	3.12	2.68	.63	2.81	1.12	2.66	.64	3.13	1.71
24	3.29	1.72	4.14	2.68	2.43	.57	2.39	.40	2.40	.93	2.95	1.78
25	3.41	1.99	4.00	2.32	2.53	.52	2.54	.78	2.16	.66	2.54	.43
26	3.68	1.92	3.49	1.44	2.54	.48	2.42	.58	2.53	.71	2.40	.67
27	4.20	2.33	3.35	1.28	2.70	.56	2.35	.65	2.72	1.22	2.60	.88
28	4.03	2.51	3.65	1.37	3.59	.96	2.32	.70	2.66	.95	2.73	.96
29	3.35	2.14	4.00	1.83	3.33	.96	1.87	.51	2.35	1.03	3.27	1.29
30	3.91	1.62	4.14	1.85	3.16	1.30	1.89	.53	2.34	.85	3.17	1.31
31	---	---	4.26	2.46	---	---	2.26	1.11	2.81	1.27	---	---
MONTH	8.35	.12	4.40	1.28	4.41	.48	3.28	.40	2.81	.20	3.87	.43

WTR YR 1991 MAX 8.80 MIN -1.73

08072300 BUFFALO BAYOU NEAR KATY, TX

LOCATION.--Lat 29°44'35", long 95°48'24", Fort Bend County, Hydrologic Unit 12040104, on left bank at bridge on county road, 2.5 mi downstream from confluence of Willow Fork and Cane Island Branch of Buffalo Bayou, and 3.1 mi southeast of Katy.

DRAINAGE AREA.--63.3 mi².

PERIOD OF RECORD.--July 1977 to current year.
Water-quality records: Chemical and biochemical analyses: June 1978 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 75.02 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment. Gage located at temporary site 250 ft upstream Jan. 18 to Sept. 30, 1985; all records adjusted to original site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Stage-discharge relationship affected by seasonal vegetal growths during most years. Several measurements of water temperature were obtained during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--14 years, 45.8 ft³/s (33,180 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,920 ft³/s Sept. 20, 1979 (gage height, 37.54 ft); minimum daily, estimated 0.30 ft³/s Dec. 26-29, 1984 (result of regulation).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,150 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 18	1500	1,720	34.60	Apr. 18	0100	1,520	33.86
Apr. 14	1900	*2,880	*38.31				

Minimum daily discharge, 1.2 ft³/s Oct. 1, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	e9.0	e2.2	4.2	16	62	2.9	27	5.6	7.5	15	111
2	1.6	e6.0	e2.1	31	11	32	3.1	36	4.8	10	19	143
3	1.7	e10	e2.0	281	10	14	2.8	17	7.5	10	19	305
4	4.3	e13	e1.8	98	455	8.3	9.6	13	11	8.6	20	311
5	5.5	e10	e1.7	40	516	5.1	476	13	6.2	6.5	15	227
6	5.0	e7.0	2.3	47	197	4.0	688	7.2	6.3	14	10	352
7	6.3	e5.0	4.2	37	95	3.5	347	4.9	11	16	16	231
8	3.6	e44	1.7	27	57	3.2	147	7.9	30	14	19	131
9	3.5	e143	1.6	27	35	3.1	72	18	23	25	27	131
10	2.6	e123	1.7	697	24	3.0	88	10	44	27	29	128
11	2.2	e71	2.0	390	16	2.8	465	7.3	26	27	76	71
12	1.7	e13	2.0	161	11	3.1	223	6.1	18	26	30	48
13	1.7	e7.7	2.1	71	9.4	3.8	98	5.0	11	24	22	37
14	1.3	e14	1.9	40	7.4	5.1	1510	5.3	7.3	13	18	28
15	1.3	e14	1.6	519	5.9	10	1830	5.9	42	8.0	249	21
16	1.2	e7.7	1.4	266	5.6	38	1030	100	120	16	69	19
17	6.4	e5.1	1.4	149	5.6	47	659	347	119	36	38	14
18	9.4	e4.0	1.5	935	5.3	18	1100	e173	38	23	30	17
19	4.0	e3.1	1.5	915	24	7.8	495	e85	22	14	23	13
20	3.4	e3.0	1.5	402	17	6.5	254	44	13	7.4	16	9.4
21	8.3	e2.6	1.6	219	30	4.1	137	29	11	50	9.4	8.1
22	33	e4.0	1.7	113	31	3.3	88	18	50	e68	5.5	7.7
23	39	e7.7	1.6	76	17	2.5	6.0	12	43	33	4.9	9.4
24	18	e4.0	1.6	65	9.2	2.5	47	9.9	30	39	5.0	21
25	9.7	e3.3	1.7	66	7.2	2.7	36	7.1	40	37	4.4	27
26	7.5	e3.1	2.2	49	7.3	2.4	27	4.7	53	25	5.2	27
27	8.2	e2.6	42	36	5.9	2.4	21	3.7	31	44	6.9	18
28	7.3	e2.4	25	30	6.2	2.7	18	4.8	21	37	10	14
29	6.2	e2.4	14	32	---	4.0	16	4.8	13	26	7.7	11
30	6.1	e2.4	6.5	26	---	2.8	12	6.5	8.8	22	7.1	10
31	15	---	4.7	15	---	2.7	---	6.5	---	18	13	---
TOTAL	226.2	547.1	140.8	5874.2	1637.0	312.4	9908.4	1039.6	866.5	732.0	839.1	2500.6
MEAN	7.30	18.2	4.54	189	58.5	10.1	330	33.5	28.9	23.6	27.1	83.4
MAX	39	143	42	935	516	62	1830	347	120	68	249	352
MIN	1.2	2.4	1.4	4.2	5.3	2.4	2.8	3.7	4.8	6.5	4.4	7.7
AC-FT	449	1090	279	11650	3250	620	19650	2060	1720	1450	1660	4960

CAL YR 1990	TOTAL	6781.68	MEAN	18.6	MAX	534	MIN	.72	AC-FT	13450
WTR YR 1991	TOTAL	24623.9	MEAN	67.5	MAX	1830	MIN	1.2	AC-FT	48840

e Estimated

08072500 BARKER RESERVOIR NEAR ADDICKS, TX

LOCATION.--Lat 29°46'11", long 95°38'49", Harris County, Hydrologic Unit 12040104, at dam on Buffalo Bayou, 45 ft upstream from reservoir outlet works, 1,160 ft upstream from Addicks-Howell county road, 1.1 mi south of Addicks, and 1.2 mi upstream from South Mayde Creek.

DRAINAGE AREA.--128 mi^2. Prior to August 1977, 134 mi^2. Basin boundary change due to relocation of drainage ditches. During extreme floods, basin may receive and (or) lose runoff due to basin interchange.

PERIOD OF RECORD.--August 1945 to current year. On October 1973, the upper gage was converted to a flood-hydrograph partial-record station.
Water-quality records.--Chemical and biochemical analyses: June 1978 to September 1981.

GAGE.--Water-stage recorders. Datum of gage is National Geodetic Vertical Datum of 1929, 1973 adjustment; unadjusted for land-surface subsidence (since 1973). Prior to Oct 1, 1980, 0.33 ft below National Geodetic Vertical Datum of 1929, unadjusted for land-surface subsidence.

REMARKS.--The reservoir is formed by a rolled earthfill dam 71,900 ft long. The dam was completed Feb. 3, 1946, but was used as early as the spring of 1945 for flood control. The reservoir is operated for flood protection for the city of Houston. The controlled outlet works consist of five concrete conduits, 9 x 7 ft wide, each controlled by a vertical slide gate. U.S. Army Corps of Engineers gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	114.7	-
Ground elevation at ends of dam	106.0	209,000
Design flood	105.4	199,000
Crest of spillway (invert)	73.2	0

COOPERATION.--The capacity table, furnished by the U.S. Army Corps of Engineers, is based on extensive releveling survey made in 1974 using National Geodetic Vertical Datum, 1973 adjustment as base.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, that of Apr. 20, 1991; minimum, reservoir was dry at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 42,150 acre-ft Apr. 20 from 0530 hours to 0900 hours (elevation, 93.63 ft) minimum, 0.12 acre-ft many days (elevation, 73.66 ft).

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

73.2	0	79.8	32	84.0	1,370	90.0	15,620
76.3	2	80.4	49	85.0	2,430	91.0	20,530
76.9	4	81.0	100	86.0	3,980	92.0	27,230
77.6	8	81.6	193	87.0	6,000	93.0	35,800
78.4	14	82.2	331	88.0	8,580	94.0	46,290
79.2	22	83.0	671	89.0	11,760		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.12	.14	.12	.15	9730	30.3	40.9	26870	3800	.20	.17	.38
2	.12	.16	.12	.58	8640	20.4	48.3	26720	2150	2.32	.16	1.05
3	.12	.15	.12	22.4	7810	.51	61.5	25980	877	10.6	.17	37.8
4	.12	.42	.12	80.3	9980	14.2	93.0	25470	23.2	.48	.17	505
5	.21	.29	.12	63.3	12610	40.1	777	25190	.21	.18	.17	1390
6	.15	.23	.12	20.4	13470	77.5	4150	23460	.18	.36	.16	2510
7	.14	.19	.24	20.5	12720	120	6820	21640	.26	11.6	.15	3660
8	.14	.28	.17	.64	11650	159	8170	22020	24.7	.42	.23	4220
9	.25	6.03	.14	29.6	10360	.42	8200	21640	133	.30	.20	4150
10	.19	2.56	.12	1070	9090	.14	8290	20370	231	.25	.19	4050
11	.15	.41	.12	3440	7620	.14	9660	19000	86.1	.23	.39	3360
12	.13	.28	.12	4570	6410	.14	11300	17700	.44	.22	.35	2280
13	.12	.21	.12	5030	5840	.13	12290	16290	.27	.23	.26	1390
14	.12	.17	.12	5610	4710	.13	15070	15320	.27	.19	.21	856
15	.12	.16	.12	6580	2930	.25	25690	14290	2.05	.17	11.8	272
16	.12	.17	.13	6700	1090	.79	30990	13930	18.7	1.32	176	12.1
17	.12	.15	.12	6770	108	.94	35330	14410	253	.44	229	2.91
18	.22	.15	.16	9120	27.5	.37	39940	15110	71.3	.29	41.8	.85
19	.17	.14	.12	12290	27.7	.26	41940	15490	1.30	.22	.40	22.4
20	.14	.13	.12	14530	.35	.20	41620	15580	.39	.17	.22	6.77
21	.32	.12	.12	15360	.94	.17	40770	15490	2.56	.32	.18	.31
22	.24	.12	.12	15490	.42	.16	39940	14740	551	.49	.16	.23
23	.21	.13	.12	15450	.32	.14	38520	13890	1920	.74	.15	.21
24	.20	.12	.13	15410	.29	.14	37140	12570	2400	.44	.14	.28
25	.19	.12	.12	14530	.30	.13	36270	11620	2260	.42	.14	10.3
26	.17	.12	.15	13470	.23	.13	34870	10760	1860	.30	.14	.32
27	.15	.12	.31	12900	.20	1.54	33950	9940	1070	.27	.14	.26
28	.14	.12	.27	12000	.38	5.20	33150	8720	380	.28	.14	.21
29	.14	.12	.23	11410	---	18.3	31670	7920	244	.26	.15	.18
30	.13	.12	.19	11480	---	26.0	28950	6940	45.1	.22	.15	.17
31	.13	---	.17	10820	---	33.0	---	5430	---	.19	.21	---
MAX	.32	6.03	.31	15490	13470	159	41940	26870	3800	11.6	229	4220
MIN	.12	.12	.12	.15	.20	.13	40.9	5430	.18	.17	.14	.17

CAL YR 1990 MAX 4540 MIN .12
WTR YR 1991 MAX 41940 MIN .12

08072730 BEAR CREEK NEAR BARKER, TX

LOCATION.--Lat 29°49'50", long 95°41'12", Harris County, Hydrologic Unit 12040104, on right bank at upstream side of bridge on Clay Road, 2.5 mi west of State Highway 6, and 4.1 mi upstream from mouth of Langham Creek.

DRAINAGE AREA.--21.5 mi^2. Prior to Oct. 1, 1988, 19.8 mi^2. Change due to road and ditch relocations.

PERIOD OF RECORD.--July 1977 to current year. Gage at temporary location 1,100 ft downstream Mar. 1, 1984, to Mar. 12, 1985.
Water-quality records.--Chemical and biochemical analyses: June 1978 to September 1981.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 100.00 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment. Mar. 1, 1984, to Mar. 12, 1985, at site 1,100 ft downstream, same datum.

REMARKS.--No estimated daily discharges. Records fair. Channel was rectified in 1981 and 1987 water years. Considerable diversions and return of irrigation water from area above station. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--14 years, 18.3 ft^3/s (13,260 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,060 ft^3/s Aug. 31, 1981 (gage height, 15.86 ft); maximum gage height, 16.72 ft Sept. 20, 1979, occurred prior to channel rectifications; no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 4	1500	*1,050	*12.59	No other peak greater than base discharge.			

Minimum discharge, no flow Oct. 1-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.42	.11	.24	4.8	45	.15	2.5	.46	13	6.3	3.5
2	.00	.34	.10	30	3.8	23	.13	41	.44	17	4.0	2.7
3	.00	.28	.08	78	4.0	12	.11	34	.72	10	3.0	25
4	.00	2.7	.06	29	151	6.8	.13	15	3.1	6.5	2.3	53
5	1.6	7.0	.05	10	172	4.1	151	7.7	1.1	4.3	1.7	22
6	1.0	2.3	.06	73	83	3.0	206	3.7	.69	3.6	1.2	51
7	.32	.98	.12	25	53	2.1	160	1.9	.88	5.4	.98	42
8	.15	13	.07	7.9	35	1.6	111	3.9	17	4.4	1.1	29
9	.60	45	.05	36	24	1.2	74	4.1	10	8.6	1.3	18
10	2.0	14	.04	191	16	.95	54	2.5	14	5.9	7.4	9.6
11	.66	7.7	.03	77	11	.82	137	1.4	3.1	4.0	29	5.9
12	.27	3.1	.03	28	8.5	.67	113	.91	1.5	3.5	14	4.3
13	.14	2.2	.04	14	7.4	.53	66	.59	1.3	3.5	10	5.1
14	.08	1.4	.04	13	6.5	.43	469	.47	1.2	3.2	7.8	8.1
15	.05	.93	.03	233	5.1	1.0	546	.48	16	3.0	102	15
16	.03	.76	.03	123	3.9	13	337	.52	13	5.6	28	20
17	5.4	.59	.03	68	3.4	16	228	66	3.2	8.4	4.5	8.0
18	25	.44	.27	239	2.7	2.7	260	77	2.0	4.5	1.4	29
19	8.6	.35	.11	239	12	1.3	192	46	1.9	3.6	.79	17
20	9.2	.29	.07	109	7.4	.81	143	25	1.5	2.9	.65	8.1
21	10	.23	.07	67	12	.61	100	10	2.2	2.4	.44	2.8
22	7.5	.21	.06	44	13	.49	75	4.8	79	6.9	.61	1.6
23	3.6	.40	.05	31	11	.40	56	2.6	86	13	14	1.2
24	1.6	.49	.04	28	7.4	.30	35	1.5	44	17	2.3	8.2
25	1.1	.35	.03	26	5.8	.25	19	.90	25	17	1.0	75
26	.96	.25	1.0	18	5.7	.21	12	.48	23	9.6	.48	24
27	1.0	.21	8.1	13	3.9	.18	7.3	.55	18	5.9	.29	9.1
28	1.0	.20	1.9	9.9	7.0	.19	4.7	.58	16	4.7	.21	4.8
29	.91	.16	.63	7.8	---	.29	3.2	.28	20	12	.20	2.9
30	.73	.13	.37	6.6	---	.18	1.9	.28	7.6	16	.22	2.1
31	.56	---	.27	5.7	---	.17	---	.43	---	13	.60	---
TOTAL	84.06	106.41	13.94	1880.14	680.3	140.28	3561.62	357.07	413.89	238.4	247.77	508.0
MEAN	2.71	3.55	.45	60.6	24.3	4.53	119	11.5	13.8	7.69	7.99	16.9
MAX	25	45	8.1	239	172	45	546	77	86	17	102	75
MIN	.00	.13	.03	.24	2.7	.17	.11	.28	.44	2.4	.20	1.2
AC-FT	167	211	28	3730	1350	278	7060	708	821	473	491	1010

CAL YR 1990	TOTAL	2271.34	MEAN	6.22	MAX	250	MIN	.00	AC-FT	4510
WTR YR 1991	TOTAL	8231.88	MEAN	22.6	MAX	546	MIN	.00	AC-FT	16330

08072760 LANGHAM CREEK AT WEST LITTLE YORK ROAD NEAR ADDICKS, TX
(Flood-hydrograph Partial-record Station)

LOCATION.--Lat 29°52'01", long 95°38'47", Harris County, Hydrologic Unit 12040104, at bridge on West Little York Road, 500 ft upstream from former site, 2.1 mi downstream from Dinners Creek, and 5.7 mi north of Addicks.

DRAINAGE AREA.--24.6 mi2.

PERIOD OF RECORD.--July 1977 to September 1980. October 1980 to September 1982 (peaks above base discharge and annual maximum), October 1982 to September 1989 (annual maximum). October 1989 to September 1991 (peaks above base and annual maximum).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 90.00 ft National Geodetic Vertical Datum of 1929, 1937 adjustment. Prior to June 12, 1979, water-stage recorder at bridge 100 ft upstream at same datum.

REMARKS.--Satellite gage-height and rainfall telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (estimated), 1,180 ft^3/s Sept. 19, 1979, at 2100 hours (gage height, 24.42 ft) and Apr. 14, 1991, at 1430 hours (gage height, 22.50 ft); no flow for a few days during period July to September 1977, and during the 1978 and 1980 water years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 24	1230	608	19.98	Apr. 14	1430	*1,180	*22.50
Jan. 10	0830	405	18.74				

Minimum discharge, not determined.

08073000 ADDICKS RESERVOIR NEAR ADDICKS, TX

LOCATION.--Lat 29°47'28", long 95°37'24", Harris County, Hydrologic Unit 12040104, at dam on South Mayde Creek, 65 ft upstream from reservoir outlet works, 2,700 ft upstream from U.S. Highway 90 and Interstate Highway 10, 1.2 mi east of Addicks, and 1.4 mi upstream from mouth.

DRAINAGE AREA.--136 mi². Prior to Aug. 1, 1977, 133 mi². Basin boundary change due to relocation of drainage ditches. During extreme floods, basin may receive and (or) lose runoff due to basin interchange.

PERIOD OF RECORD.--June 1948 to current year. In October 1973, the upper gages were converted to flood-hydrograph partial-record stations.
Water-quality records.--Chemical and biochemical analyses: June 1978 to September 1981.

GAGE.--Water-stage recorders. Datum of gage is National Geodetic Vertical Datum of 1929, 1973 adjustment; unadjusted for land-surface subsidence (since 1973). Prior to Oct. 1, 1980, datum of gage was National Geodetic Vertical Datum of 1929, unadjusted for land-surface subsidence that occurred prior to that date.

REMARKS.--The reservoir is formed by a rolled earthfill dam 61,166 ft long. The dam was completed in December 1948. The reservoir is operated for flood protection for the city of Houston. The outlet works consist of five concrete conduits 8 x 6 ft wide, each controlled by a vertical slide gate. Runoff in excess of maximum design capacity will be discharged around both ends of dam. Gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	122.7	-
Design flood	112.7	212,500
Ground elevation at ends of dam	112.0	200,800
Crest of spillway (invert)	71.1	0

COOPERATION.--The capacity table, furnished by the U.S. Army Corps of Engineers, was based on extensive releveling survey in 1974, using National Geodetic Vertical Datum, 1973 adjustment.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 37,460 acre-ft May 15, 1968 (elevation, 100.02 ft, former datum and former capacity table); minimum, reservoir was dry at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1935 reached a stage of 89.9 ft, former datum, at bridge on U.S. Highway 90, 2,700 ft downstream from gage, from information by the U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 30,710 acre-ft Apr. 20 at 0215 to 0930 hours (elevation, 96.78 ft); minimum, 0.36 acre-ft Oct. 15, 16-17 (elevation, 71.68 ft).

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

71.1	0	80.0	202	89.5	4,960	94.0	16,700
73.6	2	81.5	351	90.0	5,710	94.5	18,810
75.1	8	83.0	598	90.3	6,210	95.0	21,120
75.7	16	84.5	1,030	91.0	7,540	95.5	23,610
76.4	30	86.0	1,680	92.5	11,360	96.0	26,200
77.2	54	87.0	2,320	93.0	12,980	96.5	29,070
78.0	85	88.0	3,190	93.5	14,770	97.0	32,050
79.0	134	89.0	4,300				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.41	.38	.43	.52	8490	515	189	22040	3740	243	.48	1.2
2	.41	.39	.44	72	6770	544	210	21650	3370	74	.41	4.0
3	.41	.39	.44	612	5920	242	231	21360	2250	1.7	.38	91
4	.41	5.3	.43	858	7500	102	295	20830	685	.65	.55	414
5	.50	.92	.43	627	10620	156	1430	20500	1.0	.50	.43	427
6	.52	.62	.46	632	11180	199	5130	19340	.73	.46	.39	537
7	.77	.50	1.2	667	10280	236	6470	18110	.77	.95	.38	585
8	.76	3.7	.60	418	9020	264	6770	18290	91	.43	.41	385
9	.69	244	.47	509	7610	3.4	6420	17940	85	.82	.41	228
10	.77	181	.46	3070	6180	.45	6370	16820	82	.67	.38	67
11	.57	1.2	.46	4980	5250	.44	7420	15560	23	.49	.85	.91
12	.45	.64	.45	4820	4980	.42	8400	14320	2.3	.43	.57	.65
13	.40	.56	.46	4180	5000	.41	8830	13050	.89	.40	.57	.50
14	.37	.53	.46	4180	4060	.41	15980	12050	.74	.41	.51	.50
15	.36	.50	.46	6510	2530	27	22890	11150	98	.41	265	.65
16	.36	.48	.48	7240	1060	75	25710	10740	196	34	438	1.4
17	4.0	.46	.65	7300	344	82	27750	10910	284	.89	208	7.2
18	30	.45	1.1	10060	177	.52	29820	11390	68	.47	1.2	1.1
19	1.1	.45	.73	13290	156	.47	30650	11640	.61	.43	.84	132
20	.66	.44	.49	14810	10	.44	30350	11770	.48	.44	.68	95
21	13	.44	.47	15220	25	.42	29760	11550	.83	.65	.68	.86
22	1.3	.43	.61	15100	1.6	.41	29530	11000	501	.49	.57	.54
23	.74	.55	.55	14920	.84	.41	28660	10230	1710	1.0	1.1	.47
24	.59	.59	.61	14840	.83	.41	27630	9050	2160	2.4	.74	.55
25	.49	.51	.62	14070	.82	.41	26970	8130	2550	1.0	.64	88
26	.43	.46	.67	12950	.83	.41	26200	7380	2730	.61	.57	1.8
27	.41	.46	23	12310	.78	19	25280	6600	1810	.52	.50	.87
28	.41	.46	.74	11550	2.0	42	24530	5490	1090	.65	.49	.66
29	.39	.46	.54	10940	---	118	23860	4850	892	.46	.50	.49
30	.38	.44	.52	10940	---	148	22890	4480	657	.47	.52	.60
31	.38	---	.55	10120	---	168	---	4100	---	.61	.64	---
MAX	30	244	23	15220	11180	544	30650	22040	3740	243	438	585
MIN	.36	.38	.43	.52	.78	.41	189	4100	.48	.40	.38	.47

CAL YR 1990 MAX 6180 MIN .36
WTR YR 1991 MAX 30650 MIN .36

08073500 BUFFALO BAYOU NEAR ADDICKS, TX

LOCATION.--Lat 29°45'42", long 95°36'20", Harris County, Hydrologic Unit 12040104, near right bank at bridge on Dairy-Ashford Road over rectified channel, 1.8 mi downstream from South Mayde Creek, and 2.6 mi southeast of Addicks.

DRAINAGE AREA.--293 mi², unadjusted for basin boundary changes.

PERIOD OF RECORD.--August 1945 to current year.
Water-quality records.--Chemical analyses: October 1962 to March 1963. Chemical, biochemical, and pesticide analyses: August 1970 to September 1982.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1.40 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment; records unadjusted to land-surface subsidence. Prior to Feb. 2, 1948, water-stage recorde at bridge on natural channel 1,200 ft to right at same datum. Feb. 2 to May 21, 1948, nonrecording gage at present site and datum.

REMARKS.--Records poor. Floodflows are regulated by Barker and Addicks Reservoirs (stations 08072500 and 08073000), 3.2 and 3.0 mi upstream, respectively (total capacity, 315,900 acre-ft). Extreme low flow is sustained by drainage from irrigated lands, and from minor sewage effluent.

AVERAGE DISCHARGE.--46 years, 214 ft³/s (155,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s Aug. 29, 1945 (gage height, 81.23 ft), former site; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1896, 85.6 ft in December 1935, adjusted to former site from floodmark 0.5 mi downstream, on basis of slope of flood of Aug. 29, 1945, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,910 ft³/s Jan. 15 , time unknown (gage height, 60.95 ft, from CSG); minimum daily, 9.5 ft³/s Apr. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	42	e33	58	e1350	e770	9.5	e1500	879	399	85	177
2	36	47	e33	e700	e1300	e600	10	e600	844	378	61	219
3	38	47	e34	e740	e1100	e500	10	e520	992	363	53	307
4	40	108	e32	e580	e1050	e300	37	e500	1140	181	69	594
5	60	175	e31	e580	e500	e40	776	e260	607	88	70	620
6	51	86	e60	e585	e600	e38	e700	e800	79	73	59	834
7	59	63	e150	e540	e1400	e37	e270	e1400	66	288	51	673
8	51	228	e70	e520	e1450	e36	e500	e750	327	212	117	659
9	70	442	e45	e600	e1460	e250	e680	e270	513	127	81	707
10	76	421	e38	e800	e1400	e100	e600	e1050	428	119	77	860
11	55	306	e35	e500	e1300	e52	e450	e1300	367	102	178	813
12	46	95	e33	e750	e900	e40	e200	e1300	260	81	169	712
13	39	70	e32	e720	e300	e45	e150	e1250	103	66	121	578
14	40	57	e31	e700	e600	e42	964	e1090	85	74	97	338
15	42	55	e33	e1100	1120	e40	433	e980	216	76	230	322
16	40	51	e50	e880	1460	e300	522	e800	422	117	505	362
17	70	48	e50	e880	e1000	e350	e398	e540	511	317	526	304
18	268	46	60	e900	e250	e200	e960	e90	574	134	425	294
19	178	45	50	e400	e310	e140	e450	e68	381	100	207	419
20	75	41	34	e80	e300	e90	e750	e58	265	83	102	480
21	208	38	32	e300	e440	37	e1000	e240	180	82	83	257
22	208	37	38	e460	e330	29	e600	e580	572	185	64	111
23	94	44	40	e400	e200	26	e900	e780	197	184	78	85
24	74	43	40	e220	e130	25	e1300	e1050	645	288	77	98
25	70	37	41	e700	e120	23	e620	e1000	821	234	50	323
26	61	36	98	e1050	e90	23	e980	e720	645	171	44	315
27	54	39	284	e820	e74	17	e960	e720	986	131	42	156
28	52	e37	163	e660	e170	11	e900	e1000	901	127	37	110
29	48	e36	77	e640	---	21	e580	788	311	121	42	85
30	46	e34	66	e80	---	12	e1500	585	294	97	42	72
31	43	---	59	e500	---	10	---	818	---	90	133	---
TOTAL	2327	2854	1872	18443	20704	4204	18209.5	23407	14611	5088	3975	11884
MEAN	75.1	95.1	60.4	595	739	136	607	755	487	164	128	396
MAX	268	442	284	1100	1460	770	1500	1500	1140	399	526	860
MIN	35	34	31	58	74	10	9.5	58	66	66	37	72
AC-FT	4620	5660	3710	36580	41070	8340	36120	46430	28980	10090	7880	23570

CAL YR 1990	TOTAL	50048	MEAN	137	MAX	1310	MIN	19	AC-FT	99270
WTR YR 1991	TOTAL	127578.5	MEAN	350	MAX	1500	MIN	9.5	AC-FT	253100

e Estimated

08073600 BUFFALO BAYOU AT WEST BELT DRIVE, HOUSTON, TX

LOCATION.--Lat 29°45'43", long 95°33'27", Harris County, Hydrologic Unit 12040104, at downstream side of bridge on West Belt Drive in west Houston, 100 ft downstream from Rummel Creek, 3.5 mi downstream from station 08073500, and 3.7 mi upstream from station 08073700.

DRAINAGE AREA.--307 mi^2, unadjusted for basin boundary changes.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1971 to current year.

GAGE.--Water-stage recorders, Data collection platform (DCP), and crest-stage gage. Datum of gage is 0.67 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--No estimated daily discharges. Records fair. Stage discharge relationship is affected by seasonal vegetal growth during most years. High water flow is a combination of regulated flow from Barker and Addicks Reservoirs (stations 08072500 and 08073000, located 10.1 and 10.3 mi upstream, respectively), and runoff from highly urbanized areas below these reservoirs. Low flow is mostly sustained by sewage effluent. Gage-height telemeter (DCP) at station.

AVERAGE DISCHARGE.--20 years, 301 ft^3/s (218,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,350 ft^3/s Aug. 31, 1981 (gage height, 64.58 ft); minimum daily, 20 ft^3/s Apr. 20, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,530 ft^3/s Jan. 15 at 0200 hours (gage height, 54.27 ft); minimum daily, 25 ft^3/s Apr. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	45	34	59	1350	769	28	1660	893	415	83	177
2	39	59	34	728	1420	607	26	721	861	419	65	297
3	39	54	36	834	1090	523	25	585	982	393	54	304
4	66	144	35	603	1210	300	212	635	1200	232	67	619
5	71	226	33	599	528	46	1340	326	751	119	70	659
6	60	123	70	637	689	44	754	903	108	112	62	1100
7	69	79	157	562	1470	42	345	1640	97	302	59	731
8	62	310	76	524	1540	40	469	942	375	259	112	692
9	91	538	52	717	1500	286	850	412	595	165	80	737
10	103	461	41	985	1470	115	704	1080	497	143	76	866
11	66	356	38	542	1310	62	608	1310	414	117	175	842
12	46	132	36	838	897	63	228	1300	317	95	172	730
13	38	83	34	782	366	61	179	1320	137	87	120	625
14	37	62	34	750	739	56	1230	1110	127	82	96	381
15	36	50	35	1320	1410	80	827	1020	398	76	237	368
16	36	47	56	951	1430	373	833	848	612	137	520	405
17	124	45	52	982	1050	397	615	587	712	339	540	464
18	271	43	79	1090	266	300	1030	107	594	166	453	397
19	209	42	66	412	381	160	484	88	483	108	223	483
20	88	38	42	217	298	110	859	77	359	86	101	525
21	313	37	39	301	495	80	1170	278	267	81	81	310
22	245	39	43	518	330	69	742	621	722	190	68	110
23	115	57	42	479	197	60	1040	822	379	247	77	83
24	85	56	47	256	142	54	1520	1090	749	319	76	120
25	75	43	46	920	141	53	776	1090	918	257	52	367
26	63	40	175	1190	130	51	1030	794	652	177	49	373
27	51	45	367	860	91	47	1010	782	922	129	48	168
28	49	47	212	761	187	37	885	1040	960	126	43	107
29	48	39	101	851	---	100	644	909	342	121	47	81
30	46	37	73	86	---	33	1640	597	324	100	52	71
31	44	---	81	521	---	30	---	817	---	90	151	---
TOTAL	2724	3377	2266	20875	22127	5048	22103	25511	16747	5689	4109	13192
MEAN	87.9	113	73.1	673	790	163	737	823	558	184	133	440
MAX	313	538	367	1320	1540	769	1640	1660	1200	419	540	1100
MIN	36	37	33	59	91	30	25	77	97	76	43	71
AC-FT	5400	6700	4490	41410	43890	10010	43840	50600	33220	11280	8150	26170

CAL YR 1990	TOTAL	64585	MEAN	177	MAX	1350	MIN	20	AC-FT	128100
WTR YR 1991	TOTAL	143768	MEAN	394	MAX	1660	MIN	25	AC-FT	285200

08073600 BUFFALO BAYOU AT WEST BELT DRIVE, HOUSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: June 1978 to current year. Chemical and biochemical analyses: June 1978 to August 1986. Pesticide analyses: June 1978 to March 1983. Sediment analyses: May 1979 to August 1986.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1979 to September 1981.
WATER TEMPERATURES: June 1979 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 922 microsiemens June 25, 1979; minimum daily, 78 microsiemens Aug. 31, 1981.
WATER TEMPERATURE: Maximum daily, 30.5°C July 1, 1978; minimum daily, 1.0°C Nov. 27, 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV												
29...	0836	31	772	7.8	18.0	25	10	7.7	79	1.0	0.8	140
FEB												
28...	0840	76	516	8.0	15.0	110	49	9.0	88	3.3	2.7	110
MAY												
08...	0908	498	144	7.4	23.0	100	8.8	4.9	57	5.6	4.2	47
AUG												
07...	0918	51	733	7.8	28.0	25	24	5.7	72	1.7	1.3	140

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV												
29...	0	42	7.5	110	4	8.5	190	29	99	0.40	18	428
FEB												
28...	0	35	6.2	61	2	6.2	130	28	57	0.30	11	281
MAY												
08...	0	15	2.3	10	0.6	3.6	54	2.7	9.0	<0.10	6.8	82
AUG												
07...	0	43	7.3	98	4	9.0	170	29	100	0.40	19	405

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV												
29...	9	2	7	--	<0.010	<0.100	0.050	0.55	0.60	0.160	0.130	6.0
FEB												
28...	29	4	25	4.83	0.070	4.90	0.160	1.5	1.7	2.40	1.80	12
MAY												
08...	11	10	1	0.400	0.030	0.430	0.050	1.4	1.4	0.610	0.010	13
AUG												
07...	15	8	7	6.32	0.080	6.40	0.090	1.0	1.1	2.70	2.70	6.8

08073700 BUFFALO BAYOU AT PINEY POINT, TX

LOCATION.--Lat 29°44'48", long 95°31'24", Harris County, Hydrologic Unit 12040104, on right bank at upstream side of bridge on Piney Point Road, village of Piney Point, 3.7 mi downstream from Rummel Creek, 7.2 mi downstream from gage near Addicks (station 08073500), and 12.5 mi upstream from gage at Houston (station 08074000).

DRAINAGE AREA.--317 mi².

PERIOD OF RECORD.--October 1963 to September 1976 and October 1984 to current year. October 1976 to September 1984 (gage heights only).
Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1970 to September 1978.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is 1.35 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--No estimated daily discharges. Records fair. High-water flow is a combination of regulated flow from Barker and Addicks Reservoirs (stations 08072500 and 08073000, located 14.0 and 13.8 mi upstream from gage, respectively), and runoff from highly urbanized areas below these reservoirs. Low flow is mostly sustained by sewage effluent. Gage-height telemeter (DCP) at station.

AVERAGE DISCHARGE.--20 years (water years 1964-76, 1985-91), 275 ft³/s (199,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (estimated), 5,700 ft³/s Aug. 31, 1981 (gage height, 57.20 ft, from floodmark); maximum gage height, 57.31 ft May 18, 1989; minimum daily discharge, 6.0 ft³/s Dec. 6, 7, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,580 ft³/s Apr. 5 at 1630 hours (gage height, 47.64 ft); minimum daily, 24 ft³/s Apr. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	46	40	71	1370	883	25	1700	980	439	84	178
2	42	61	41	791	1450	635	24	842	960	472	66	360
3	49	60	42	986	1190	543	28	574	1060	419	58	308
4	140	139	40	608	1330	342	252	673	1300	278	64	634
5	79	231	38	607	641	55	152	334	731	139	71	733
6	88	134	63	684	619	45	912	845	109	176	63	1280
7	80	84	179	574	1470	42	341	1700	93	314	56	795
8	75	317	89	534	1540	38	416	1260	382	294	107	732
9	101	612	58	782	1470	247	881	424	651	190	82	767
10	115	458	49	1280	1490	142	755	1110	548	158	72	946
11	78	373	45	525	1370	57	735	1390	431	129	171	943
12	55	162	43	869	992	58	208	1380	382	104	176	797
13	44	108	40	811	366	55	150	1400	246	86	123	689
14	43	80	41	808	684	51	1320	1230	216	84	98	387
15	42	62	39	1540	1460	83	1020	1090	514	79	225	371
16	41	59	75	955	1490	386	903	949	640	227	555	407
17	154	56	60	1100	1190	384	586	717	915	367	578	477
18	265	52	92	1220	285	302	1200	158	668	187	503	450
19	223	52	84	475	434	150	525	119	605	117	250	495
20	102	49	51	216	289	106	861	95	484	84	116	540
21	356	46	49	271	626	79	1240	271	405	72	86	347
22	266	64	53	485	346	64	795	677	832	183	73	132
23	136	67	47	511	209	55	1030	950	408	279	73	97
24	96	64	45	188	149	50	1590	1150	912	341	90	118
25	83	47	43	927	157	46	827	1240	1090	285	57	366
26	70	47	199	1230	136	42	1050	894	698	191	54	380
27	58	53	383	932	102	43	1100	887	999	133	52	187
28	54	61	226	714	194	30	968	1110	1130	124	47	122
29	52	46	119	950	---	122	583	1070	391	123	50	92
30	48	41	89	87	---	28	1670	613	360	108	52	79
31	47	---	73	429	---	26	---	922	---	96	169	---
TOTAL	3125	3731	2535	22160	23049	5189	22147	27774	19140	6278	4321	14209
MEAN	101	124	81.8	715	823	167	738	896	638	203	139	474
MAX	356	612	383	1540	1540	883	1670	1700	1300	472	578	1280
MIN	41	41	38	71	102	26	24	95	93	72	47	79
AC-FT	6200	7400	5030	43950	45720	10290	43930	55090	37960	12450	8570	28180

CAL YR 1990 TOTAL 72063 MEAN 197 MAX 1550 MIN 24 AC-FT 142900
WTR YR 1991 TOTAL 153658 MEAN 421 MAX 1700 MIN 24 AC-FT 304800

08074000 BUFFALO BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°45'36", long 95°24'30", Harris County, Hydrologic Unit 12040104, on right bank at downstream side of bridge on Shepherd Drive in Houston and 0.8 mi upstream from Waugh Drive.

DRAINAGE AREA.--358 mi², unadjusted for basin boundary changes.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1936 to September 1957, October 1957 to December 1961 (high-water records and discharge measurements), January 1962 to September 1975, October 1975 to current year (high-water records and discharge measurements).

REVISED RECORDS.--WSP 1732: Drainage area (former site).

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1.36 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment; records unadjusted for land-surface subsidence. Prior to June 19, 1936, nonrecording gage, and June 19, 1936, to Jan. 16, 1962, water-stage recorder at site 0.8 mi downstream at 4.08-feet lower datum. Jan. 17, 1962, to Sept. 30, 1973, auxiliary water-stage recorder 0.8 mi downstream. Water-stage recorder at Main Street (station 08074600) used as auxiliary gage after Sept. 30, 1973.

REMARKS.--Records fair. Although floodflows are regulated by Barker and Addicks Reservoirs (stations 08072500 and 08073000) located 26.3 and 26.8 mi upstream, respectively, flood peaks from the urbanized areas below these reservoirs are often independent of the regulation. Discharge is computed using a stage-fall-discharge relationship for all storms that produce peak discharges above 2,000 ft³/s. Discharges below 1,000 ft³/s are computed or estimated following designated storm periods only. Low flow is mostly sustained by sewage effluent from Houston suburbs. Gage heights are affected by tides, backwater from Whiteoak Bayou, and other streams. Gage-height telemeter at station.

AVERAGE DISCHARGE.--8 years (water years 1936-44) unregulated, 272 ft³/s (197,100 acre-ft/yr); 26 years (water years 1944-57, 1962-75) regulated, 274 ft³/s (198,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft³/s Aug. 30, 1945 (gage height, 28.82 ft), at site 0.8 mi downstream at present datum; maximum gage height, 30.00 ft May 18, 1989, at current site; minimum daily, 1.3 ft³/s May 24, 1939, Nov. 5, 1950, occurred prior to urban development and accompanying sewage effluent releases.

EXTREMES OUTSIDE PERIOD OF RECORD.--All flood data at site 0.8 mi downstream at present datum. Maximum gage height since at least 1835, 49.0 ft Dec. 9, 1935 (discharge, 40,000 ft³/s); furnished by engineer for Harris County. Flood of May 31, 1929, reached a gage height of 43.5 ft (discharge, 19,000 ft³/s), at bridge on Capitol Avenue, affected by bridge; furnished by city of Houston.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,840 ft³/s Apr. 5 at 1900 hours (gage height, 19.28 ft); minimum discharges not determined (affected by tides).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	1240	---	---	---	---	---	---	---	---
3	---	---	---	2000	---	---	---	---	---	---	---	---
4	---	---	---	---	2180	---	939	---	---	---	---	---
5	---	---	---	---	1720	---	2680	---	---	---	---	---
6	---	---	---	---	---	---	2300	---	---	---	---	1710
7	---	---	---	---	---	---	---	1700	---	---	---	1070
8	---	337	---	---	---	---	---	2030	---	---	---	---
9	---	1190	---	1060	---	---	---	1100	---	---	---	---
10	---	---	---	3210	---	---	---	---	---	---	---	---
11	---	---	---	874	---	---	1370	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	1090	---	---	1780	---	---	---	---	---
15	---	---	---	3300	---	---	2180	---	1280	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	643	---	1550	---	---	---
18	---	---	---	2190	---	---	2050	---	---	---	---	---
19	---	---	---	1320	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	853	---	---	---
21	---	---	---	---	1390	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---

CAL YR 1990	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---		
WTR YR 1991	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---		

08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1968 to July 1981. Pesticide analyses: February 1969 to July 1981.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1986 to current year.
WATER TEMPERATURE: April 1986 to current year.
DISSOLVED OXYGEN: April 1986 to current year.

INSTRUMENTATION.--Since April 1986, a three-parameter water-quality monitor continuously records specific conductance, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrumentation.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum, >1020 microsiemens Oct 16, 1987, Mar. 14, 1988; minimum, 67 microsiemens Apr. 27, 1990.
WATER TEMPERATURE: Maximum, 31.5°C on many days during summer months; minimum 5.0°C Dec. 24, 1989.
DISSOLVED OXYGEN: Maximum, 12.0 mg/L Jan. 7, 1988; minimum, 1.1 mg/L Aug. 9, 1988.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 970 microsiemens Apr. 3; minimum, 82 microsiemens Jan. 15.
WATER TEMPERATURE: Maximum, 31.5°C July 14, 15; minimum, 7.5°C Dec. 24.
DISSOLVED OXYGEN: Maximum, 10.6 mg/L Jan. 28; minimum, 1.8 mg/L Mar. 29.

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	2960	1120	1730	1940	834	1210	1490	941	1130	676	523	591
2	2810	1490	2080	2600	807	1210	1420	837	1050	680	103	307
3	2480	1370	1970	1380	663	817	1290	787	993	203	120	165
4	2320	374	1160	873	587	715	1170	778	921	199	179	189
5	708	327	488	685	379	549	2240	856	1270	195	180	190
6	689	302	433	626	267	406	1260	719	1090	215	149	194
7	661	473	566	628	372	451	693	346	526	260	188	214
8	711	401	527	660	177	477	602	426	496	217	195	201
9	695	410	562	273	130	197	639	434	512	229	146	206
10	612	401	547	218	191	202	661	469	556	148	84	117
11	692	462	546	250	210	236	810	615	681	243	127	198
12	831	510	589	387	236	273	1170	664	806	231	138	160
13	832	569	672	563	310	408	2220	762	1130	159	142	151
14	816	619	673	627	418	505	1560	851	1090	166	94	150
15	831	621	687	697	488	570	1870	925	1170	155	95	117
16	914	658	765	762	563	623	1460	736	1100	221	162	190
17	1300	191	680	1200	616	722	1000	793	896	184	147	158
18	381	202	312	1610	757	964	1320	576	770	164	97	130
19	475	273	323	1830	838	1100	779	670	711	203	107	154
20	552	280	325	1180	864	1010	919	662	737	856	201	273
21	518	164	330	1310	832	1020	1020	607	822	498	275	315
22	327	169	244	1290	368	994	860	655	708	392	185	243
23	619	255	330	505	393	438	886	636	733	238	146	165
24	624	357	412	606	370	455	1090	738	795	344	147	213
25	687	426	512	1380	540	777	1150	827	902	564	129	238
26	779	522	600	1390	862	1070	1360	295	910	156	116	127
27	873	560	649	1700	851	1040	358	229	280	127	113	120
28	826	607	667	961	741	845	389	295	325	185	123	164
29	903	648	715	1120	723	847	464	311	359	153	114	124
30	1040	699	829	1260	799	983	566	411	477	396	133	208
31	1210	763	932	---	---	---	645	492	552	675	233	387
MONTH	2960	164	705	2600	130	704	2240	229	790	856	84	205

08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	552	111	169	248	138	203	749	494	623	133	122	125
2	119	108	114	232	193	205	790	558	670	163	127	142
3	125	114	119	226	200	220	788	661	728	197	156	181
4	182	88	128	248	207	235	802	111	465	190	154	174
5	190	102	149	716	245	350	278	111	167	300	157	191
6	278	182	212	732	336	491	177	119	157	311	164	213
7	242	135	149	823	448	601	213	177	195	169	133	142
8	144	133	137	777	623	714	336	214	248	177	104	145
9	144	135	139	854	672	739	293	158	194	245	107	170
10	144	130	137	772	392	481	185	159	171	352	149	201
11	144	128	134	727	397	471	212	133	165	163	136	142
12	153	132	140	755	436	590	311	158	242	171	140	150
13	324	147	197	869	574	744	389	316	346	171	143	151
14	267	183	217	881	747	786	463	114	273	182	144	157
15	193	125	139	906	477	761	204	124	156	210	169	179
16	166	137	146	670	289	529	209	141	173	247	167	193
17	180	168	172	329	217	274	211	144	181	227	177	207
18	286	184	229	399	253	300	178	120	146	303	225	252
19	325	236	272	429	295	336	291	183	217	386	257	322
20	445	248	361	660	376	455	289	158	188	449	394	421
21	360	169	229	795	421	556	155	132	138	559	399	461
22	344	217	291	743	533	615	184	138	156	492	226	301
23	361	331	346	801	603	664	166	148	156	244	193	210
24	458	364	395	840	651	739	141	116	123	206	190	199
25	486	404	433	1080	694	767	182	114	147	195	177	180
26	497	415	442	985	730	783	174	129	142	204	190	197
27	669	430	504	869	757	798	139	125	129	201	193	199
28	771	366	554	934	745	827	141	125	133	219	198	211
29	---	---	---	651	349	502	269	133	173	217	194	203
30	---	---	---	560	449	502	329	121	146	278	221	254
31	---	---	---	647	427	521	---	---	---	253	228	241
MONTH	771	88	238	1080	138	541	802	111	238	559	104	210

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	382	256	316	347	275	301	585	470	524	1230	659	934
2	450	385	417	343	219	272	670	555	619	1390	312	858
3	473	440	456	353	222	286	725	642	659	805	263	402
4	454	300	352	303	212	277	806	546	696	516	303	419
5	327	295	313	440	248	322	700	488	621	587	358	482
6	383	291	337	524	243	404	738	571	651	607	430	511
7	519	368	453	451	256	314	820	340	543	560	470	519
8	375	323	344	432	269	307	810	596	677	621	563	595
9	418	368	391	384	297	331	1900	684	812	658	623	642
10	407	368	383	434	349	401	1990	695	1050	664	198	384
11	445	347	412	516	437	475	2560	1270	1670	218	190	202
12	412	327	355	572	504	534	1780	166	1080	220	189	207
13	437	373	414	631	505	571	1110	402	561	209	170	201
14	432	371	387	700	539	631	619	180	429	282	208	245
15	457	415	442	749	579	651	644	244	422	319	259	279
16	470	74	407	729	190	618	449	221	350	331	278	299
17	211	113	171	555	215	350	563	288	398	348	288	322
18	257	210	234	373	230	309	736	568	662	349	166	249
19	253	153	202	587	377	452	1050	711	857	311	233	266
20	364	100	248	777	498	574	1210	1030	1110	247	185	212
21	337	144	202	889	428	598	1330	1200	1270	262	192	229
22	280	159	215	629	407	489	1330	1300	1320	392	243	283
23	259	116	194	588	394	477	1300	1210	1260	520	330	421
24	302	114	183	489	278	337	1200	1130	1160	630	427	501
25	200	168	184	393	296	340	1130	1110	1120	1270	333	558
26	239	171	211	416	336	374	1250	1100	1130	706	245	361
27	212	175	188	520	388	447	2540	1100	1450	2250	253	537
28	196	156	174	662	467	528	2620	1200	1600	2260	787	1150
29	290	190	234	722	316	547	1810	1230	1460	2630	1210	1490
30	327	266	291	667	158	521	2590	1390	1860	2940	1600	2270
31	---	---	---	538	286	407	2890	642	1480	---	---	---
MONTH	519	74	304	889	158	434	2890	166	952	2940	166	534

08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	21.5	19.5	20.5	17.5	15.5	16.0	11.5	10.5	11.0
2	27.0	25.0	26.0	22.0	20.5	21.5	20.0	17.5	18.5	12.0	10.0	11.0
3	28.0	26.0	26.5	23.0	22.0	22.5	20.0	17.0	19.0	12.5	12.0	12.0
4	27.5	26.5	27.0	23.0	20.5	22.5	16.5	14.5	15.5	12.0	11.0	11.5
5	28.0	26.0	27.0	20.5	17.0	19.0	14.5	13.0	13.5	12.0	11.0	11.5
6	29.0	26.5	27.5	17.5	16.0	16.5	17.0	13.5	14.5	15.5	12.0	14.0
7	29.0	27.0	28.0	18.0	16.5	17.5	17.0	15.5	16.0	15.5	14.5	15.0
8	28.5	27.5	28.0	18.0	16.0	17.5	15.5	13.0	14.0	14.5	12.5	13.5
9	28.0	23.0	25.5	16.0	14.5	15.5	14.5	12.5	13.5	13.0	12.0	12.5
10	23.0	20.5	21.5	14.5	14.0	14.5	14.5	12.5	13.5	13.5	12.5	13.0
11	20.5	19.0	20.0	14.5	13.5	14.0	16.5	14.5	15.5	13.5	13.0	13.0
12	20.5	18.5	19.5	16.5	14.0	15.5	18.5	16.0	17.5	12.5	11.5	12.0
13	21.0	18.5	19.5	17.0	15.0	16.0	19.5	17.5	18.5	11.5	11.5	11.5
14	22.5	19.5	21.0	17.5	16.0	17.0	20.5	19.0	19.5	14.0	11.5	12.0
15	24.5	22.0	23.0	18.5	17.0	18.0	21.0	20.0	20.5	14.0	13.5	14.0
16	24.5	23.0	23.5	20.0	18.5	19.5	22.0	20.5	21.5	13.5	12.5	13.0
17	25.0	23.5	24.0	21.0	19.5	20.0	22.5	22.0	22.0	12.5	12.5	12.5
18	24.0	22.0	23.5	21.5	20.0	20.5	22.5	19.5	21.0	13.0	11.0	12.0
19	22.0	20.5	21.0	22.0	20.5	21.0	19.0	18.0	18.5	12.0	11.5	11.5
20	21.5	19.5	20.5	22.5	21.0	21.5	19.0	17.5	18.0	13.0	11.5	12.0
21	21.5	20.5	21.5	22.5	21.5	22.0	21.0	19.0	20.0	12.0	11.5	11.5
22	20.5	19.0	20.0	23.5	22.0	22.5	18.5	12.0	15.0	11.0	10.5	11.0
23	19.5	18.0	19.0	23.0	20.5	22.0	12.0	8.5	10.5	11.5	10.5	11.0
24	19.0	17.5	18.5	20.5	19.5	20.0	9.0	7.5	8.5	12.5	11.5	12.0
25	19.5	17.5	18.5	21.0	19.5	20.5	9.5	8.0	9.0	12.5	10.5	11.5
26	19.0	17.5	18.0	22.5	21.0	22.0	11.0	9.5	10.0	11.5	11.0	11.0
27	19.5	17.5	18.5	23.0	22.5	22.5	10.5	10.0	10.5	11.5	11.0	11.5
28	20.5	18.0	19.0	23.0	20.5	22.0	12.0	10.0	11.0	13.0	12.0	12.5
29	21.0	19.5	20.0	20.5	17.5	19.0	16.0	12.0	14.0	13.0	12.0	12.5
30	21.5	19.5	20.0	17.0	15.0	16.5	16.5	13.5	15.5	13.5	12.5	13.0
31	21.5	19.5	20.5	---	---	---	13.5	11.0	12.0	13.0	11.5	12.0
MONTH	29.0	17.5	22.0	23.5	13.5	19.5	22.5	7.5	15.5	15.5	10.0	12.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.5	11.0	11.5	18.5	17.0	18.0	20.5	18.0	19.0	25.0	24.0	24.0
2	12.0	11.0	11.5	20.0	18.5	19.5	20.5	19.0	20.0	25.0	23.5	24.0
3	12.5	11.5	12.0	19.5	17.5	19.0	21.5	20.0	20.5	24.0	23.5	24.0
4	16.0	12.5	14.0	18.0	16.5	17.5	21.5	20.0	20.5	25.0	23.5	24.0
5	16.0	16.0	16.0	20.0	16.5	18.0	20.5	18.5	19.5	25.0	23.5	24.5
6	17.0	15.0	16.0	22.0	18.5	20.0	22.0	19.0	20.0	24.0	21.5	23.0
7	15.0	15.0	15.0	21.0	20.5	21.0	22.5	20.0	21.5	23.5	23.0	23.5
8	15.0	14.5	15.0	21.5	19.0	20.0	24.5	22.0	23.0	23.5	21.5	23.0
9	15.0	14.5	15.0	20.5	18.0	19.5	24.5	22.5	23.5	22.0	20.0	21.0
10	15.5	14.5	15.0	19.5	18.0	18.5	24.0	23.0	23.0	25.5	22.0	24.0
11	16.0	15.5	15.5	19.0	17.5	18.5	23.0	22.0	22.5	26.0	25.0	25.5
12	16.5	15.5	16.0	20.5	18.0	19.0	24.5	23.0	23.5	26.5	25.5	26.0
13	18.0	16.0	17.0	20.5	18.0	19.0	24.5	23.5	24.0	27.0	26.0	26.5
14	17.5	16.5	17.0	19.0	17.0	17.5	24.0	21.0	22.5	27.0	26.5	26.5
15	17.0	15.5	16.5	16.5	15.0	16.0	23.0	21.0	22.0	26.5	25.0	25.5
16	15.5	14.0	15.0	15.5	14.5	15.0	23.5	22.0	22.5	25.5	24.5	25.0
17	15.0	14.0	14.0	16.5	14.5	15.5	23.0	22.0	22.5	24.5	24.0	24.5
18	17.5	15.0	16.5	18.0	16.0	17.0	24.0	22.0	23.0	25.0	24.0	24.5
19	18.0	17.0	17.5	19.5	16.5	18.0	25.0	23.5	24.0	25.0	24.0	24.5
20	17.0	16.0	16.5	20.0	18.0	19.0	24.0	21.5	22.5	26.0	24.5	25.0
21	15.5	13.0	14.0	21.0	20.0	20.5	23.0	21.0	21.5	26.5	25.0	25.5
22	14.0	13.5	14.0	22.5	21.0	22.0	23.0	23.0	23.0	25.0	24.5	24.5
23	15.0	13.0	14.0	21.5	20.0	20.5	24.0	21.0	22.5	25.5	24.5	25.0
24	16.0	13.5	14.5	21.0	19.0	20.0	24.0	23.0	23.5	25.5	24.5	25.0
25	16.0	14.5	15.5	22.0	20.0	21.0	24.5	23.0	23.5	26.5	25.5	26.0
26	14.5	14.0	14.5	24.5	21.5	23.0	24.0	23.5	24.0	27.0	25.5	26.5
27	15.0	13.5	14.0	24.0	23.0	23.5	24.5	24.0	24.0	27.0	26.0	26.5
28	17.0	14.5	15.5	23.0	22.0	22.5	24.5	23.5	24.0	27.5	26.0	26.5
29	---	---	---	22.5	20.5	21.5	25.0	23.0	24.0	27.5	27.0	27.5
30	---	---	---	21.0	19.0	20.0	24.5	23.0	24.0	27.5	26.0	26.5
31	---	---	---	20.5	18.0	19.0	---	---	---	28.0	26.5	27.0
MONTH	18.0	11.0	15.0	24.5	14.5	19.5	25.0	18.0	22.5	28.0	20.0	25.0

08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.8	6.4	7.0	8.2	7.3	7.7	8.6	7.9	8.3	5.9	5.5	5.8
2	7.5	6.5	6.9	7.9	7.2	7.5	8.3	7.7	7.9	5.7	5.2	5.5
3	7.4	5.9	6.6	7.5	6.1	7.0	8.3	7.2	7.8	5.2	4.7	4.9
4	6.8	3.2	5.4	7.2	6.3	6.7	9.1	8.0	8.5	4.7	4.5	4.6
5	5.2	4.2	4.9	7.8	5.7	6.9	9.6	8.5	9.0	4.5	4.4	4.4
6	7.5	4.9	6.0	8.3	7.9	8.2	10.0	8.7	9.1	4.3	3.8	4.2
7	5.7	4.0	4.9	8.3	8.0	8.2	8.6	6.6	7.2	3.7	3.1	3.4
8	6.4	5.3	5.8	9.7	7.7	8.1	8.7	7.1	8.2	---	---	---
9	8.3	5.4	5.8	8.7	7.8	8.3	9.0	8.3	8.7	---	---	---
10	7.0	5.7	6.2	9.3	8.7	9.0	9.1	8.7	8.9	---	---	---
11	7.6	7.1	7.4	9.3	9.1	9.2	8.7	8.2	8.5	---	---	---
12	7.9	7.4	7.6	9.1	8.5	8.8	8.2	7.8	8.0	---	---	---
13	7.7	7.4	7.5	8.8	8.4	8.7	8.2	7.4	7.7	---	---	---
14	7.7	7.1	7.4	8.6	8.2	8.4	7.8	7.2	7.5	---	---	---
15	7.5	6.8	7.1	8.3	7.9	8.1	7.4	6.8	7.1	---	---	---
16	7.3	6.6	6.9	8.0	7.5	7.8	7.4	5.7	6.7	---	---	---
17	8.5	5.9	6.6	7.7	7.3	7.5	5.6	4.5	5.1	---	---	---
18	6.3	4.5	5.5	7.7	7.2	7.4	6.6	4.8	5.8	---	---	---
19	7.3	6.4	7.0	7.6	7.0	7.2	7.2	5.9	6.7	---	---	---
20	7.5	7.0	7.3	7.5	6.8	7.1	7.4	6.8	7.1	---	---	---
21	9.3	6.4	7.1	7.2	6.6	6.8	6.9	6.1	6.5	---	---	---
22	7.7	6.9	7.3	7.5	5.6	6.6	7.4	6.1	6.7	---	---	---
23	7.9	7.7	7.8	6.3	4.5	5.0	8.7	7.1	8.2	---	---	---
24	8.1	7.7	7.9	7.2	5.2	6.5	9.1	8.5	8.8	---	---	---
25	8.2	7.9	8.1	7.2	6.7	7.0	8.7	8.5	8.7	---	---	---
26	8.2	8.1	8.1	6.9	6.4	6.7	8.8	8.1	8.3	---	---	---
27	8.3	7.9	8.1	6.4	5.9	6.1	8.1	7.5	7.7	---	---	---
28	8.3	7.8	8.0	6.5	5.6	6.1	7.7	6.9	7.2	10.6	10.0	10.3
29	8.2	7.8	8.0	7.4	5.9	6.8	7.0	6.4	6.8	10.1	9.6	9.8
30	8.1	7.6	7.8	8.4	7.1	7.8	6.4	5.8	6.2	9.6	8.8	9.1
31	8.2	7.3	7.7	---	---	---	6.1	5.7	6.0	10.4	8.7	8.9
MONTH	9.3	3.2	7.0	9.7	4.5	7.4	10.0	4.5	7.6	10.6	3.1	6.4

08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.5	10.0	10.2	6.5	5.7	6.0	7.0	5.8	6.4	5.1	5.0	5.1
2	10.0	9.7	9.8	5.7	5.5	5.6	6.5	6.0	6.3	5.0	4.3	4.7
3	9.7	9.5	9.6	6.1	5.6	5.7	6.7	5.7	6.2	4.9	4.5	4.7
4	10.2	9.2	9.6	6.4	6.1	6.3	7.7	5.0	6.2	4.5	3.8	4.3
5	9.1	8.4	8.7	6.4	5.4	6.0	7.7	5.6	6.9	4.7	3.9	4.2
6	9.4	8.5	8.7	---	---	---	7.2	6.5	6.7	5.0	3.5	4.6
7	9.3	9.0	9.1	---	---	---	6.6	6.1	6.4	4.8	4.4	4.5
8	9.3	9.1	9.2	---	---	---	6.2	5.8	6.0	6.9	3.9	5.1
9	9.3	9.0	9.2	---	---	---	6.6	6.0	6.4	5.9	4.9	5.3
10	9.2	8.9	9.0	---	---	---	6.6	6.1	6.4	5.3	3.7	4.9
11	8.9	8.7	8.8	---	---	---	8.1	4.8	6.0	4.8	4.6	4.7
12	8.9	8.5	8.7	7.6	6.8	7.4	5.7	5.3	5.5	4.6	4.4	4.5
13	9.2	8.1	8.5	7.7	6.6	7.2	5.5	5.2	5.3	4.5	4.3	4.4
14	8.7	8.3	8.5	7.7	6.9	7.3	7.6	5.3	6.2	4.3	3.9	4.2
15	8.3	8.1	8.2	9.1	6.9	7.6	6.6	5.9	6.1	4.4	4.0	4.2
16	8.1	7.8	7.9	8.1	5.6	7.2	6.3	5.7	6.0	4.8	3.8	4.0
17	8.0	7.8	7.9	8.1	7.8	8.0	7.5	5.8	6.0	4.3	3.7	4.0
18	7.9	7.3	7.6	8.0	7.6	7.8	7.4	5.9	6.5	4.2	3.7	4.0
19	7.9	7.0	7.4	7.6	7.0	7.4	7.0	6.1	6.6	4.5	3.8	4.2
20	8.1	7.2	7.6	7.1	6.6	6.9	6.9	6.3	6.6	4.5	4.1	4.3
21	9.7	7.4	8.4	6.6	6.0	6.4	6.7	6.3	6.5	5.4	4.3	4.6
22	7.3	6.9	7.1	6.3	5.6	6.0	6.8	6.3	6.5	4.8	3.9	4.4
23	7.3	7.0	7.2	6.5	5.6	6.1	6.6	6.0	6.2	4.8	4.5	4.7
24	7.3	6.7	7.1	6.9	6.1	6.5	6.0	5.6	5.8	5.0	4.7	4.9
25	7.0	6.5	6.8	6.8	6.2	6.4	5.7	5.3	5.5	4.7	4.3	4.6
26	7.0	6.0	6.4	6.8	5.7	6.2	5.8	5.6	5.6	5.3	4.7	5.0
27	7.0	6.6	6.8	6.2	5.3	5.7	5.6	5.2	5.3	5.2	4.9	5.0
28	7.4	6.4	6.6	7.1	5.3	5.7	5.4	5.3	5.4	5.2	4.8	5.0
29	---	---	---	5.9	1.8	3.4	5.5	5.0	5.2	4.7	4.2	4.6
30	---	---	---	4.7	2.8	3.9	5.3	5.1	5.3	5.3	4.4	4.8
31	---	---	---	6.4	4.6	5.5	---	---	---	5.4	4.9	5.1
MONTH	10.5	6.0	8.2	9.1	1.8	6.3	8.1	4.8	6.1	6.9	3.5	4.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	5.4	4.8	5.1	3.8	3.5	3.7	6.4	5.4	6.0	6.2	3.8	5.0
2	5.4	4.7	5.1	3.9	3.7	3.8	6.8	4.7	5.5	5.5	4.0	5.2
3	5.7	4.6	5.0	4.3	3.7	4.0	6.7	4.8	5.5	5.4	3.4	4.5
4	5.0	4.0	4.7	4.6	3.8	4.2	5.9	2.5	5.0	5.5	4.9	5.3
5	4.6	3.9	4.1	4.1	3.8	3.9	4.4	3.8	4.1	5.7	4.8	5.3
6	3.9	2.5	3.1	4.7	3.5	4.2	4.1	3.2	3.7	6.4	5.7	6.0
7	9.2	3.0	4.0	3.9	2.9	3.4	4.3	3.6	3.8	6.3	5.7	5.9
8	6.8	3.5	4.7	4.2	3.9	4.0	4.5	3.2	3.9	6.2	5.8	6.0
9	6.2	4.8	5.6	4.2	3.5	4.0	4.3	3.7	4.0	6.1	5.9	6.0
10	6.4	5.8	6.2	4.3	3.9	4.2	4.9	3.9	4.3	6.0	5.1	5.8
11	6.5	5.9	6.3	4.3	4.3	4.3	5.7	3.0	4.3	5.8	5.4	5.6
12	6.1	5.7	6.0	4.4	4.3	4.4	5.1	3.8	4.5	5.7	5.5	5.6
13	5.8	5.3	5.6	4.8	4.4	4.6	5.0	4.0	4.5	6.3	5.2	5.6
14	5.6	5.0	5.3	5.3	4.6	4.9	6.0	4.2	4.8	5.6	5.3	5.5
15	7.3	4.6	6.0	5.4	4.8	5.0	6.5	4.8	5.9	5.7	5.5	5.6
16	7.4	5.8	6.1	5.7	3.9	4.8	5.9	4.0	5.5	5.7	5.5	5.6
17	7.2	5.8	6.1	4.9	3.5	4.1	5.2	5.0	5.0	5.7	5.4	5.5
18	6.4	6.0	6.1	5.3	5.0	5.2	5.0	5.0	5.0	5.7	2.2	4.2
19	6.4	5.7	6.0	5.6	5.1	5.3	5.2	4.8	5.0	6.1	2.5	5.2
20	7.9	5.7	6.2	6.0	5.1	5.5	5.4	5.0	5.2	7.4	6.0	6.8
21	6.5	5.1	5.5	5.6	4.1	5.1	5.8	5.2	5.4	7.7	7.4	7.5
22	6.5	4.8	5.7	6.1	3.8	5.0	5.9	5.2	5.5	7.6	7.0	7.4
23	6.0	5.4	5.6	5.1	4.0	4.8	5.6	5.0	5.3	7.2	6.7	7.0
24	7.1	5.2	6.0	4.8	3.2	4.1	5.8	4.8	5.2	6.9	5.6	6.4
25	6.0	5.4	6.0	5.1	4.2	4.6	7.7	5.4	6.6	6.1	4.3	5.2
26	6.0	5.4	5.6	4.8	4.2	4.7	8.1	6.5	7.1	6.8	6.2	6.6
27	5.6	4.3	4.9	5.2	4.8	4.9	7.7	6.7	7.1	6.9	6.8	6.9
28	4.3	3.2	3.6	5.3	4.8	5.0	7.8	5.9	6.6	7.1	6.7	7.0
29	3.4	3.2	3.3	5.1	4.5	4.7	7.8	6.0	6.6	7.3	6.9	7.1
30	3.8	3.4	3.6	5.0	4.3	4.5	7.5	5.9	6.5	7.2	6.8	7.0
31	---	---	---	---	---	---	6.2	2.7	4.4	---	---	---
MONTH	9.2	2.5	5.2	6.1	2.9	4.5	8.1	2.5	5.2	7.7	2.2	5.9

08074500 WHITEOAK BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°46'30", long 95°23'49", Harris County, Hydrologic Unit 12040104, at downstream side of downstream bridge on Heights Boulevard in Houston, 560 ft downstream from Texas and New Orleans Railroad Co. bridge, 2.4 mi upstream from Little Whiteoak Bayou, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--86.3 mi². Prior to Oct. 1, 1976, 84.7 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1936 to current year (October 1965 to September 1966, monthly discharge only).

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 7.35 ft below National Geodetic Vertical Datum of 1929, adjustment of 1973; unadjusted for land-surface subsidence. Prior to June 17, 1936, nonrecording gage, and June 17, 1936, to Apr. 28, 1965, water-stage recorder at site 480 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Low flow is sustained by sewage effluent and industrial waste water. No diversions above station. Stage and rainfall telemetry at station.

AVERAGE DISCHARGE.--55 years, 91.3 ft³/s (66,150 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,300 ft³/s June 26, 1989 (gage height, 44.48 ft); no flow for many days during 1965 water year (result of construction dams).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1919, 51.5 ft Dec. 9, 1935, prior to channel rectification, present site and datum (discharge, 14,750 ft³/s), furnished by the engineer for Harris County. The flood of May 31, 1929, reached a stage of 47.0 + 0.5 ft, prior to channel rectification, present site and datum (discharge, 9,360 ft³/s), computed on basis of current-meter measurement at stage 1.0 ft below crest, furnished by city of Houston.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 10	0930	5,450	28.91	Apr. 5	1600	7,370	31.65
Jan. 15	0100	6,500	30.44	Apr. 14	1700	8,340	32.94
Jan. 18	1230	5,430	28.87	June 16	2100	*9,310	*34.16
Feb. 4	1400	5,700	29.28				

Minimum daily discharge, 24 ft³/s Sept. 28-29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	29	27	41	45	766	38	36	38	38	104	137
2	32	43	27	1200	45	151	39	40	37	56	34	89
3	35	53	28	871	43	84	39	39	99	242	31	91
4	92	157	28	125	1650	56	687	40	97	130	118	220
5	39	96	28	53	516	49	3050	40	36	36	120	211
6	35	39	115	406	177	47	949	38	34	108	137	804
7	78	33	148	141	114	43	317	39	203	46	128	327
8	39	447	31	52	70	52	152	724	358	69	33	102
9	115	545	31	753	62	40	103	193	203	43	31	178
10	54	78	27	1810	59	39	104	50	148	33	28	39
11	34	42	28	297	55	39	856	37	75	31	29	29
12	33	36	26	98	53	41	273	35	38	32	145	26
13	35	34	26	51	52	39	154	34	33	31	35	58
14	35	32	28	357	48	38	2880	35	238	30	151	29
15	36	28	28	1770	45	174	1030	143	876	31	474	26
16	36	31	57	231	46	381	350	334	1670	37	215	69
17	596	32	36	108	49	209	231	298	732	37	44	218
18	381	32	66	1820	51	60	300	74	125	34	49	205
19	70	34	35	499	329	47	120	99	109	32	84	170
20	36	32	31	186	59	42	160	81	181	31	34	58
21	389	28	55	104	683	41	55	40	295	188	29	28
22	152	176	32	76	167	40	44	50	637	78	35	25
23	42	122	32	68	61	39	55	40	384	151	44	25
24	33	34	33	178	48	39	41	36	1290	228	31	77
25	32	29	32	89	92	39	38	34	1010	57	28	212
26	31	29	267	61	66	40	37	32	448	35	29	39
27	30	37	407	52	44	39	38	32	147	32	27	27
28	29	59	52	56	391	53	38	50	126	31	27	24
29	29	30	37	54	---	245	39	130	65	81	26	24
30	29	27	35	60	---	48	36	55	43	38	28	25
31	28	---	36	50	---	38	---	38	---	89	336	---
TOTAL	2667	2424	1869	11717	5120	3058	12253	2946	9775	2135	2664	3592
MEAN	86.0	80.8	60.3	378	183	98.6	408	95.0	326	68.9	85.9	120
MAX	596	545	407	1820	1650	766	3050	724	1670	242	474	804
MIN	28	27	26	41	43	38	36	32	33	30	26	24
AC-FT	5290	4810	3710	23240	10160	6070	24300	5840	19390	4230	5280	7120

CAL YR 1990 TOTAL 37909 MEAN 104 MAX 1590 MIN 26 AC-FT 75190
WTR YR 1991 TOTAL 60220 MEAN 165 MAX 3050 MIN 24 AC-FT 119400

08074500 WHITEOAK BAYOU AT HOUSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1968 to current year. Pesticide analyses: February 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
FEB												
25...	1219	53	775	8.3	16.0	22	14	13.6	136	2.5	2.3	880
APR												
30...	1020	35	896	8.4	22.5	10	1.3	12.6	144	4.1	4.2	1000
MAY												
29...	1127	93	542	8.0	29.0	45	5.0	9.2	119	5.4	5.1	20000
JUL												
22...	1250	42	603	8.4	29.5	22	12	10.6	138	3.7	3.5	9300
AUG												
20...	1354	35	776	--	33.5	12	10	16.5	230	1.9	1.5	250

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
FEB												
25...	80	180	0	57	10	89	3	5.1	230	28	84	0.50
APR												
30...	150	--	--	--	--	--	--	--	--	--	--	--
MAY												
29...	5600	120	0	38	6.1	61	2	5.7	150	17	56	0.30
JUL												
22...	580	130	0	41	6.6	72	3	6.9	180	21	65	0.20
AUG												
20...	80	--	--	--	--	--	--	--	--	--	--	--

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
FEB											
25...	18	428	15	1	14	5.88	0.020	5.90	0.120	1.3	1.4
APR											
30...	--	--	4	4	0	6.61	0.090	6.70	0.090	1.3	1.4
MAY											
29...	15	288	26	11	15	4.17	0.130	4.30	0.310	1.2	1.5
JUL											
22...	16	337	5	4	1	2.21	0.090	2.30	0.260	1.1	1.4
AUG											
20...	--	--	<1	<1	--	5.46	0.040	5.50	0.070	0.93	1.0

DATE	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
FEB											
25...	2.30	1.40	5	6	190	<0.5	1.0	<5	<3	<10	20
APR											
30...	2.90	2.70	5.6	--	--	--	--	--	--	--	--
MAY											
29...	2.60	2.30	10	6	150	<0.5	<1.0	<5	<3	<10	23
JUL											
22...	1.70	1.40	9.7	9	180	<0.5	<1.0	<5	<3	<10	12
AUG											
20...	2.30	2.20	5.5	--	--	--	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB											
25...	<10	18	29	2.0	<10	<10	1	<1.0	390	<6	26
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
29...	<10	12	10	<0.1	<10	<10	<1	<1.0	250	<6	17
JUL											
22...	<10	15	22	<0.1	<10	<10	<1	1.0	310	<6	16
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

08074500 WHITEOAK BAYOU AT HOUSTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
FEB											
25...	<0.10	0.10	<0.20	<0.5	<0.2	<0.1	<0.10	<0.5	<0.50	<0.10	<0.1
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
29...	--	--	--	<0.5	--	--	--	<0.5	<0.50	--	--
JUL											
22...	--	--	--	<0.5	--	--	--	<0.5	<0.50	--	--
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX

LOCATION.--Lat 29°45'54", long 95°21'32", Harris County, Hydrologic Unit 12040104, on left bank at mouth of Whiteoak Bayou at upstream side of Main Street viaduct in Houston and 3.2 mi downstream from station 08074000.

DRAINAGE AREA.--469 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1962 to current year. (Gage removed for bridge repairs Apr. 5, 1982, to Dec. 2, 1983).

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1.47 ft below National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers), 1973 adjustment; unadjusted for land-surface subsidence.

REMARKS.--Gage height records good except those for estimated gage-heights which are fair. Most days are influenced by tidal fluctuations. Gage heights during rises reflect releases from Barker and Addicks Reservoirs (stations 08072500 and 08073000, respectively) or runoff from urban areas. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 28.4 ft June 26, 1989; minimum recorded, -3.5 ft Jan. 13, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum gage height since at least 1835, 38.5 ft Dec. 9, 1935, present site and datum, unadjusted for land-surface subsidence.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 14.7 ft Apr. 5 at 1700 hours; minimum (estimated), 0.1 ft Dec. 24.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	4.3	2.4	5.0	3.1	5.2	3.5	4.0	2.0	4.3	2.8	7.2	3.5
2	5.1	3.0	5.6	3.4	5.0	2.7	9.2	3.0	4.5	3.3	4.5	3.0
3	5.3	4.2	5.5	3.6	4.8	1.4	8.9	2.6	4.4	3.4	3.4	1.3
4	4.7	3.1	5.6	2.5	3.4	1.0	4.2	2.9	12.5	2.8	3.8	1.0
5	4.5	2.6	3.5	1.2	4.3	2.6	4.4	3.7	7.1	3.7	3.9	2.4
6	4.8	3.0	4.8	3.0	4.3	2.8	5.0	3.2	3.8	2.4	3.7	2.5
7	4.8	3.2	4.9	2.8	4.3	1.7	3.6	1.9	3.9	2.3	3.7	1.8
8	4.7	3.1	7.8	4.2	3.6	2.6	3.9	2.4	4.0	2.4	3.7	1.6
9	5.2	.9	6.7	1.3	3.9	2.7	8.7	2.9	3.9	2.3	3.9	2.1
10	2.3	1.2	3.1	1.3	3.8	2.5	13.4	5.3	3.8	2.3	4.1	2.1
11	4.1	2.3	3.8	2.7	3.7	2.2	5.0	2.5	3.7	2.1	4.4	2.9
12	4.3	2.1	4.1	2.9	4.2	2.5	3.7	1.5	3.8	2.3	4.3	2.3
13	3.8	2.2	3.8	2.0	3.9	2.2	4.1	2.4	4.0	2.3	3.3	1.5
14	4.1	2.7	4.2	2.5	4.0	2.2	13.0	3.2	3.5	1.6	3.7	1.6
15	4.2	2.8	4.7	3.1	4.0	2.2	14.2	3.6	3.4	1.7	5.1	3.3
16	4.4	3.2	4.4	2.5	4.2	2.6	3.8	2.0	4.9	2.7	5.8	3.9
17	7.1	3.4	4.4	2.5	4.5	2.7	4.5	3.2	5.0	3.5	5.4	3.3
18	4.6	1.7	4.8	3.0	4.7	2.0	12.3	4.5	4.5	3.2	4.0	2.4
19	4.8	3.0	4.9	3.2	4.1	2.6	6.5	3.0	4.3	2.6	4.5	2.4
20	5.2	3.7	4.8	3.1	4.6	3.0	3.9	2.1	3.8	1.5	4.9	2.9
21	5.0	3.0	5.0	3.4	4.7	3.1	3.2	1.6	5.6	3.0	4.7	2.8
22	3.8	2.3	4.9	3.2	3.7	1.4	4.0	2.1	3.5	1.4	4.5	3.0
23	4.2	2.6	4.8	2.8	2.8	.3	4.8	2.6	3.4	.9	3.9	2.0
24	4.3	2.6	4.4	3.4	3.0	e.1	4.7	2.9	3.8	1.8	3.9	1.9
25	3.7	2.1	4.7	3.4	4.0	2.7	4.6	2.5	3.6	1.7	4.6	2.5
26	4.1	2.8	4.7	4.0	6.4	3.2	4.5	2.6	3.4	1.4	4.6	3.0
27	4.3	2.7	5.4	4.2	5.7	3.0	4.7	2.8	3.9	2.0	4.9	3.2
28	3.9	2.5	4.5	2.8	4.2	2.1	4.6	2.5	7.4	2.9	4.4	3.2
29	4.1	3.0	4.1	2.1	4.4	2.5	4.6	2.8	---	---	3.9	1.6
30	4.3	3.3	5.0	2.9	4.2	1.4	4.4	1.5	---	---	3.8	1.4
31	4.2	2.9	---	---	3.4	1.1	3.7	1.5	---	---	3.8	2.2
MONTH	7.1	.9	7.8	1.2	6.4	.1	14.2	1.5	12.5	.9	7.2	1.0

e Estimated

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	3.6	1.8	5.4	3.5	5.5	4.0	4.1	2.4	4.0	2.9	4.7	2.8
2	4.7	2.3	5.7	3.8	5.2	3.8	4.1	2.6	3.9	2.7	4.9	2.9
3	4.6	3.0	5.6	3.7	4.9	3.3	4.4	2.8	4.1	2.2	4.9	3.1
4	7.7	3.0	5.3	3.7	4.5	3.0	3.8	2.8	3.9	2.0	5.8	3.3
5	14.7	3.6	4.9	3.2	4.1	2.9	4.2	2.9	4.1	2.2	5.9	3.4
6	8.9	4.3	4.4	2.1	3.8	2.8	4.4	2.7	4.2	2.2	7.2	4.0
7	4.8	3.1	5.7	3.7	7.9	2.9	5.1	2.6	4.3	2.2	5.4	3.8
8	4.7	3.1	8.7	3.9	6.0	4.0	4.7	2.5	4.1	2.2	4.8	3.3
9	4.6	3.2	5.2	3.7	6.1	3.9	4.3	2.2	4.3	2.1	4.9	3.3
10	4.8	2.9	5.1	3.8	5.8	3.6	4.4	2.1	3.8	2.2	5.2	3.9
11	8.3	4.4	4.9	3.8	5.1	3.2	4.5	2.3	3.9	2.0	5.1	3.7
12	5.2	4.1	4.9	3.6	5.2	2.9	4.2	2.2	3.8	2.2	5.0	3.5
13	5.6	4.1	5.2	3.2	5.1	2.7	4.0	2.1	3.7	2.4	5.5	3.5
14	14.2	3.8	5.6	3.2	5.5	2.9	3.7	2.1	4.1	2.9	4.9	3.4
15	8.6	4.4	6.4	3.0	8.5	3.5	3.6	2.1	4.7	2.9	5.0	3.2
16	5.8	3.7	5.7	4.1	13.1	3.0	3.9	2.2	4.2	2.7	4.7	3.0
17	7.9	3.4	5.3	3.6	10.1	3.5	3.4	2.5	4.2	2.6	4.5	3.0
18	7.4	4.3	5.7	3.1	4.7	3.0	3.7	2.3	4.0	2.1	4.6	3.0
19	4.9	3.0	5.4	3.2	4.3	2.7	3.8	2.3	3.6	2.0	4.8	3.0
20	4.1	2.2	5.5	4.2	5.2	2.9	4.1	2.4	3.6	1.9	4.4	2.7
21	5.1	2.9	5.0	3.6	4.1	3.2	4.3	2.4	3.8	2.0	4.7	3.3
22	5.0	3.3	5.3	4.1	4.7	3.2	4.4	2.4	4.1	2.2	4.8	3.3
23	4.4	2.8	5.7	4.5	5.6	3.0	4.4	2.8	4.4	2.4	4.7	3.4
24	5.0	3.7	5.6	4.2	7.5	3.9	4.1	2.2	4.0	2.7	4.7	3.5
25	5.0	3.9	5.6	3.7	5.9	3.2	4.0	2.2	3.8	2.4	4.1	2.2
26	5.2	3.6	5.0	3.2	4.5	2.5	3.9	2.2	4.1	2.4	4.2	2.4
27	5.8	4.2	4.8	3.0	4.4	2.3	4.0	2.3	4.5	3.0	4.3	2.7
28	5.6	4.1	5.2	3.1	5.6	2.9	3.8	2.3	4.2	2.7	4.5	2.8
29	4.8	3.8	5.8	3.7	4.9	2.7	3.5	2.0	4.0	2.7	5.0	3.0
30	5.5	3.4	5.6	3.3	4.7	3.1	3.4	2.1	3.9	2.5	4.9	3.0
31	---	---	5.6	4.0	---	---	3.7	2.7	4.4	2.9	---	---
MONTH	14.7	1.8	8.7	2.1	13.1	2.3	5.1	2.0	4.7	1.9	7.2	2.2

WTR YEAR 1991 MAX 14.7 MIN 0.1

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1986 to current year.
WATER TEMPERATURE: April 1986 to current year.
DISSOLVED OXYGEN: April 1986 to current year.

INSTRUMENTATION.--Since April 1986, a three-parameter water-quality monitor continuously records specific conductance, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrumentation. Due to tidal effects, backwater from Whiteoak Bayou, probe location, channel morphology, the water-quality data collected at this location may not be representative of the entire flow through the cross-section.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, >3,000 microsiemens on several days in January, 1989; minimum, 72 microsiemens June 26, 1989.
WATER TEMPERATURE: Maximum, 32.5°C Aug. 8, 1988; minimum, 5.0°C Dec. 23, 24, 1989.
DISSOLVED OXYGEN: Maximum, 13.1 mg/L June 24, 1989; minimum, 0.0 mg/L July 25, Sept. 7, 9, 1989.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,960 microsiemens Oct. 1; minimum, 74 microsiemens June 16.
WATER TEMPERATURE: Maximum, 31.5°C July 15, 31; minimum, 8.5°C Dec. 24.
DISSOLVED OXYGEN: Maximim, 11.6 mg/L Dec. 26; minimum, 0.1 mg/L Sept. 17.

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	2960	1120	1730	1940	834	1210	1490	941	1130	676	523	591
2	2810	1490	2080	2600	807	1210	1420	837	1050	680	103	307
3	2480	1370	1970	1380	663	817	1290	787	993	203	120	165
4	2320	374	1160	873	587	715	1170	778	921	199	179	189
5	708	327	488	685	379	549	2240	856	1270	195	180	190
6	689	302	433	626	267	406	1260	719	1090	215	149	194
7	661	473	566	628	372	451	693	346	526	260	188	214
8	711	401	527	660	177	477	602	426	496	217	195	201
9	695	410	562	273	130	197	639	434	512	229	146	206
10	612	401	547	218	191	202	661	469	556	148	84	117
11	692	462	546	250	210	236	810	615	681	243	127	198
12	831	510	589	387	236	273	1170	664	806	231	138	160
13	832	569	672	563	310	408	2220	762	1130	159	142	151
14	816	619	673	627	418	505	1560	851	1090	166	94	150
15	831	621	687	697	488	570	1870	925	1170	155	95	117
16	914	658	765	762	563	623	1460	736	1100	221	162	190
17	1300	191	680	1200	616	722	1000	793	896	184	147	158
18	381	202	312	1610	757	964	1320	576	770	164	97	130
19	475	273	323	1830	838	1100	779	670	711	203	107	154
20	552	280	325	1180	864	1010	919	662	737	856	201	273
21	518	164	330	1310	832	1020	1020	607	822	498	275	315
22	327	169	244	1290	368	994	860	655	708	392	185	243
23	619	255	330	505	393	438	886	636	733	238	146	165
24	624	357	412	606	370	455	1090	738	795	344	147	213
25	687	426	512	1380	540	777	1150	827	902	564	129	238
26	779	522	600	1390	862	1070	1360	295	910	156	116	127
27	873	560	649	1700	851	1040	358	229	280	127	113	120
28	826	607	667	961	741	845	389	295	325	185	123	164
29	903	648	715	1120	723	847	464	311	359	153	114	124
30	1040	699	829	1260	799	983	566	411	477	396	133	208
31	1210	763	932	---	---	---	645	492	552	675	233	387
MONTH	2960	164	705	2600	130	704	2240	229	790	856	84	205

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	552	111	169	248	138	203	749	494	623	133	122	125
2	119	108	114	232	193	205	790	558	670	163	127	142
3	125	114	119	226	200	220	788	661	728	197	156	181
4	182	88	128	248	207	235	802	111	465	190	154	174
5	190	102	149	716	245	350	278	111	167	300	157	191
6	278	182	212	732	336	491	177	119	157	311	164	213
7	242	135	149	823	448	601	213	177	195	169	133	142
8	144	133	137	777	623	714	336	214	248	177	104	145
9	144	135	139	854	672	739	293	158	194	245	107	170
10	144	130	137	772	392	481	185	159	171	352	149	201
11	144	128	134	727	397	471	212	133	165	163	136	142
12	153	132	140	755	436	590	311	158	242	171	140	150
13	324	147	197	869	574	744	389	316	346	171	143	151
14	267	183	217	881	747	786	463	114	273	182	144	157
15	193	125	139	906	477	761	204	124	156	210	169	179
16	166	137	146	670	289	529	209	141	173	247	167	193
17	180	168	172	329	217	274	211	144	181	227	177	207
18	286	184	229	399	253	300	178	120	146	303	225	252
19	325	236	272	429	295	336	291	183	217	386	257	322
20	445	248	361	660	376	455	289	158	188	449	394	421
21	360	169	229	795	421	556	155	132	138	559	399	461
22	344	217	291	743	533	615	184	138	156	492	226	301
23	361	331	346	801	603	664	166	148	156	244	193	210
24	458	364	395	840	651	739	141	116	123	206	190	199
25	486	404	433	1080	694	767	182	114	147	195	177	180
26	497	415	442	985	730	783	174	129	142	204	190	197
27	669	430	504	869	757	798	139	125	129	201	193	199
28	771	366	554	934	745	827	141	125	133	219	198	211
29	---	---	---	651	349	502	269	133	173	217	194	203
30	---	---	---	560	449	502	329	121	146	278	221	254
31	---	---	---	647	427	521	---	---	---	253	228	241
MONTH	771	88	238	1080	138	541	802	111	238	559	104	210

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	382	256	316	347	275	301	585	470	524	1230	659	934
2	450	385	417	343	219	272	670	555	619	1390	312	858
3	473	440	456	353	222	286	725	642	659	805	263	402
4	454	300	352	303	212	277	806	546	696	516	303	419
5	327	295	313	440	248	322	700	488	621	587	358	482
6	383	291	337	524	243	404	738	571	651	607	430	511
7	519	368	453	451	256	314	820	340	543	560	470	519
8	375	323	344	432	269	307	810	596	677	621	563	595
9	418	368	391	384	297	331	1900	684	812	658	623	642
10	407	368	383	434	349	401	1990	695	1050	664	198	384
11	445	347	412	516	437	475	2560	1270	1670	218	190	202
12	412	327	355	572	504	534	1780	166	1080	220	189	207
13	437	373	414	631	505	571	1110	402	561	209	170	201
14	432	371	387	700	539	631	619	180	429	282	208	245
15	457	415	442	749	579	651	644	244	422	319	259	279
16	470	74	407	729	190	618	449	221	350	331	278	299
17	211	113	171	555	215	350	563	288	398	348	288	322
18	257	210	234	373	230	309	736	568	662	349	166	249
19	253	153	202	587	377	452	1050	711	857	311	233	266
20	364	100	248	777	498	574	1210	1030	1110	247	185	212
21	337	144	202	889	428	598	1330	1200	1270	262	192	229
22	280	159	215	629	407	489	1330	1300	1320	392	243	283
23	259	116	194	588	394	477	1300	1210	1260	520	330	421
24	302	114	183	489	278	337	1200	1130	1160	630	427	501
25	200	168	184	393	296	340	1130	1110	1120	1270	333	558
26	239	171	211	416	336	374	1250	1100	1130	706	245	361
27	212	175	188	520	388	447	2540	1100	1450	2250	253	537
28	196	156	174	662	467	528	2620	1200	1600	2260	787	1150
29	290	190	234	722	316	547	1810	1230	1460	2630	1210	1490
30	327	266	291	667	158	521	2590	1390	1860	2940	1600	2270
31	---	---	---	538	286	407	2890	642	1480	---	---	---
MONTH	519	74	304	889	158	434	2890	166	952	2940	166	534

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	27.5	26.5	26.5	21.0	20.5	20.5	17.5	16.5	17.0	11.5	11.0	11.5
2	27.5	26.5	27.0	22.0	20.5	21.0	18.0	16.5	17.0	12.0	10.0	11.0
3	28.0	27.0	27.5	23.0	21.5	22.0	19.0	18.0	18.5	12.5	12.0	12.0
4	28.0	27.0	27.5	23.0	21.5	22.5	18.0	15.5	16.5	12.0	11.0	11.5
5	28.0	27.5	27.5	21.5	18.5	19.5	16.0	14.5	15.0	12.0	11.0	11.5
6	28.5	27.5	28.0	18.0	16.5	17.0	14.5	14.0	14.5	15.5	12.0	14.0
7	28.5	28.0	28.5	17.5	16.5	17.0	16.5	14.5	16.0	15.5	14.5	15.0
8	29.0	28.0	28.5	17.5	16.0	17.0	15.5	14.0	14.5	14.0	12.5	13.0
9	28.5	23.5	27.0	16.0	14.5	15.5	14.5	13.0	13.5	12.5	12.5	12.5
10	23.0	21.0	22.0	14.5	13.5	14.0	14.0	13.0	13.5	13.5	12.5	13.0
11	21.5	20.0	20.5	14.0	13.0	13.5	15.5	13.5	14.5	14.0	13.5	13.5
12	20.5	19.5	20.0	15.5	13.5	14.0	16.5	15.0	15.5	13.0	11.0	12.0
13	21.0	20.0	20.5	17.0	15.0	16.0	18.5	17.0	17.5	12.0	10.5	11.5
14	21.5	20.5	21.0	18.0	16.0	17.0	19.5	18.5	19.0	12.5	11.5	12.5
15	22.5	21.5	22.0	18.5	16.5	17.5	20.5	19.5	19.5	14.0	11.5	12.5
16	24.0	22.5	23.5	19.5	18.0	18.5	20.5	19.5	20.0	13.5	13.0	13.5
17	24.5	23.5	24.0	20.5	19.0	19.5	21.5	20.0	21.0	13.5	12.5	13.0
18	24.0	23.0	23.5	20.5	19.5	20.0	21.5	20.5	21.0	13.5	12.0	12.5
19	23.0	21.0	21.5	21.5	20.0	20.5	20.5	15.5	19.0	13.0	12.0	12.0
20	21.5	20.5	20.5	22.0	21.0	21.0	19.0	18.0	18.5	13.5	12.0	12.5
21	21.5	20.5	21.0	22.0	21.5	21.5	21.0	19.0	19.5	13.0	12.0	12.5
22	20.5	19.5	20.0	23.5	21.5	22.0	20.0	13.5	17.5	12.5	11.0	11.5
23	19.5	18.5	19.0	23.0	22.0	22.5	13.5	10.0	12.0	12.0	11.0	11.5
24	19.5	18.5	18.5	22.0	20.0	21.0	10.0	8.5	9.0	13.0	12.0	12.5
25	19.0	18.0	18.5	20.5	19.5	20.0	10.0	9.0	9.5	13.5	11.5	12.5
26	19.0	18.0	18.5	22.0	20.5	21.0	11.5	9.5	10.0	12.5	11.5	12.0
27	19.5	18.0	18.5	22.5	21.5	22.0	11.5	10.5	11.0	12.0	12.0	12.0
28	20.0	18.0	19.0	23.0	21.5	22.0	12.5	10.5	11.5	14.0	12.0	13.0
29	20.5	19.0	19.5	22.0	18.5	20.0	15.5	12.5	13.5	14.0	12.5	13.0
30	20.5	20.0	20.5	18.5	17.0	18.0	17.0	15.0	16.0	14.5	13.5	14.0
31	21.0	20.0	20.5	---	---	---	14.5	11.5	13.0	14.5	12.5	13.5
MONTH	29.0	18.0	22.5	23.5	13.0	19.0	21.5	8.5	15.5	15.5	10.0	12.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	14.0	11.5	12.5	19.5	17.0	18.5	18.0	17.5	17.5	24.5	24.0	24.5
2	12.5	11.5	12.0	21.0	19.0	20.0	21.0	20.0	20.5	24.5	24.0	24.0
3	13.0	12.0	12.5	20.0	18.5	19.0	21.5	20.0	20.5	24.5	24.0	24.0
4	17.0	13.0	15.0	19.0	17.0	18.0	22.0	20.0	21.0	25.5	24.0	24.5
5	17.0	16.5	16.5	19.5	17.5	18.0	21.0	18.5	20.0	26.0	24.5	25.0
6	17.5	16.0	16.5	22.0	18.5	20.0	19.5	19.0	19.5	24.5	23.0	24.0
7	16.0	12.0	14.5	22.0	20.5	21.5	22.0	19.5	20.5	24.0	24.0	24.0
8	15.5	15.0	15.0	21.0	20.0	20.5	22.5	19.0	21.5	24.0	21.5	23.0
9	15.5	15.0	15.0	20.5	19.0	19.5	23.0	19.0	21.5	22.5	21.5	22.0
10	16.0	15.0	15.5	19.0	18.0	18.5	22.0	21.5	22.0	24.5	22.5	23.5
11	16.5	15.5	16.0	18.5	18.5	18.5	22.0	20.5	21.5	25.0	24.0	24.5
12	17.0	16.5	16.5	19.5	18.0	19.0	23.5	21.5	22.5	25.5	24.5	25.0
13	19.0	16.5	17.5	20.0	18.0	19.0	24.0	23.5	24.0	25.5	24.5	25.0
14	18.5	17.0	18.0	20.0	19.0	19.0	24.0	20.0	22.5	25.5	25.0	25.5
15	17.5	14.5	16.0	---	---	---	22.0	20.5	21.0	25.5	24.5	25.0
16	16.0	15.0	15.5	---	---	---	23.0	21.5	22.0	26.5	25.0	25.5
17	15.5	14.5	15.0	---	---	---	23.0	22.0	22.5	25.5	25.0	25.0
18	17.5	15.5	16.5	18.0	17.5	17.5	23.0	22.0	22.5	26.0	24.5	25.0
19	18.5	17.5	18.0	18.0	17.0	17.5	24.0	22.5	23.0	25.0	24.5	24.5
20	17.5	16.5	17.0	19.5	18.0	19.0	24.5	22.5	23.0	25.5	24.5	24.5
21	16.5	13.5	14.5	21.0	19.0	20.0	22.5	21.5	22.5	26.0	25.0	25.5
22	14.5	14.0	14.0	22.0	20.5	21.0	22.5	22.5	22.5	26.0	24.5	24.5
23	15.0	13.5	14.0	21.0	19.0	20.5	23.0	22.0	22.5	25.0	24.5	24.5
24	16.0	14.0	14.5	20.5	19.5	20.0	23.0	22.5	22.5	25.5	25.0	25.0
25	16.5	15.0	15.5	21.0	19.5	20.5	23.0	22.5	23.0	26.5	25.5	26.0
26	16.0	14.5	15.0	23.0	21.0	21.5	24.0	22.5	23.5	26.5	25.5	26.0
27	15.5	14.5	15.0	24.0	22.5	23.5	24.5	24.0	24.0	26.5	26.0	26.0
28	17.0	14.5	15.5	23.5	22.0	23.0	24.5	24.0	24.0	27.0	26.0	26.5
29	---	---	---	22.0	20.0	21.0	25.0	23.5	24.0	27.0	26.5	27.0
30	---	---	---	21.5	19.5	20.0	24.5	23.0	24.0	27.0	26.5	26.5
31	---	---	---	20.5	20.0	20.5	---	---	---	27.5	26.5	27.0
MONTH	19.0	11.5	15.5	24.0	17.0	20.0	25.0	17.5	22.0	27.5	21.5	25.0

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	6.7	3.7	5.6	6.8	4.9	5.8	9.6	8.0	8.9
2	4.8	2.9	4.1	6.6	3.3	5.2	7.0	6.1	6.5	10.8	9.1	10.1
3	4.9	1.9	3.7	6.0	2.8	4.6	7.5	5.2	6.4	9.9	8.7	9.1
4	6.0	2.1	4.6	6.8	2.5	4.5	8.7	5.9	7.0	8.7	8.4	8.6
5	4.8	2.1	3.1	7.3	5.6	6.7	7.8	4.3	6.7	8.7	8.4	8.6
6	4.8	1.7	2.9	7.7	6.9	7.2	8.9	6.5	7.4	8.3	7.4	8.0
7	4.8	2.1	3.4	7.8	6.3	7.3	8.9	6.1	7.7	7.6	4.5	6.2
8	4.2	2.2	3.1	9.3	5.8	7.0	9.3	5.8	6.6	11.3	5.9	9.1
9	5.8	2.6	4.4	8.8	8.0	8.6	9.3	7.6	7.9	11.5	11.1	11.4
10	6.6	4.9	6.0	9.7	8.9	9.4	8.5	7.3	7.9	---	---	---
11	7.7	5.8	6.4	9.8	9.6	9.7	9.0	6.8	8.0	---	---	---
12	8.1	6.6	7.1	9.6	8.8	9.3	7.6	6.2	7.1	11.5	9.6	11.0
13	8.8	6.3	7.4	8.7	7.5	8.4	6.9	4.8	6.3	9.4	7.5	8.3
14	8.1	6.1	6.8	8.6	7.0	8.0	7.2	5.1	6.2	7.4	7.1	7.3
15	8.1	5.6	6.4	8.0	5.6	7.3	5.8	4.4	5.4	7.4	7.0	7.2
16	6.7	4.9	5.7	7.3	5.9	6.8	5.7	4.5	5.2	9.8	7.5	8.8
17	8.1	4.1	5.9	6.9	4.4	6.3	5.5	4.4	5.1	9.3	8.8	9.2
18	5.8	4.1	5.1	6.2	4.7	5.6	7.9	3.2	4.4	10.4	8.7	9.7
19	7.0	5.5	6.5	6.2	4.3	5.3	6.0	4.1	5.2	10.2	9.2	9.6
20	7.0	6.3	6.8	6.0	3.9	5.1	6.2	5.2	5.8	9.3	9.0	9.1
21	8.4	6.1	6.9	5.7	3.7	4.9	6.3	4.6	5.6	9.2	8.8	9.0
22	7.7	6.5	7.3	7.2	4.6	5.3	9.1	4.7	5.8	10.1	9.0	9.9
23	7.9	7.6	7.8	5.3	2.6	3.9	9.4	6.4	7.8	10.2	10.0	10.1
24	7.9	7.2	7.5	5.7	1.7	3.1	11.1	9.3	10.2	10.1	8.5	9.4
25	8.0	7.0	7.6	5.3	1.8	4.5	11.2	9.8	10.5	10.1	8.2	9.4
26	7.8	6.9	7.4	5.3	1.6	4.0	11.6	9.6	10.5	10.0	9.7	9.8
27	8.2	6.9	7.3	5.1	3.8	4.6	11.0	10.1	10.4	9.7	9.5	9.6
28	7.6	6.5	7.3	5.2	4.2	4.7	10.5	9.1	9.8	9.8	9.1	9.4
29	7.4	5.7	6.8	5.7	4.5	5.1	9.0	8.0	8.7	9.8	9.4	9.5
30	6.9	5.6	6.3	6.5	4.8	5.3	8.3	7.3	7.8	9.3	8.4	8.9
31	7.0	5.4	6.2	---	---	---	9.1	7.7	8.1	9.2	7.9	8.3
MONTH	8.8	1.7	5.9	9.8	1.6	6.1	11.6	3.2	7.2	11.5	4.5	9.1

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.1	8.9	9.8	8.1	7.4	7.6	5.7	3.4	4.2	5.5	5.3	5.4
2	9.8	9.5	9.6	7.5	7.3	7.4	6.0	2.9	4.6	5.3	4.7	5.0
3	9.6	9.3	9.4	7.7	7.4	7.5	6.3	2.3	4.3	5.1	4.6	4.9
4	9.7	8.8	9.2	8.0	7.7	7.9	7.8	3.0	5.9	4.6	3.8	4.5
5	8.8	8.1	8.3	8.1	7.3	7.8	8.0	5.6	7.0	4.6	3.4	4.4
6	8.7	8.2	8.3	7.8	6.4	7.0	7.4	6.4	6.8	5.2	4.0	4.8
7	9.0	8.7	8.8	7.2	5.8	6.4	6.7	6.2	6.6	4.9	4.6	4.8
8	9.0	8.8	8.9	7.5	5.6	6.2	6.2	5.9	6.1	6.6	4.2	5.1
9	9.0	8.7	8.9	7.2	5.7	6.2	6.9	6.0	6.7	6.1	4.3	5.2
10	8.9	8.7	8.8	8.4	7.2	7.9	6.9	6.5	6.9	5.9	3.8	5.1
11	8.7	8.5	8.6	8.2	7.0	7.7	7.0	5.6	6.2	5.5	5.1	5.2
12	8.6	8.4	8.5	7.8	6.6	7.1	6.1	5.2	5.6	5.2	5.0	5.1
13	8.4	7.8	8.0	8.9	6.2	6.9	5.4	4.8	5.0	5.1	5.0	5.0
14	8.6	7.9	8.1	7.8	5.9	6.6	7.2	4.6	5.9	5.0	4.6	4.8
15	8.4	8.1	8.1	8.2	6.0	6.7	6.6	6.0	6.2	5.0	4.5	4.7
16	8.1	7.9	7.9	7.7	4.9	6.5	6.4	6.0	6.2	5.0	4.0	4.4
17	8.0	7.8	7.9	7.7	7.2	7.5	7.1	6.0	6.3	4.4	3.9	4.1
18	8.0	7.1	7.4	7.8	7.2	7.6	7.3	5.4	6.1	5.0	3.8	4.2
19	7.7	6.7	7.2	7.5	6.7	7.0	5.9	5.2	5.5	5.4	2.7	3.4
20	8.5	6.8	7.1	7.0	6.0	6.3	6.5	5.2	5.9	4.9	3.1	3.7
21	9.6	7.9	9.1	6.2	4.9	5.6	6.5	6.4	6.4	4.0	2.9	3.3
22	9.1	8.6	8.8	5.7	3.5	4.8	6.6	6.2	6.4	4.7	3.6	4.1
23	9.0	8.7	8.9	5.7	3.0	4.5	6.6	6.5	6.5	4.9	4.6	4.8
24	8.7	8.4	8.6	5.7	4.0	5.0	6.5	6.2	6.3	5.0	4.8	4.9
25	8.4	7.7	8.1	6.9	3.7	5.1	6.2	5.8	6.0	4.8	4.4	4.6
26	8.2	7.2	7.7	6.2	4.3	5.0	6.2	6.1	6.1	5.2	4.7	5.0
27	8.5	6.7	7.6	7.4	3.2	5.0	6.2	5.8	5.9	5.1	4.8	4.9
28	8.3	7.4	7.8	6.9	1.2	4.3	6.0	5.9	6.0	5.0	4.7	4.8
29	---	---	---	5.5	.3	3.1	5.9	4.9	5.5	4.7	3.7	4.3
30	---	---	---	5.1	.8	2.3	5.6	5.4	5.5	4.6	3.7	4.1
31	---	---	---	6.0	1.5	3.2	---	---	---	4.9	4.4	4.6
MONTH	10.1	6.7	8.4	8.9	.3	6.1	8.0	2.3	6.0	6.6	2.7	4.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4.8	4.3	4.6	5.7	5.4	5.5	6.5	1.6	3.4	6.8	1.7	3.6
2	4.8	4.3	4.5	6.5	4.6	5.3	6.7	4.2	5.0	5.6	4.7	5.1
3	4.8	3.9	4.3	5.1	4.3	4.8	6.1	4.0	5.2	4.9	3.3	4.2
4	4.4	3.4	4.0	5.7	4.2	4.9	7.1	4.4	5.4	5.6	5.0	5.3
5	4.3	3.3	3.7	5.0	3.3	4.2	5.8	3.1	4.5	5.7	4.8	5.2
6	3.5	1.7	2.5	5.5	3.7	4.3	7.2	4.2	5.0	6.1	5.3	5.8
7	8.2	1.2	2.9	4.7	2.7	3.3	5.1	3.2	4.2	6.2	5.6	5.8
8	6.4	2.6	4.2	5.5	4.6	4.8	5.1	3.1	4.0	5.9	5.5	5.7
9	5.2	2.9	4.3	5.1	4.5	4.9	6.1	4.3	5.1	5.9	5.5	5.7
10	5.3	4.9	5.1	4.8	4.2	4.5	5.4	3.2	4.2	5.8	2.6	4.1
11	5.1	4.4	4.8	4.9	4.0	4.5	4.9	2.0	3.3	2.9	2.0	2.5
12	4.5	4.1	4.2	5.3	3.9	4.5	6.7	3.8	4.9	2.0	1.5	1.7
13	4.3	1.0	3.2	5.3	3.9	4.6	5.2	3.7	4.6	1.5	1.1	1.3
14	3.2	1.2	1.9	7.5	4.1	5.1	5.9	4.1	4.8	1.2	1.2	1.2
15	5.9	2.8	4.6	6.9	3.3	5.0	5.4	3.0	4.4	1.2	.6	.9
16	7.0	1.9	4.1	6.0	3.0	4.9	5.4	3.1	4.6	.7	.3	.5
17	6.1	4.3	5.1	5.3	3.2	4.0	5.8	5.0	5.6	2.5	.1	.8
18	5.1	4.6	4.9	5.3	4.7	5.0	6.1	5.4	5.7	1.1	.8	.9
19	5.4	4.7	5.1	5.4	3.7	4.7	5.9	4.7	5.5	2.0	1.2	1.9
20	7.0	4.1	4.8	5.6	1.8	3.9	5.7	4.7	5.2	---	---	---
21	6.0	4.3	4.9	4.5	1.1	2.9	5.9	3.6	4.8	---	---	---
22	6.1	4.4	5.3	4.8	1.8	3.0	7.0	4.1	5.2	---	---	---
23	7.8	4.6	5.5	4.7	2.0	3.7	4.9	3.6	4.3	---	---	---
24	7.5	5.0	5.9	4.9	2.8	3.7	5.1	2.1	3.7	5.1	4.0	4.7
25	6.1	5.6	5.9	4.7	4.1	4.5	5.9	4.4	5.1	5.3	3.7	4.7
26	6.1	5.4	5.7	4.5	3.5	4.2	6.6	3.2	4.9	6.2	5.2	5.8
27	6.3	6.0	6.1	4.6	3.7	4.2	6.4	4.7	5.5	6.9	6.0	6.2
28	6.1	5.6	5.8	4.9	3.8	4.5	8.0	5.0	5.7	6.1	5.6	5.8
29	5.7	5.1	5.3	5.5	3.5	4.8	7.1	5.0	6.0	6.8	5.3	5.9
30	6.0	5.4	5.5	6.5	2.8	4.3	6.7	5.1	5.8	6.3	5.3	5.6
31	---	---	---	5.9	1.6	3.4	6.8	2.9	4.6	---	---	---
MONTH	8.2	1.0	4.6	7.5	1.1	4.4	8.0	1.6	4.8	6.9	.1	3.9

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX

LOCATION.--Lat 29°44'57", long 95°17'27", Harris County, Hydrologic Unit 12040104, on left bank at Wharf No. 5 at end of private road, 1.0 mi downstream from station 08074700, 1.8 mi upstream from Brays Bayou and 4.9 mi east of downtown Houston.

DRAINAGE AREA.--Not determined.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1987 to current year.

GAGE.--Data logger, float operated encoder and pressure transducer. Datum of gage is National Geodetic Vertical Datum of 1929, 1978 adjustment, unadjusted for land-surface subsidence.

REMARKS.--Records good. Only very large storms or hurricane surge produces elevations above normal tidal fluctuations. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 9.1 ft June 26, 1989; minimum, minus 3.1 ft Mar. 6, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 5.0 ft Jan. 14 at 2400 hours; minimum, minus 2.1 ft Dec. 24.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	2.2	.3	1.5	2.8	1.0	1.9	3.1	1.4	2.4	1.7	-.1	1.0
2	2.9	.9	2.0	3.4	1.2	2.3	2.9	.6	1.9	2.4	.6	1.6
3	3.1	2.1	2.6	3.4	1.5	2.6	2.7	-.7	1.0	2.4	.0	1.3
4	2.4	.9	1.8	3.5	.5	2.1	1.2	-1.1	.0	2.0	.7	1.4
5	2.4	.6	1.5	1.4	-1.1	.1	2.1	.5	1.4	2.2	1.5	1.9
6	2.6	.9	1.9	2.6	.9	1.7	2.2	.6	1.6	2.4	.9	1.6
7	2.7	1.1	2.1	2.8	.7	1.9	2.1	-.5	.6	1.2	-.4	.5
8	2.6	1.0	2.0	3.1	1.9	2.5	1.4	.4	.9	1.7	.2	1.0
9	2.9	-1.3	1.4	3.4	-1.0	.9	1.7	.6	1.1	3.2	.7	1.7
10	.1	-1.2	-.4	1.0	-1.0	.3	1.6	.4	1.1	3.2	1.7	2.4
11	2.0	-.2	1.2	1.6	.3	1.2	1.6	.1	1.0	2.1	.2	1.2
12	2.2	.0	1.3	1.9	.7	1.3	2.1	.4	1.4	1.5	-.9	.3
13	1.6	.0	1.2	1.7	-.1	.8	1.7	.0	1.1	1.9	.1	1.1
14	2.0	.6	1.5	2.1	.3	1.3	1.9	.1	1.1	5.0	.9	2.1
15	2.1	.7	1.5	2.5	1.0	1.8	1.9	.0	1.1	4.9	.8	2.3
16	2.4	1.1	1.7	2.3	.4	1.5	2.0	.5	1.4	1.5	-.4	.5
17	2.8	1.3	2.1	2.3	.3	1.4	2.4	.6	1.5	2.2	.7	1.4
18	2.4	-.5	.9	2.7	.9	1.9	2.5	-.2	1.1	4.6	2.1	2.9
19	2.6	.9	1.6	2.8	1.2	2.1	2.1	.4	1.3	2.8	.7	1.8
20	3.0	1.6	2.4	2.7	1.0	2.0	2.5	.9	1.8	1.8	.0	.9
21	3.0	.5	1.9	2.8	1.4	2.2	2.6	1.0	1.8	1.1	-.5	.2
22	1.5	.1	1.0	2.7	1.1	2.0	1.7	-.7	.2	1.9	-.1	.9
23	2.1	.6	1.5	2.6	.7	1.6	.7	-1.9	-.5	2.7	.4	1.4
24	2.2	.5	1.6	2.3	1.4	1.9	.9	-2.1	-1.1	2.7	.7	1.5
25	1.6	.1	1.0	2.5	1.4	1.9	1.9	.6	1.2	2.4	.2	1.3
26	2.0	.8	1.4	2.6	1.9	2.3	3.2	1.1	2.1	2.2	.2	1.4
27	2.1	.6	1.5	3.2	2.1	2.7	3.1	.8	1.8	2.5	.4	1.7
28	1.8	.5	1.1	2.4	.7	1.6	2.1	.0	1.1	2.4	.4	1.7
29	2.0	.7	1.5	1.9	.0	1.0	2.3	.3	1.5	2.4	.5	1.7
30	2.2	1.2	1.8	2.9	.8	1.9	2.1	-.7	.7	2.2	-.6	.8
31	2.1	.7	1.5	---	---	---	1.2	-1.0	.0	1.5	-.6	.4
MONTH	3.1	-1.3	1.5	3.5	-1.1	1.7	3.2	-2.1	1.1	5.0	-.9	1.4

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX--Continued

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.0	.4	1.3	3.2	1.0	2.2	1.5	-.3	.8	3.2	1.1	2.2
2	2.2	.9	1.6	2.3	.9	1.5	2.6	.3	1.7	3.5	1.4	2.4
3	2.2	.9	1.4	1.4	-.9	-.1	2.5	1.0	1.8	3.4	1.7	2.7
4	3.2	.7	1.9	1.7	-1.2	.4	3.7	.9	2.1	3.2	1.5	2.4
5	2.2	.9	1.6	1.8	.3	1.2	4.5	.9	2.3	2.7	1.1	1.9
6	1.7	.3	1.1	1.7	.5	1.0	2.7	1.4	2.1	2.2	.0	1.2
7	1.5	-.3	.7	1.6	-.3	.8	2.7	.9	1.9	3.3	1.3	2.2
8	1.6	-.3	.7	1.7	-.4	.8	2.6	1.0	1.9	3.0	1.7	2.3
9	1.5	-.3	.7	1.8	.0	1.0	2.4	1.0	1.7	2.5	1.6	2.0
10	1.4	-.3	.7	2.0	.0	1.0	2.5	.8	1.5	2.9	1.6	2.4
11	1.3	-.5	.6	2.3	.8	1.7	3.3	2.0	2.6	2.7	1.5	2.2
12	1.6	-.1	.8	2.2	.3	1.3	3.0	2.0	2.6	2.7	1.2	2.0
13	1.9	.2	1.2	1.4	-.5	.5	3.6	2.0	2.9	2.9	.9	2.0
14	1.5	-.5	.5	1.5	-.5	.6	3.5	1.7	2.5	3.3	.8	2.2
15	1.0	-1.0	.1	2.9	1.3	2.0	2.8	1.2	2.2	3.7	.8	2.4
16	2.5	.2	1.3	3.5	1.8	2.8	3.5	1.4	2.5	3.5	1.8	2.7
17	2.6	1.1	2.0	3.3	1.2	2.3	3.2	1.2	2.4	3.1	1.2	2.4
18	2.4	1.1	1.8	1.9	.3	1.1	3.0	1.0	2.2	3.3	1.1	2.3
19	2.1	.4	1.1	2.4	.4	1.7	2.7	.9	1.9	3.3	1.1	2.4
20	1.7	-.6	.6	2.8	.9	2.0	2.0	.0	1.1	3.4	2.1	2.7
21	2.2	.2	1.3	2.6	.8	1.8	2.9	.5	1.8	2.9	1.5	2.3
22	1.3	-.8	-.1	2.4	1.0	1.8	2.9	1.1	2.1	3.2	2.0	2.6
23	1.2	-1.3	-.2	1.8	-.1	1.0	2.3	.6	1.5	3.7	2.4	3.2
24	1.7	-.4	.8	1.8	-.2	1.0	2.7	1.4	1.9	3.5	1.9	2.9
25	1.5	-.4	.6	2.4	.4	1.5	2.8	1.5	2.2	3.4	1.4	2.5
26	1.3	-.8	.3	2.5	1.0	1.9	3.0	1.5	2.4	2.9	1.0	2.1
27	1.7	-.1	1.0	2.8	1.2	1.9	3.6	1.9	2.9	2.7	.9	2.0
28	2.9	.8	1.7	2.3	1.1	1.7	3.4	1.9	2.9	3.1	.9	2.2
29	---	---	---	1.6	-.5	.4	2.6	1.7	2.1	3.5	1.4	2.3
30	---	---	---	1.7	-.7	.8	3.2	1.1	2.4	3.5	1.2	2.6
31	---	---	---	1.6	.2	.9	---	---	---	3.6	1.9	2.8
MONTH	3.2	-1.3	1.0	3.5	-1.2	1.3	4.5	-.3	2.1	3.7	.0	2.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	3.4	1.8	2.7	2.0	.3	1.3	1.8	.8	1.3	2.5	.7	1.8
2	3.1	1.6	2.3	2.0	.4	1.3	1.8	.6	1.4	2.6	.7	1.8
3	2.8	1.1	1.9	1.9	.7	1.3	2.0	.3	1.4	2.8	.8	2.0
4	2.2	.7	1.6	1.6	.6	1.3	1.8	.0	1.2	3.5	1.1	2.4
5	1.9	.8	1.2	2.0	.8	1.4	2.0	.1	1.3	3.5	1.2	2.6
6	1.6	.7	1.2	2.2	.4	1.6	2.0	.1	1.3	3.6	1.6	2.6
7	3.0	.8	2.1	2.7	.5	1.6	2.1	.1	1.4	3.0	1.5	2.2
8	3.8	1.9	3.2	2.6	.4	1.6	2.1	.1	1.3	2.5	1.1	1.9
9	3.7	1.8	3.0	2.1	.1	1.4	2.1	.0	1.3	2.7	1.2	1.8
10	3.7	1.4	2.6	2.3	.0	1.5	1.6	.1	1.1	3.0	1.7	2.3
11	3.0	1.0	2.2	2.3	.2	1.4	1.7	.0	.9	3.0	1.5	2.2
12	3.0	.7	2.1	2.1	.1	1.3	1.5	.1	.9	2.9	1.4	2.2
13	2.9	.6	2.0	1.9	.1	1.1	1.5	.3	.9	2.7	1.3	2.2
14	3.0	.9	2.2	1.6	.0	.9	1.9	.7	1.4	2.9	1.4	2.2
15	3.0	1.0	2.1	1.5	.0	.9	2.4	.6	1.6	2.9	1.1	2.2
16	3.0	.7	1.9	1.7	.1	.8	2.0	.5	1.4	2.6	.9	2.0
17	2.1	.9	1.5	1.3	.4	.8	2.0	.4	1.4	2.3	.7	1.7
18	2.1	.9	1.4	1.5	.2	1.0	1.9	-.2	1.2	2.5	.8	1.9
19	2.2	.6	1.4	1.7	.2	1.2	1.5	-.2	.9	2.6	.8	1.6
20	1.8	.4	1.3	1.9	.2	1.3	1.5	-.2	.9	2.3	.5	1.7
21	1.9	.3	1.4	2.1	.4	1.5	1.7	-.1	1.1	2.6	1.1	2.1
22	2.0	.4	1.4	2.3	.3	1.5	1.9	.1	1.2	2.7	1.3	2.1
23	2.1	.2	1.3	2.2	.5	1.5	2.1	.3	1.3	2.6	1.4	1.9
24	2.0	.1	1.2	2.0	-.1	1.2	1.9	.5	1.3	2.5	1.4	1.9
25	2.0	-.2	1.1	2.0	.2	1.2	1.7	.3	1.2	2.2	.0	.8
26	2.1	-.1	1.2	1.9	.1	1.2	1.9	.3	1.2	2.0	.4	1.2
27	2.2	.0	1.3	1.9	.2	1.1	2.2	.9	1.5	2.2	.6	1.6
28	3.0	.5	1.7	1.6	.2	1.0	2.1	.6	1.3	2.4	.7	1.7
29	2.7	.5	1.9	1.3	-.1	.7	1.9	.6	1.3	2.8	.9	2.0
30	2.5	.9	1.8	1.2	.0	.7	1.8	.4	1.3	2.8	1.0	2.1
31	---	---	---	1.6	.5	1.1	2.2	.8	1.6	---	---	---
MONTH	3.8	-.2	1.8	2.7	-.1	1.2	2.4	-.2	1.3	3.6	.0	2.0

WTR YR 1991 MAX 5.0 MIN -2.1 MEAN 1.6

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1986 to current year.
WATER TEMPERATURE: April 1986 to current year.
DISSOLVED OXYGEN: April 1986 to current year.

INSTRUMENTATION.--Since April 1986, a three-parameter water-quality monitor continuously records specific conductance, water temperature, and dissolved oxygen at this station.

REMARKS.--Water-quality monitor data were collected using a submersible pump from a fixed-point intake located approximately 6.5 ft. below National Geodetic Vertical Datum of 1929. The fixed-point intake was raised to 5.5 ft. below same datum on Jan. 22, 1987. On February 3, 1988, a raft was anchored in same general vicinity and probe package was placed insitu at a constant elevation of 1.0 ft. below the water-surface. Dissolved oxygen data are not corrected for salinity. When specific conductance exceeded upper recording limit of 20,000 microsiemens, no data was published. Due to tidal effects, location of probe units, and channel morphology, the water-quality data collected at this location may not be representative of the entire flow through the cross-section.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, >20,000 microsiemens Oct. 12-14, 1987, Dec. 13, 1988, Jan. 23, 1989; minimum, 60 microsiemens June 26, 1989.
WATER TEMPERATURE: Maximum, 36.5°C Aug. 21, 1990; minimum, 9.0°C Jan. 7-10, 1988, Jan. 29, 1989.
DISSOLVED OXYGEN: Maximum, 12.9 mg/L Jan. 24, 1989; minimum, 0.0 mg/L on several days during 1987 and 1988 water years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 15,500 microsiemens Dec. 24; minimum, 117 microsiemens Jan. 19.
WATER TEMPERATURE: Maximum, 33.5°C Aug. 29; minimum, 11.0°C Dec. 27.
DISSOLVED OXYGEN: Maximum, 10.5 mg/L Feb. 2, 24; minimum, 0.7 mg/L on several days during June and July.

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11200	6650	9200	10300	6090	8800	12000	6950	9270	9370	3850	6920
2	12000	6070	8950	11200	8090	9720	9340	5710	7600	10500	1310	5360
3	9460	7860	8660	10500	6650	7790	11100	7150	9020	1510	317	563
4	10600	5280	7830	9470	5550	7160	14100	7750	10700	752	317	544
5	7330	4170	6150	10700	6630	7760	13800	8850	11100	1490	586	781
6	8050	3640	5510	9950	4980	6480	13400	6300	10200	1580	410	774
7	5740	2860	4120	7290	3770	5840	10100	3960	7290	5770	869	1740
8	6170	3510	4660	10000	1230	7650	9250	4610	5850	2930	987	1930
9	8290	6060	7300	1490	532	803	8610	3390	5720	3020	659	1800
10	10000	5430	6880	3310	669	1600	11400	6450	8740	1620	176	580
11	13800	8840	11100	2940	899	1410	10100	4560	6720	410	147	227
12	14900	4580	7630	4650	1440	2840	8800	6170	6980	562	357	438
13	7510	4030	5830	6710	2230	4560	10100	6960	8310	703	283	443
14	9590	4160	7040	6750	3150	5070	11300	5940	8270	611	283	364
15	10100	5590	7770	7510	3490	5510	10000	5400	7600	728	132	247
16	10900	5660	7800	8630	3350	5610	7170	4890	6190	215	132	162
17	11000	1410	7790	10100	4310	7110	6620	3830	5480	244	205	224
18	2390	1110	1610	9420	5310	6890	9300	5150	7060	230	122	187
19	2400	1140	1730	9610	4670	6680	11300	6180	8240	186	117	141
20	4740	1970	3280	8910	6410	8080	8830	5720	7480	332	161	209
21	5250	1020	2870	9200	5430	7440	9940	4920	7420	303	246	278
22	2430	811	1550	7640	3610	5830	8610	5970	7150	426	283	348
23	5340	2090	3240	8040	3230	5050	15400	6640	8980	494	385	420
24	7530	3730	5670	5310	2740	3900	15500	5830	8030	447	329	386
25	8090	3880	6380	5760	2560	3810	10600	6840	8150	474	342	398
26	11100	5550	7130	6500	4730	5520	11700	7870	9480	488	273	392
27	9430	5490	7410	7270	5030	6190	7290	664	2240	483	267	356
28	8280	5500	6870	9410	4630	6350	4950	996	1750	449	303	385
29	12500	5730	8030	11500	5920	7990	6190	1540	2750	386	244	332
30	11800	6250	8790	13000	8470	10400	12100	2080	4390	3020	391	1250
31	10000	5990	7600	---	---	---	10300	3870	5880	6790	1920	2840
MONTH	14900	811	6330	13000	532	5990	15500	664	7230	10500	117	1000

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4040	864	2080	1110	288	404	5380	2190	4020	406	239	302
2	1370	459	813	1250	288	440	4780	2850	3900	312	223	259
3	982	269	637	1600	625	1070	3230	2310	2830	390	251	289
4	889	347	637	1650	532	981	2800	2220	2660	427	291	331
5	332	147	197	2140	1070	1440	---	---	---	396	327	350
6	440	205	292	2020	1070	1510	---	---	---	469	323	368
7	576	337	451	2070	772	1370	327	303	305	469	380	421
8	625	282	431	2080	1190	1590	366	259	285	390	233	284
9	460	266	352	3170	1260	1820	440	313	354	269	217	233
10	736	223	324	1950	889	1440	391	288	335	280	234	253
11	330	212	265	2110	1200	1650	313	225	289	269	200	236
12	303	218	260	3430	1630	2070	249	210	224	230	200	217
13	314	239	282	4820	1690	2610	376	264	300	274	205	220
14	591	269	333	5420	2140	3560	391	313	336	254	200	225
15	474	269	370	5440	3350	4660	176	137	154	274	205	224
16	464	220	372	3260	806	1900	303	190	225	347	234	289
17	342	205	251	5800	537	1020	357	244	270	278	244	263
18	342	244	270	1510	596	1110	264	190	228	303	239	259
19	547	288	418	2960	1280	2030	352	200	222	371	269	322
20	1620	474	930	3270	1540	2410	435	269	332	396	322	358
21	1270	200	660	3520	2260	2850	371	288	315	454	337	405
22	552	234	288	4190	1850	2840	313	225	276	518	420	465
23	1360	327	645	4200	2090	3350	308	249	269	498	440	466
24	1290	615	851	5340	2080	3900	303	195	255	470	347	424
25	1860	645	1110	5560	2670	4030	254	195	213	405	317	344
26	2780	806	1490	4790	3530	4130	674	210	264	342	244	289
27	2610	1010	1460	4740	3210	3860	323	275	305	---	---	---
28	2370	1040	1710	5560	3000	3780	323	269	290	---	---	---
29	---	---	---	4710	2240	3160	485	285	368	---	---	---
30	---	---	---	3300	1410	2530	421	227	363	---	---	---
31	---	---	---	5040	2360	3250	---	---	---	244	234	238
MONTH	4040	147	649	5800	288	2350	5380	137	721	518	200	309

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	1340	547	848	8420	4960	6770	7350	4160	5640
2	255	220	222	1650	708	1190	6800	3870	5280	8100	3970	5270
3	---	---	---	5590	996	2670	8140	4030	6080	6300	3980	4800
4	---	---	---	2760	1020	1580	9930	4030	5950	5380	2640	3790
5	---	---	---	5050	2120	3030	13200	4950	8360	4870	1520	2930
6	366	352	359	6430	2580	4610	12900	6600	9640	3330	352	1310
7	420	340	368	3970	2020	2920	15300	4840	8530	611	269	389
8	360	322	342	4790	2260	3340	10700	4560	7430	786	361	480
9	430	308	342	6190	2200	4410	12600	5500	9600	1730	708	1110
10	586	337	463	7320	3000	4550	11400	6030	8460	1740	444	935
11	1560	381	845	5760	3350	4560	11200	5760	7380	1790	791	1250
12	1520	513	912	6030	2930	4490	11400	6190	8420	2150	547	1160
13	1800	581	1120	7440	3380	4440	5900	4060	5080	1800	440	850
14	2560	752	1500	6310	3380	4920	7920	4810	5990	1710	405	657
15	1270	396	728	7110	2620	4370	7140	2560	4320	2110	733	1160
16	410	230	282	7220	3690	5100	4070	908	2270	4300	987	1960
17	220	137	173	6480	2210	3260	2930	1170	2140	3240	1030	2060
18	317	200	254	5160	1850	3230	4670	1050	2170	3390	1050	1650
19	327	274	302	5500	2620	3780	3890	1250	2650	2810	1070	1600
20	371	274	304	6750	2510	4250	5680	1750	3240	1670	645	930
21	562	308	330	6320	2610	4300	10000	2710	5300	2080	664	1020
22	332	264	300	7280	2850	4710	8540	2930	5570	4390	811	1650
23	313	264	281	6500	2860	4310	9400	2940	6720	7980	1320	3890
24	283	166	227	6890	2630	4770	8410	3930	5530	7180	3010	5010
25	225	181	203	6750	2540	4190	12400	3230	6770	8410	2430	4440
26	269	205	237	6830	2490	4010	9020	4280	6990	8370	1520	3920
27	361	239	302	9170	2310	5170	11200	5560	7930	6940	1640	3790
28	571	288	371	10800	4210	7100	12300	6800	8410	4570	1530	3010
29	1560	366	755	10400	5190	6740	11700	6490	8910	11300	1720	3450
30	1040	498	665	9120	3810	6400	11200	6460	8820	9180	4260	5940
31	---	---	---	8910	3240	5480	11800	4950	7340	---	---	---
MONTH	2560	137	469	10800	547	4150	15300	908	6390	11300	269	2540

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	30.5	28.0	29.5	24.5	23.0	23.5	21.0	20.0	20.5	15.5	13.0	14.0
2	29.5	28.0	29.0	25.0	23.0	23.5	22.0	20.5	21.5	14.0	11.5	12.5
3	30.0	28.5	29.5	25.5	23.5	24.5	22.0	19.0	20.5	12.5	12.0	12.5
4	30.0	29.0	29.5	25.0	22.5	24.0	20.0	18.5	19.5	13.0	12.5	12.5
5	30.5	28.0	29.0	22.5	21.0	22.0	21.5	18.5	19.5	13.5	12.5	13.0
6	30.0	28.5	29.5	22.5	21.0	22.0	21.0	19.0	20.0	16.5	13.0	14.5
7	30.0	29.0	29.5	22.5	20.0	21.5	19.5	17.5	18.5	16.0	14.5	15.5
8	30.5	29.0	30.0	21.5	17.5	20.5	18.5	17.5	18.0	15.5	14.5	15.0
9	29.5	27.0	28.5	17.5	16.0	16.5	19.0	17.5	18.5	15.0	13.0	14.0
10	27.5	25.5	26.5	18.0	15.5	16.5	19.5	18.0	18.5	14.0	13.0	13.5
11	28.5	25.5	27.0	17.5	16.0	17.0	19.0	18.0	19.0	14.5	13.5	14.0
12	27.5	24.5	26.0	19.0	17.0	18.0	20.0	18.5	19.5	15.0	13.5	14.0
13	27.5	24.0	26.0	20.0	17.5	18.5	20.0	19.0	19.5	13.5	12.5	13.0
14	27.5	24.5	26.0	20.5	18.5	19.5	21.0	19.5	20.0	14.0	13.0	13.5
15	27.5	25.5	26.5	20.5	19.5	20.0	21.0	19.5	20.5	14.5	13.5	14.0
16	27.5	26.0	26.5	21.5	19.5	20.5	22.5	20.0	21.5	15.0	14.0	14.5
17	27.5	24.5	26.0	22.0	20.0	21.0	22.5	21.0	22.0	14.5	14.0	14.5
18	24.5	23.5	24.0	22.0	20.5	21.5	23.0	19.5	21.0	14.0	11.5	13.0
19	25.0	22.5	23.5	23.0	20.5	22.0	20.5	19.0	19.5	12.5	11.5	12.0
20	25.0	22.5	24.0	23.0	21.0	22.0	21.5	19.0	20.5	13.5	12.0	12.5
21	26.0	21.5	23.5	23.5	21.5	22.5	22.5	19.5	21.0	13.5	12.5	13.0
22	22.0	21.0	21.5	23.5	22.0	23.0	19.5	17.0	18.0	13.5	12.5	13.0
23	23.5	20.5	22.0	23.5	21.5	22.5	18.5	14.5	17.0	14.0	13.0	13.0
24	23.5	21.0	22.5	22.5	21.5	22.0	17.5	15.0	16.5	14.0	12.5	13.0
25	23.0	22.0	22.5	23.5	22.0	22.5	17.5	14.0	16.0	15.5	13.5	14.0
26	23.5	21.0	22.5	24.0	22.5	23.0	16.5	13.5	15.5	15.0	13.0	14.0
27	24.0	22.0	23.0	24.5	22.5	23.5	13.5	11.0	12.0	13.5	12.5	13.0
28	23.5	22.0	23.0	24.0	21.5	22.5	15.0	12.0	13.0	15.5	13.5	14.0
29	24.0	22.5	23.0	21.5	20.0	20.5	17.0	14.0	15.0	14.5	14.0	14.0
30	24.0	22.5	23.0	21.0	19.5	20.5	18.0	13.5	15.5	14.0	12.5	13.5
31	24.0	22.5	23.0	---	---	---	14.0	13.0	13.5	15.0	12.5	13.5
MONTH	30.5	20.5	25.5	25.5	15.5	21.0	23.0	11.0	18.5	16.5	11.5	13.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	14.5	12.5	13.5	18.5	17.0	18.0	23.0	21.0	21.5	25.5	24.0	24.5
2	14.5	12.0	12.5	20.0	18.5	19.0	23.0	21.5	22.0	25.0	24.5	24.5
3	14.0	12.0	13.0	19.0	18.0	18.5	23.5	22.0	23.0	25.5	24.5	25.0
4	16.0	13.5	14.5	20.5	18.0	19.0	23.0	21.0	22.0	26.5	25.0	25.5
5	17.0	16.0	16.5	19.5	18.5	19.0	21.0	19.0	20.0	27.0	25.5	25.5
6	18.0	16.5	17.0	21.5	19.0	20.0	20.0	19.0	19.5	26.0	25.0	25.5
7	17.5	16.5	17.0	21.0	19.5	20.5	23.0	20.0	21.0	25.5	24.5	25.0
8	16.5	15.5	16.0	21.5	19.5	20.0	23.0	21.5	22.0	24.5	22.5	24.0
9	16.0	15.5	16.0	20.5	19.0	20.0	25.0	22.5	23.5	24.0	22.0	22.5
10	16.5	15.5	16.0	21.0	19.0	20.0	24.0	23.0	23.0	24.5	23.0	23.5
11	17.5	16.0	16.5	21.0	19.5	20.0	23.0	22.0	22.5	26.5	24.0	25.0
12	18.0	17.0	17.5	21.5	20.0	20.5	23.0	22.0	22.5	27.0	25.0	25.5
13	18.0	17.5	17.5	21.0	19.5	20.0	24.0	23.0	23.5	27.5	25.5	26.0
14	18.5	17.5	18.0	20.5	18.5	19.5	24.0	20.5	23.0	26.5	25.5	26.0
15	19.0	17.0	17.5	20.0	18.0	19.0	22.0	20.5	21.5	28.0	25.5	26.0
16	17.0	16.0	16.5	19.0	17.0	18.0	23.0	22.0	22.5	27.0	25.0	26.0
17	16.5	15.5	16.0	18.0	16.0	17.0	24.0	23.0	23.5	26.5	25.5	26.0
18	17.5	15.5	16.5	18.5	16.0	17.5	24.5	23.0	23.5	26.0	25.5	25.5
19	18.5	16.5	17.5	21.0	18.0	19.0	25.0	23.5	24.0	26.0	25.5	26.0
20	18.5	17.5	17.5	21.0	18.5	19.5	26.5	24.0	24.5	26.5	26.0	26.0
21	18.0	14.5	16.0	21.5	20.0	20.5	25.0	24.0	24.5	27.5	26.0	26.5
22	15.5	14.5	14.5	22.5	20.5	21.5	24.5	23.5	24.0	27.0	26.5	26.5
23	16.0	14.5	15.5	22.0	20.0	21.0	24.5	23.5	24.0	27.5	26.5	27.0
24	17.5	15.5	16.5	21.5	20.0	21.0	24.0	23.5	23.5	28.0	26.5	27.0
25	17.0	16.0	16.5	23.0	20.5	22.0	25.0	23.5	24.0	27.0	26.5	27.0
26	16.5	15.5	16.0	24.5	21.5	23.0	25.0	24.0	24.5	30.5	27.0	28.0
27	17.5	16.0	17.0	23.5	22.0	23.0	26.0	24.5	25.0	30.0	27.5	28.5
28	18.0	16.0	17.0	24.0	22.0	23.0	26.0	25.0	25.5	30.0	27.5	28.5
29	---	---	---	23.0	22.0	22.5	26.0	24.5	25.0	29.0	28.0	28.0
30	---	---	---	23.0	20.5	21.5	25.5	24.0	24.5	28.5	28.0	28.0
31	---	---	---	23.0	20.5	22.0	---	---	---	29.0	28.0	28.5
MONTH	19.0	12.0	16.0	24.5	16.0	20.0	26.5	19.0	23.0	30.5	22.0	26.0

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29.5	28.0	28.5	32.0	29.5	30.0	32.5	30.5	31.0	31.0	30.0	30.0
2	30.0	28.5	29.0	31.5	29.5	30.0	32.5	30.5	31.0	31.5	29.5	30.0
3	30.0	28.5	29.0	31.5	29.5	30.0	32.5	30.5	31.5	31.0	29.5	29.5
4	30.5	28.5	29.0	31.0	29.0	29.5	32.5	31.0	31.5	30.0	28.5	29.0
5	30.5	28.5	29.0	30.5	29.0	29.5	32.5	31.0	31.5	29.0	28.0	28.5
6	30.5	29.0	29.5	30.5	29.0	30.0	33.0	31.0	31.5	27.5	26.5	27.0
7	31.0	29.0	29.5	31.5	29.5	30.0	32.0	30.5	31.5	27.5	26.5	27.0
8	28.5	27.0	28.0	31.5	29.5	30.0	31.5	30.5	31.0	29.5	27.0	28.0
9	27.5	27.0	27.5	31.5	29.5	30.5	32.0	30.0	31.5	29.5	27.5	28.0
10	27.5	26.5	27.0	31.5	29.5	30.5	32.5	31.0	31.5	29.5	27.5	28.5
11	27.5	26.5	27.0	32.0	29.5	30.5	33.0	31.0	31.5	29.5	28.0	28.5
12	29.5	27.0	28.0	32.5	29.5	31.0	33.0	31.0	31.5	29.0	28.5	28.5
13	30.0	27.5	28.5	32.5	30.5	31.0	32.0	30.5	31.0	29.0	28.0	28.5
14	30.0	28.5	29.0	32.0	30.5	31.0	31.0	29.5	30.5	30.0	28.0	28.5
15	29.0	27.0	28.0	32.0	30.5	31.5	30.5	28.5	29.5	30.5	28.5	29.5
16	28.0	26.5	27.5	31.0	30.5	31.0	29.0	28.0	28.5	30.5	29.0	29.5
17	27.0	25.5	26.5	32.0	30.0	31.0	31.0	28.0	29.0	31.5	29.0	30.0
18	29.5	27.0	28.0	31.0	29.5	30.0	30.0	28.5	29.0	30.5	29.0	29.5
19	30.0	28.0	29.0	31.5	29.0	30.5	32.0	29.0	30.0	29.0	27.5	28.0
20	30.0	28.5	29.0	32.0	29.5	30.5	32.0	29.0	30.5	27.5	26.0	27.0
21	30.5	28.5	29.5	32.0	30.0	30.5	32.5	30.0	31.0	27.5	25.0	26.0
22	29.5	28.0	28.5	31.5	29.5	30.5	32.5	30.5	31.0	27.5	25.0	26.5
23	30.0	28.0	29.0	32.0	30.0	30.5	32.5	30.0	31.0	28.0	26.0	27.0
24	28.5	27.0	27.5	31.5	29.5	30.5	32.5	30.0	31.0	28.0	27.0	27.5
25	27.5	26.5	27.0	31.0	29.0	30.0	32.5	30.0	31.0	27.5	26.0	26.5
26	29.5	27.5	28.0	31.5	29.0	30.0	32.0	30.0	31.0	27.0	25.0	26.0
27	31.5	28.0	29.5	32.0	29.5	30.5	31.5	30.0	30.5	27.0	25.0	26.0
28	30.0	29.0	29.5	32.0	30.0	30.5	31.5	30.0	30.5	26.5	24.5	25.5
29	30.0	29.0	29.0	32.0	30.5	31.0	33.5	30.0	31.0	27.0	24.0	26.0
30	31.0	29.0	29.5	32.5	30.5	31.0	32.0	30.5	31.0	28.0	25.5	26.5
31	---	---	---	32.0	30.5	31.0	31.5	30.0	30.5	---	---	---
MONTH	31.5	25.5	28.5	32.5	29.0	30.5	33.5	28.0	31.0	31.5	24.0	28.0

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	4.9	3.4	4.2	5.3	3.7	4.5	8.6	6.7	7.5
2	---	---	---	4.9	3.9	4.4	5.1	3.8	4.7	9.9	6.4	8.6
3	---	---	---	5.3	4.4	4.9	5.1	3.7	4.3	10.1	9.6	10.0
4	---	---	---	5.3	2.7	4.3	5.1	3.8	4.4	10.0	9.2	9.6
5	---	---	---	3.2	2.1	2.6	5.5	3.8	4.7	9.8	9.3	9.6
6	---	---	---	4.7	2.5	4.0	4.9	3.6	4.3	9.8	8.8	9.4
7	---	---	---	5.3	3.7	4.4	4.7	3.7	4.2	8.8	7.9	8.3
8	---	---	---	5.5	3.1	4.1	5.3	4.0	4.6	8.4	8.1	8.2
9	---	---	---	7.6	5.5	7.1	5.2	3.5	4.4	9.6	8.1	8.6
10	---	---	---	7.2	5.6	6.6	5.5	3.4	4.2	9.9	8.6	9.3
11	---	---	---	7.1	6.1	6.5	5.9	4.2	5.3	9.3	8.9	9.1
12	1.0	.9	.9	6.8	5.4	6.1	6.8	5.1	5.7	9.2	8.7	8.9
13	1.2	.9	1.0	6.5	5.2	5.8	5.7	4.6	5.2	9.7	9.0	9.2
14	1.2	.9	1.1	7.2	4.9	5.6	5.8	4.9	5.3	9.4	9.1	9.2
15	4.4	1.1	2.6	6.0	4.9	5.4	5.8	4.9	5.3	9.0	8.4	8.7
16	5.4	3.0	4.3	5.6	4.4	5.1	6.3	4.7	5.8	9.0	6.8	7.9
17	4.4	2.4	3.6	5.8	4.3	5.0	6.4	5.3	6.0	7.0	6.4	6.7
18	5.3	2.4	4.4	5.6	4.5	5.2	6.5	4.1	5.1	9.4	6.4	7.6
19	5.0	3.2	4.2	5.7	4.7	5.4	5.2	4.0	4.7	9.6	9.2	9.4
20	3.9	2.5	3.2	6.0	4.6	5.4	6.1	4.4	5.0	9.3	7.0	8.4
21	6.1	2.6	4.0	5.9	4.6	5.3	5.7	4.0	5.1	7.4	6.6	6.9
22	6.4	4.2	5.1	6.7	4.3	5.3	5.0	3.8	4.3	6.7	2.5	5.9
23	5.4	3.3	4.4	4.8	2.6	3.5	5.8	3.6	4.6	4.3	2.9	3.7
24	4.4	2.4	3.6	4.2	2.7	3.5	6.5	4.2	5.2	7.5	5.1	6.1
25	4.4	3.3	3.9	4.8	3.4	4.1	7.4	4.4	6.3	8.4	7.0	7.7
26	5.0	2.8	4.2	5.8	4.2	5.1	6.8	5.5	6.4	8.4	6.0	6.9
27	4.7	2.9	4.0	5.8	4.8	5.3	10.3	6.0	9.3	8.6	7.5	8.0
28	4.8	3.6	4.1	5.6	3.3	4.3	9.8	7.6	9.0	8.6	7.9	8.3
29	5.0	2.6	4.0	5.0	3.9	4.4	8.9	7.3	8.0	8.7	8.1	8.3
30	4.7	2.8	4.0	5.0	3.6	4.3	8.2	6.7	7.5	8.3	6.7	7.9
31	4.7	3.2	4.2	---	---	---	7.6	7.0	7.4	7.7	6.1	7.2
MONTH	6.4	.9	3.5	7.6	2.1	4.9	10.3	3.4	5.5	10.1	2.5	8.1

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.7	6.6	7.4	7.8	5.3	7.2	4.1	1.0	2.0	3.9	3.2	3.6
2	10.5	8.6	9.0	7.4	5.8	6.7	5.1	2.8	3.6	3.8	3.1	3.3
3	9.4	8.8	9.0	8.0	5.7	6.5	6.6	4.5	5.3	3.6	2.7	3.0
4	9.1	8.1	8.6	7.3	6.1	6.6	6.2	3.5	5.2	2.7	2.4	2.5
5	8.5	7.9	8.1	8.0	5.6	6.3	7.0	5.7	6.3	2.6	1.9	2.1
6	8.3	6.8	7.3	7.2	5.4	6.2	7.3	6.3	6.9	4.7	2.0	4.0
7	7.9	6.2	7.0	6.9	4.8	5.7	7.2	5.9	6.3	4.7	3.7	4.2
8	8.3	6.6	7.5	6.7	4.8	5.4	7.5	5.3	5.9	4.4	3.7	4.0
9	8.9	7.2	7.9	7.2	3.4	5.2	6.4	4.4	5.0	6.2	3.7	4.0
10	8.7	7.5	8.2	5.6	4.1	4.8	6.4	3.9	4.8	4.4	3.2	3.7
11	9.9	7.6	8.2	6.5	4.3	5.3	6.0	5.0	5.5	5.5	2.9	4.0
12	8.8	7.5	7.9	6.9	5.0	6.0	6.1	5.1	5.7	5.8	3.1	4.0
13	8.1	7.1	7.6	7.6	4.8	6.6	6.1	4.6	5.2	5.4	2.9	4.0
14	7.6	5.6	6.9	7.5	4.4	6.0	6.5	4.0	5.1	4.7	2.6	3.6
15	8.0	6.1	7.1	6.0	4.1	5.3	7.9	6.1	6.5	4.1	2.6	3.3
16	7.6	6.2	6.6	5.9	5.3	5.6	6.2	5.5	5.9	4.0	2.4	3.4
17	8.2	6.7	7.2	8.4	5.6	6.1	6.2	4.6	5.2	3.6	1.8	2.7
18	7.6	6.8	7.2	7.6	5.3	5.9	5.8	4.5	5.2	3.1	1.5	2.2
19	7.4	6.5	6.8	6.5	4.5	5.4	5.9	4.9	5.2	3.4	1.7	2.6
20	6.6	5.1	5.8	6.1	4.8	5.5	5.9	3.5	4.7	3.3	1.7	2.5
21	9.1	5.5	7.0	5.8	4.8	5.3	4.7	3.5	4.0	3.8	1.6	2.8
22	9.1	7.8	8.6	5.9	3.9	4.9	5.4	3.6	4.3	2.9	2.1	2.4
23	9.5	5.4	7.3	5.2	3.0	3.8	5.5	4.2	4.7	3.0	1.4	2.0
24	10.5	5.5	7.0	5.0	3.2	4.0	5.7	3.8	4.8	4.0	1.0	2.0
25	7.3	5.6	6.3	5.7	3.7	5.0	5.6	4.5	5.0	3.6	1.6	2.5
26	6.7	4.6	6.0	6.2	4.5	5.4	5.8	4.9	5.2	5.3	1.9	3.5
27	7.4	4.3	6.2	5.9	4.2	5.2	5.1	4.5	4.7	6.3	2.1	3.5
28	5.7	4.4	5.1	5.6	3.1	4.6	5.0	3.7	4.2	5.8	2.9	4.0
29	---	---	---	4.2	1.9	3.1	5.1	3.2	3.9	4.6	2.6	3.4
30	---	---	---	4.0	.9	2.0	4.3	3.6	4.0	3.7	2.2	2.9
31	---	---	---	4.3	1.5	2.7	---	---	---	3.9	1.8	2.9
MONTH	10.5	4.3	7.3	8.4	.9	5.3	7.9	1.0	5.0	6.3	1.0	3.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4.1	1.5	2.7	3.9	2.4	3.1	4.4	1.4	2.5	4.7	2.7	3.8
2	4.4	1.6	2.8	4.0	2.7	3.2	6.8	2.9	4.1	4.4	2.4	3.8
3	5.0	1.1	2.5	3.6	1.1	2.5	7.5	3.2	5.0	6.9	2.6	3.9
4	4.7	1.5	2.6	2.9	1.7	2.3	9.6	4.3	6.6	4.0	3.0	3.5
5	3.6	.7	2.0	4.2	1.3	2.5	7.4	2.5	5.3	4.9	3.5	4.1
6	3.1	.7	1.7	2.9	1.2	2.0	5.6	2.6	4.4	5.0	3.8	4.3
7	1.9	.7	1.2	3.4	1.1	2.4	6.2	1.5	4.1	5.4	4.6	4.9
8	2.3	.9	1.5	4.6	1.4	2.2	4.9	2.6	3.9	4.9	4.3	4.7
9	1.3	.7	.9	2.7	.8	1.9	4.9	1.1	2.7	5.5	4.1	4.4
10	3.4	.7	1.8	3.4	.7	2.3	7.4	2.3	4.4	6.0	4.3	5.3
11	3.2	1.5	2.4	3.6	1.0	2.1	6.1	2.3	4.7	5.8	4.6	5.1
12	4.7	1.9	2.9	2.9	1.6	2.3	5.3	2.1	3.9	5.4	4.3	4.7
13	3.2	1.6	2.4	3.8	1.2	2.7	5.3	3.5	4.4	6.7	3.7	4.3
14	3.3	.9	2.2	3.7	1.5	2.7	4.4	1.4	3.3	5.1	3.1	3.9
15	5.0	1.0	2.6	4.4	1.6	3.2	3.6	2.0	2.7	4.4	2.7	3.6
16	5.9	3.4	5.0	4.1	1.3	2.7	5.3	2.2	3.3	4.5	3.1	3.4
17	6.5	5.5	6.1	4.5	1.1	2.9	5.8	3.3	4.3	3.6	2.8	3.2
18	6.0	4.1	5.2	3.0	1.3	2.1	5.4	2.7	3.8	6.2	2.7	3.2
19	5.9	3.7	4.8	3.4	1.3	2.6	4.7	3.2	3.8	4.1	2.5	3.0
20	5.0	2.7	3.7	4.4	2.0	3.1	4.4	1.3	2.7	3.8	2.7	3.0
21	4.3	1.9	3.3	4.4	2.9	3.8	5.3	1.3	3.4	5.1	2.7	3.1
22	5.9	1.8	4.4	3.4	1.9	2.5	4.0	1.8	3.4	3.4	2.3	2.9
23	6.9	3.7	5.3	3.1	1.0	2.1	3.9	2.0	2.9	3.0	1.9	2.7
24	6.5	3.1	4.5	2.6	.8	1.5	5.5	3.3	4.1	3.7	1.1	2.5
25	4.9	3.1	4.1	3.1	1.2	2.2	6.2	2.7	4.7	3.3	.9	2.3
26	5.4	4.4	4.8	3.7	1.4	2.6	5.7	3.7	5.0	3.8	1.1	2.3
27	4.9	3.6	4.2	3.2	1.2	2.3	7.1	4.8	5.9	4.2	1.5	3.2
28	4.7	3.0	3.9	2.7	.9	1.7	8.8	4.9	6.6	4.5	3.1	3.9
29	4.3	3.2	3.9	3.4	1.0	1.9	6.2	4.4	5.4	4.9	1.8	4.0
30	3.9	2.7	3.2	3.8	1.3	2.2	6.2	4.1	5.1	4.1	1.7	3.1
31	---	---	---	2.9	1.0	1.8	5.5	4.2	4.8	---	---	---
MONTH	6.9	.7	3.3	4.6	.7	2.4	9.6	1.1	4.2	6.9	.9	3.7

08075000 BRAYS BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°41'49", long 95°24'43", Harris County, Hydrologic Unit 12040104, near right bank at downstream side of Main Street Bridge in southwest Houston, 1.6 mi upstream from Harris Gully, and 11.6 mi upstream from Buffalo Bayou.

DRAINAGE AREA.--94.9 mi². Prior to October 1976, 88.4 mi². Changes due to drainage ditch relocations.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1936 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7.16 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment; unadjusted for land-surface subsidence. Prior to June 20, 1936, nonrecording gage, and June 20, 1936, to Nov. 25, 1959, water-stage recorder at site 0.8 mi downstream at same datum.

REMARKS.--No estimated daily discharges. Records fair. There is no known diversions above station. Low flow is sustained mostly from sewage effluent from Houston suburbs. Gage-height telemeter at station.

AVERAGE DISCHARGE.--55 years, 142 ft³/s (102,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft³/s June 15, 1976, and Sept. 19, 1983 (gage height, 52.13 ft); minimum daily, 0.1 ft³/s Oct. 11, 12, 1937, Mar. 14, Apr. 1, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1911, 56.0 ft in June 1919 before channel rectification, former site, from information by engineer for city of Houston.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,300 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 10	0930	17,100	44.95	Apr. 5	1530	13,400	42.30
Jan. 15	0030	*19,800	*46.74	Apr. 14	1600	11,000	40.43
Jan. 18	1200	9,310	38.94	Apr. 17	2400	8,450	38.13
Feb. 4	1330	13,200	42.18	May 8	1430	8,920	38.57
Apr. 4	1500	10,100	39.61	June 16	2100	8,650	39.32

Minimum daily discharge, 95 ft³/s Dec. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	102	98	108	103	1080	106	112	101	131	109	125
2	106	103	99	1760	102	222	105	111	98	146	107	254
3	110	104	99	1440	104	141	106	113	121	207	109	318
4	151	149	96	176	3770	124	3020	112	163	170	104	524
5	132	132	98	124	770	113	5510	111	198	127	106	400
6	538	104	138	461	260	107	1050	112	355	187	105	1360
7	201	102	270	165	169	108	341	158	159	340	104	412
8	112	905	103	123	140	108	209	1840	246	149	137	209
9	279	614	99	1420	126	106	161	349	327	292	189	228
10	132	124	98	4850	118	105	209	148	309	147	268	168
11	105	106	97	457	114	107	1140	121	126	128	200	137
12	104	106	96	206	116	106	301	120	106	121	108	146
13	103	102	95	160	118	104	185	123	108	116	108	162
14	103	103	98	1540	123	104	3350	122	174	116	359	132
15	103	103	97	4870	122	188	974	214	1380	116	321	130
16	102	102	128	312	118	554	444	390	1570	291	206	131
17	894	102	108	162	120	279	584	398	1250	216	111	137
18	252	104	144	3120	117	124	1770	236	836	130	117	387
19	109	103	105	573	393	109	375	214	746	126	114	485
20	104	102	102	216	129	108	216	189	788	122	106	182
21	770	101	117	143	1800	103	149	190	369	147	107	122
22	317	215	103	119	302	109	135	265	341	194	145	117
23	119	215	108	112	160	107	132	194	323	196	151	123
24	106	107	114	95	132	103	125	127	779	164	107	195
25	103	101	107	115	261	105	121	117	523	170	102	308
26	102	102	718	107	181	106	120	111	272	130	105	129
27	102	109	556	107	123	105	117	113	152	109	142	114
28	102	110	127	106	596	124	116	119	185	105	117	114
29	104	98	109	104	---	427	116	235	168	105	116	110
30	104	98	107	117	---	114	111	107	131	127	111	120
31	104	---	109	103	---	103	---	102	---	181	193	---
TOTAL	5878	4728	4543	23571	10687	5503	21398	6973	12404	5006	4484	7479
MEAN	190	158	147	760	382	178	713	225	413	161	145	249
MAX	894	905	718	4870	3770	1080	5510	1840	1570	340	359	1360
MIN	102	98	95	103	102	103	105	102	98	105	102	110
AC-FT	11660	9380	9010	46750	21200	10920	42440	13830	24600	9930	8890	14830

CAL YR 1990 TOTAL 17142 MEAN 197 MAX 2380 MIN 95 AC-FT 142300
WTR YR 1991 TOTAL 112654 MEAN 309 MAX 5510 MIN 95 AC-FT 223400

08075000 BRAYS BAYOU AT HOUSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
FEB												
26...	1102	178	640	8.3	16.0	22	11	11.8	117	2.7	2.1	K8
APR												
30...	1310	118	816	8.6	28.0	5	2.5	15.0	190	4.2	3.6	150
MAY												
30...	1035	104	762	8.4	28.0	10	4.3	12.0	152	2.4	2.2	2300
JUL												
23...	1055	160	678	8.4	29.0	13	10	11.2	144	2.7	2.5	3600
AUG												
20...	0834	96	770	7.9	28.5	12	10	8.2	105	3.7	3.5	6000

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
FEB												
26...	K1	140	0	41	8.3	78	3	6.0	180	32	69	0.40
APR												
30...	100	--	--	--	--	--	--	--	--	--	--	--
MAY												
30...	120	150	0	45	9.3	98	3	6.9	190	38	90	0.50
JUL												
23...	190	130	0	38	7.2	91	4	9.1	170	31	71	0.30
AUG												
20...	700	--	--	--	--	--	--	--	--	--	--	--

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
FEB											
26...	18	359	12	<1	--	4.67	0.030	4.70	0.120	0.98	1.1
APR											
30...	--	--	4	4	0	6.12	0.180	6.30	0.280	1.2	1.5
MAY											
30...	22	426	13	2	11	4.96	0.040	5.00	0.040	1.3	1.3
JUL											
23...	20	369	4	<1	--	4.62	0.080	4.70	0.320	1.5	1.8
AUG											
20...	--	--	27	27	0	7.02	0.080	7.10	0.260	1.0	1.3

DATE	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
FEB											
26...	2.50	2.00	7.4	3	84	<0.5	<1.0	<5	<3	<10	15
APR											
30...	3.00	3.00	5.7	--	--	--	--	--	--	--	--
MAY											
30...	3.00	2.50	8.0	5	97	<0.5	<1.0	<5	<3	<10	17
JUL											
23...	2.70	2.70	6.8	3	79	<0.5	<1.0	<5	<3	<10	37
AUG											
20...	3.20	3.10	5.0	--	--	--	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB											
26...	<10	15	13	<0.1	<10	<10	1	<1.0	340	<6	16
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
30...	<10	19	9	<0.1	<10	<10	<1	<1.0	430	<6	20
JUL											
23...	<10	17	6	<0.1	10	<10	1	<1.0	350	6	17
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

08075000 BRAYS BAYOU AT HOUSTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
FEB											
26...	<0.10	0.60	<0.20	<0.5	0.4	<0.1	<0.10	<0.5	<0.50	0.10	<0.1
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
30...	--	--	--	<0.5	--	--	--	<0.5	<0.50	--	--
JUL											
23...	--	--	--	<0.5	--	--	--	<0.5	<0.50	--	--
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

08075400 SIMS BAYOU AT HIRAM CLARKE STREET, HOUSTON, TX

LOCATION.--Lat 29°37'07", long 95°26'45", Harris County, Hydrologic Unit 12040104, on right bank at downstream side of bridge on Hiram Clarke Street in southwest Houston, 12.7 mi upstream from gage Sims Bayou at Houston, and 19.7 mi upstream from mouth.

DRAINAGE AREA.--20.2 mi².

PERIOD OF RECORD.--August 1964 to current year (discharge measurements and supplemental peak discharges only Dec. 6, 1978, to Aug. 31, 1979).
Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1970 to September 1985.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929, 1959 adjustment; unadjusted for land-surface subsidence.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Channel bed was lowered 1 to 2 ft during rectification in 1990. Stage discharge relationship is affected by seasonal vegetal growth during most years. No known diversion above station. Low flow is partly sustained by sewage effluent from Houston suburbs. Records furnished by Houston Lighting and Power Co. show that during the current year about 61.7 acre-ft of ground water was used for cooling purposes then released to the Bayou about 200 ft upstream from this station. Gage-height telemeter station. Station converted to Flood-hydrograph Partial-record station on Oct. 1, 1991.

AVERAGE DISCHARGE.--26 years (water years 1965-78, 1980-91), 30.3 ft³/s (21,950 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,190 ft³/s Aug. 1, 1989 (elevation, 54.32 ft); maximum elevation, 57.12 ft June 15, 1976, occurred prior to 1978 channel rectification; minimum daily discharge, 1.5 ft³/s July 26, 1965.

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

Date	Time	Discharge (ft³/s)	Elevation (ft)	Date	Time	Discharge (ft³/s)	Elevation (ft)
Jan. 10	0945	3,730	49.44	Apr. 5	1530	4,080	49.67
Jan. 15	0045	*5,120	*51.37	May 8	1430	2,150	45.72
Jan. 18	1215	2,030	45.40	June 15	1245	2,360	46.23
Feb. 4	1345	2,390	46.28	June 18	2400	1,810	44.84
Apr. 4	1800	1,570	44.14				

Minimum daily discharge, 8.0 ft³/s Aug. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	9.3	11	11	12	122	12	9.8	14	14	11	11
2	11	9.1	11	250	13	26	12	9.1	12	14	8.5	9.8
3	11	9.4	14	250	12	15	12	9.6	12	13	11	9.8
4	36	12	16	22	692	12	466	9.9	11	14	10	29
5	20	11	14	15	174	11	1600	11	12	11	9.2	39
6	20	10	16	70	43	12	269	9.8	12	54	10	188
7	24	11	18	19	25	9.7	49	24	38	44	8.0	51
8	15	135	11	13	20	9.3	22	591	93	15	11	26
9	40	94	10	183	19	11	15	113	55	15	9.0	13
10	19	16	9.9	1120	17	10	20	28	57	12	11	13
11	13	11	12	89	16	9.6	169	17	21	12	23	11
12	10	10	9.7	25	16	9.9	42	13	14	11	9.0	14
13	11	12	10	16	15	9.6	21	12	15	12	10	18
14	11	12	9.5	427	18	9.9	225	11	15	11	35	17
15	11	11	9.7	1300	15	19	97	11	668	12	42	11
16	12	13	9.6	54	16	54	33	85	158	12	18	11
17	28	15	9.8	23	16	35	39	60	288	9.9	13	12
18	22	11	13	628	17	15	89	47	227	11	11	18
19	12	12	10	109	19	12	25	31	515	9.2	11	12
20	11	14	9.5	32	15	11	14	33	54	12	9.9	11
21	87	11	11	19	428	12	12	18	25	15	8.8	10
22	36	12	12	15	69	12	11	15	26	15	25	11
23	16	13	11	14	31	13	11	15	34	17	18	11
24	11	13	11	18	18	12	11	13	16	41	11	10
25	11	11	12	14	20	11	11	12	76	14	9.9	15
26	9.1	11	98	14	18	12	11	11	82	15	9.7	11
27	9.0	12	99	13	14	12	11	12	25	13	9.4	12
28	9.3	21	17	11	34	14	11	12	26	11	8.9	10
29	9.1	11	14	12	---	33	8.6	47	25	9.9	8.9	9.3
30	10	11	12	11	---	14	11	23	16	11	8.3	9.9
31	9.9	---	11	14	---	12	---	13	---	12	8.8	---
TOTAL	564.3	563.8	541.7	4811	1822	580.0	3339.6	1326.2	2642	492.0	407.3	633.8
MEAN	18.2	18.8	17.5	155	65.1	18.7	111	42.8	88.1	15.9	13.1	21.1
MAX	87	135	99	1300	692	122	1600	591	668	54	42	188
MIN	9.0	9.1	9.5	11	12	9.3	8.6	9.1	11	9.2	8.0	9.3
AC-FT	1120	1120	1070	9540	3610	1150	6620	2630	5240	976	808	1260

CAL YR 1990 TOTAL 8065.2 MEAN 22.1 MAX 318 MIN 7.8 AC-FT 16000
WTR YR 1991 TOTAL 17723.7 MEAN 48.6 MAX 1600 MIN 8.0 AC-FT 35150

08075500 SIMS BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°40'27", long 95°17'21", Harris County, Hydrologic Unit 12040104, on left bank between bridges on State Highway 35 in southeast Houston and 7.0 mi upstream from mouth.

DRAINAGE AREA.--63.0 mi². Prior to Oct. 1, 1976, 64.0 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1922: 1960. 1975(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3.09 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment; unadjusted for land-surface subsidence.

REMARKS.-- Records good except those for estimated daily discharges, which are poor. Low flow is largely sustained by sewage effluent from Houston suburbs and from industrial wastes. Stage-discharge relationship is affected by seasonal vegetal growth during most years. Gage-height telemeter at station.

AVERAGE DISCHARGE.--39 years, 90.5 ft³/s (65,570 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft³/s Aug. 18, 1983, Hurricane Alicia (gage height, 33.23 ft); minimum daily, 0.9 ft³/s Aug. 7, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 10	1330	4,920	25.85	Apr. 4	2000	3,040	22.26
Jan. 15	0300	*7,040	*28.92	Apr. 5	1800	6,250	27.84
Jan. 18	1530	3,330	22.89	May 8	1930	2,850	21.84
Feb. 4	1800	3,920	24.10	June 17	0100	3,540	23.33

Minimum daily discharge, 30 ft³/s Sept. 17, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	44	38	43	43	269	38	47	48	44	46	39
2	55	45	44	355	37	103	42	45	46	43	42	41
3	59	52	46	1140	37	63	41	47	53	42	43	39
4	81	58	49	149	1580	52	1220	47	57	51	43	54
5	103	54	47	66	1020	51	3460	49	44	74	41	203
6	65	42	57	299	199	51	1460	46	46	43	40	630
7	101	45	82	149	89	47	280	121	200	124	43	261
8	66	293	47	68	61	42	114	1050	944	48	42	121
9	86	689	44	300	55	37	76	790	125	44	e40	50
10	86	75	43	2670	47	37	268	140	178	41	e43	42
11	59	48	45	616	44	37	511	76	78	40	e140	37
12	55	45	42	136	45	38	273	58	53	41	e50	47
13	52	48	42	77	42	38	113	51	51	39	e60	570
14	53	46	42	302	46	36	621	48	110	37	e200	148
15	49	46	38	3450	41	63	592	52	1040	41	e240	38
16	53	45	37	328	38	167	155	183	947	44	e70	32
17	265	45	38	107	40	181	158	424	1950	45	e50	30
18	179	39	55	1560	44	62	931	209	325	41	e50	43
19	59	38	43	668	63	51	213	248	1570	41	e48	291
20	47	42	36	165	47	49	100	128	273	38	46	55
21	221	40	54	82	1350	48	65	90	114	58	44	35
22	216	47	48	64	382	50	60	68	84	66	139	33
23	68	43	37	57	116	47	60	62	94	70	126	35
24	51	43	36	65	66	41	55	51	98	79	43	41
25	44	43	38	59	73	41	53	51	132	58	38	50
26	42	36	139	52	74	44	50	49	244	49	40	33
27	40	41	493	50	51	42	50	47	78	49	37	32
28	42	66	83	52	56	46	48	49	105	38	45	31
29	42	41	59	49	---	150	46	104	72	68	38	30
30	43	38	49	50	---	50	46	86	48	45	37	32
31	44	---	43	45	---	38	---	50	---	46	40	---
TOTAL	2478	2277	1994	13273	5786	2071	11199	4566	9207	1587	2004	3123
MEAN	79.9	75.9	64.3	428	207	66.8	373	147	307	51.2	64.6	104
MAX	265	689	493	3450	1580	269	3460	1050	1950	124	240	630
MIN	40	36	36	43	37	36	38	45	44	37	37	30
AC-FT	4920	4520	3960	26330	11480	4110	22210	9060	18260	3150	3970	6190

CAL YR 1990 TOTAL 30105 MEAN 82.5 MAX 846 MIN 35 AC-FT 59710
WTR YR 1991 TOTAL 59565 MEAN 163 MAX 3460 MIN 30 AC-FT 118100

e Estimated

08075500 SIMS BAYOU AT HOUSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
FEB											
26...	0835	80	732	8.0	13.0	55	25	8.0	75	5.3	K2
APR											
30...	1213	30	1200	7.8	24.0	12	18	4.0	47	12	1200
MAY											
30...	0858	84	603	7.6	26.5	45	30	4.2	52	5.6	19000
JUL											
23...	0835	52	1150	7.9	29.0	35	15	2.5	32	3.8	11000
AUG											
20...	1004	48	792	7.3	31.0	14	19	3.5	47	4.6	7000

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
FEB											
26...	K1	150	0	44	10	89	3	4.5	170	54	89
APR											
30...	200	--	--	--	--	--	--	--	--	--	--
MAY											
30...	4700	120	0	34	7.9	77	3	5.2	130	31	82
JUL											
23...	12000	120	0	37	7.2	190	7	7.1	160	240	83
AUG											
20...	190	--	--	--	--	--	--	--	--	--	--

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
FEB											
26...	0.40	13	407	30	3	27	3.04	0.160	3.20	0.960	1.0
APR											
30...	--	--	--	44	12	32	4.10	1.40	5.50	1.40	1.3
MAY											
30...	0.40	11	325	80	15	65	2.04	0.160	2.20	0.280	0.92
JUL											
23...	0.40	14	677	8	6	2	4.07	0.430	4.50	0.580	0.92
AUG											
20...	--	--	--	38	36	2	3.86	0.540	4.40	0.830	0.77

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
FEB											
26...	2.0	0.880	7.6	3	110	<0.5	1.0	<5	<3	10	30
APR											
30...	2.7	1.50	6.5	--	--	--	--	--	--	--	--
MAY											
30...	1.2	0.940	5.9	3	89	<0.5	<1.0	<5	<3	<10	29
JUL											
23...	1.5	1.80	8.4	3	98	0.6	<1.0	<5	<3	<10	16
AUG											
20...	1.6	1.40	6.6	--	--	--	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB											
26...	<10	11	100	<0.1	<10	<10	<1	<1.0	310	<6	14
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
30...	<10	10	88	<0.1	<10	<10	<1	<1.0	250	6	15
JUL											
23...	<10	13	99	<0.1	<10	<10	<1	<1.0	290	6	12
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

08075500 SIMS BAYOU AT HOUSTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
FEB											
26...	<0.10	0.10	<0.20	<0.5	<0.2	<0.1	<0.10	<0.5	<0.50	<0.10	<0.1
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
30...	--	--	--	<0.5	--	--	--	<0.5	<0.50	--	--
JUL											
23...	--	--	--	<0.5	--	--	--	<0.5	<0.50	--	--
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

08075650 BERRY BAYOU AT FOREST OAKS STREET, HOUSTON, TX

LOCATION.--Lat 29°40'35", long 95°14'37", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of bridge at Forest Oaks Street in southeast Houston, 0.8 mi upstream from mouth of Berry Creek, and 1.7 mi upstream from Sims Bayou.

DRAINAGE AREA.--10.7 mi². Prior to Oct. 1, 1973, 11.1 mi². Oct. 1, 1973, to Sept. 30, 1976, 10.6 mi², Oct. 1, 1976, to Dec. 31, 1977, 10.1 mi². Drainage ditch relocations resulted in drainage area changes.

PERIOD OF RECORD.--October 1967 to current year (stage only beginning October 1982). October 1966 to September 1982 operated as partial discharge or flood-hydrograph partial-record station. April 1964 to September 1966 operated as a daily discharge station.

Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1968 to September 1981. Water temperatures: April 1964 to September 1981.

REVISED RECORDS.--WDR TX-80-2: 1979(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2.72 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment prior to Oct. 1, 1982, auxiliary water-stage recorder 0.8 mi downstream at same datum. June 25, 1964 to Jan. 11, 1965, auxiliary nonrecording gage 0.8 mi downstream at same datum.

REMARKS.--No estimated daily gage heights. Records good. Low stages are affected by tidal surge. Rises are sometimes affected by backwater from Sims Bayou. The reports "Hydrologic Data for Urban Studies in the Houston, Texas Metropolitan area", for water years 1965-82, contain additional storm runoff data for this station. Stage and rainfall radio-telemetry at station is operated by Harris County Flood Control District.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,080 ft³/s June 9, 1975; maximum gage height, 23.85 ft Sept. 20, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 16.44 ft Apr. 4 at 1600 hours; minimum, 3.72 ft July 16.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	5.48	3.89	6.18	4.27	6.44	4.60	5.08	3.91	5.30	3.92	6.67	4.36
2	6.32	4.25	6.96	4.47	6.22	3.92	7.90	4.02	5.47	4.17	5.69	4.17
3	6.44	5.36	6.82	4.82	6.04	3.82	7.82	4.45	5.43	4.22	4.70	3.87
4	5.86	4.22	6.80	4.15	4.54	3.77	5.29	4.15	13.43	7.10	4.95	3.86
5	5.70	3.93	4.87	3.91	5.48	3.85	5.53	4.76	7.10	4.87	5.13	3.87
6	5.87	4.12	5.97	4.28	5.52	3.97	7.08	4.71	5.03	4.20	5.00	3.91
7	5.99	4.32	6.14	4.03	5.50	3.89	5.33	4.23	4.75	3.98	4.97	3.82
8	5.92	4.25	10.24	5.20	4.77	3.89	4.99	4.07	4.90	3.92	4.98	3.80
9	6.28	3.91	7.33	4.25	5.06	3.89	9.67	4.17	4.73	3.89	5.09	3.80
10	3.91	3.84	4.38	4.08	4.93	3.82	11.58	5.73	4.67	3.87	5.27	3.80
11	5.31	3.85	4.97	4.08	4.88	3.82	6.00	4.28	4.58	3.87	5.57	4.05
12	5.47	3.85	5.22	4.11	5.33	3.87	5.06	4.04	4.85	3.90	5.46	3.88
13	4.97	3.85	5.03	3.92	5.02	3.83	5.22	3.97	5.17	3.90	4.80	3.84
14	5.33	3.93	5.39	3.94	5.16	3.82	13.25	4.19	4.82	3.87	4.77	3.83
15	5.43	4.03	5.78	4.25	5.18	3.83	13.47	4.70	4.49	3.83	6.24	4.52
16	5.69	4.38	5.67	3.88	5.31	3.86	4.80	4.18	5.77	3.85	6.99	5.05
17	7.43	4.58	5.58	3.90	5.73	3.90	5.67	4.11	5.95	4.38	6.67	4.55
18	6.17	3.98	5.94	4.18	5.82	3.90	12.58	5.43	5.67	4.28	5.20	3.91
19	5.93	4.14	6.09	4.38	5.32	3.87	---	4.38	5.39	3.96	5.74	3.88
20	6.36	4.87	6.04	4.19	5.70	4.20	5.17	4.07	4.97	3.82	6.07	4.15
21	6.27	4.62	6.16	4.46	5.86	4.52	4.48	3.97	11.25	4.40	5.87	4.07
22	4.96	3.98	6.05	4.32	5.09	3.93	5.30	3.99	5.27	4.18	5.74	5.08
23	5.37	3.93	5.91	3.98	4.13	3.86	5.97	4.40	4.53	4.07	5.08	3.80
24	5.51	3.89	5.58	4.56	4.15	3.85	6.09	4.20	4.94	3.95	5.17	3.80
25	4.91	3.84	5.88	4.57	5.15	3.97	5.75	3.95	4.76	3.95	5.71	3.86
26	5.25	4.03	5.92	5.15	8.60	4.40	5.48	3.94	4.68	3.98	5.83	4.30
27	5.44	3.91	6.56	5.33	7.75	4.61	5.84	3.95	5.02	3.95	6.12	4.46
28	5.12	3.87	5.68	4.06	5.36	4.04	5.73	---	6.19	4.11	5.57	4.42
29	5.33	4.02	5.22	3.86	5.57	3.99	5.68	3.95	---	---	5.33	3.95
30	5.53	4.48	6.23	4.08	5.42	3.94	5.59	3.93	---	---	5.02	3.89
31	5.38	3.99	---	---	4.52	3.89	4.87	3.90	---	---	5.05	3.85
MONTH	7.43	3.84	10.24	3.86	8.60	3.77	---	---	13.43	3.82	6.99	3.80

08075650 BERRY BAYOU AT FOREST OAKS STREET, HOUSTON, TX--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	4.83	3.82	6.47	4.37	6.72	5.12	5.27	3.81	5.16	4.17	5.89	4.30
2	5.97	3.85	6.81	4.67	6.38	4.90	5.27	3.82	5.12	4.03	5.96	4.01
3	5.81	4.25	6.73	4.86	6.12	4.85	5.73	3.99	5.28	3.98	6.14	4.18
4	16.44	4.14	6.57	4.72	5.60	4.03	5.03	4.19	5.12	3.85	6.77	4.38
5	13.20	5.47	6.09	4.29	5.18	4.04	5.37	4.15	5.12	3.87	7.26	4.62
6	7.85	5.24	5.61	3.78	4.95	4.01	5.82	4.20	5.11	3.85	7.99	5.28
7	5.98	4.34	9.63	4.60	7.20	4.06	6.20	3.96	5.22	3.82	6.32	4.81
8	5.92	4.35	14.69	5.06	7.36	5.20	6.00	3.92	---	3.87	5.89	4.35
9	5.78	4.27	7.10	5.07	7.19	5.07	5.43	3.85	---	3.76	6.04	4.48
10	5.92	4.08	6.26	4.94	6.99	4.68	5.60	3.85	6.75	3.76	6.36	4.88
11	7.51	5.32	6.02	4.88	6.31	4.30	5.58	3.82	5.73	4.14	6.17	4.70
12	6.34	5.26	6.08	4.50	6.24	4.06	5.30	3.78	5.20	4.29	6.15	4.71
13	6.98	5.30	6.28	4.24	6.17	3.96	5.12	3.77	---	3.81	6.08	4.63
14	10.44	4.93	6.62	4.12	6.25	4.18	4.97	3.76	---	---	6.21	4.54
15	6.20	5.12	7.25	4.16	6.42	4.25	4.78	3.75	5.68	4.35	6.24	4.27
16	6.93	4.70	7.44	5.08	7.83	4.12	5.19	3.72	5.25	3.84	5.91	4.06
17	12.50	4.49	6.50	4.71	7.60	4.60	4.62	3.82	5.25	3.77	5.63	3.99
18	12.70	5.50	6.74	4.94	5.72	4.20	4.81	3.81	5.16	3.83	5.79	4.09
19	6.46	4.30	6.70	4.52	8.94	4.11	5.00	3.81	4.80	4.34	7.53	4.18
20	5.50	4.30	6.82	5.37	5.59	4.15	5.21	3.82	---	---	5.66	4.23
21	6.22	3.99	6.23	4.75	5.36	4.00	5.39	3.81	---	---	5.95	4.38
22	6.21	4.47	6.50	5.32	6.09	3.97	5.59	3.90	---	---	6.06	4.48
23	5.57	4.03	6.97	5.62	5.41	4.05	5.57	4.05	---	---	5.92	4.59
24	6.00	4.54	6.81	5.15	6.22	3.98	5.22	3.92	---	---	5.87	4.56
25	6.13	4.80	6.73	4.75	6.47	4.26	5.24	3.83	---	---	5.42	3.80
26	6.30	4.68	6.18	4.25	5.70	4.33	5.12	3.87	---	---	5.31	3.78
27	6.90	5.16	6.06	4.17	5.52	4.02	5.16	3.83	---	---	5.47	3.88
28	6.72	5.16	6.38	4.21	6.46	3.93	5.02	3.91	---	---	5.74	3.96
29	6.04	4.90	11.85	4.62	6.09	3.98	6.20	3.99	5.21	3.88	6.13	4.12
30	6.57	4.40	6.77	4.64	5.84	4.20	4.95	4.04	5.17	3.87	6.14	4.22
31	---	---	4.90	5.10	---	---	4.72	3.90	5.67	4.03	---	---
MONTH	16.44	3.82	14.69	3.78	8.94	3.93	6.20	3.72	---	---	7.99	3.78

08075730 VINCE BAYOU AT PASADENA, TX

LOCATION.--Lat 29°41'40", long 95°12'58", Harris County, Hydrologic Unit 12040104, on right bank of concrete lined channel at end of West Ellaine Avenue in Pasadena and 2.4 mi upstream from mouth.

DRAINAGE AREA.--8.26 mi². Prior to Jan. 1, 1978, 8.21 mi². Jan. 1 to Sept. 30, 1978, 7.61 mi². Oct. 1, 1978, to Sept. 30, 1987, 7.32 mi². Drainage area revisions due to drainage ditch changes.

PERIOD OF RECORD.--October 1971 to current year.
Water-quality records.--Chemical, biochemical, and pesticide analyses: May 1971 to September 1973 and October 1976 to July 1979.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2.54 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment; unadjusted for land-surface subsidence (levels by the U.S. Army Corps of Engineers).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--20 years, 16.0 ft³/s (11,590 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,720 ft³/s May 3, 1981 (gage height, 18.30 ft); no flow Aug. 5, 6, 18, 1972, and July 28, 1986.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 14	2345	1,820	14.04	Apr. 5	1415	1,670	13.78
Jan. 18	1145	1,560	13.58	Apr. 17	2330	1,850	14.10
Feb. 4	1300	1,750	13.91	May 8	1400	1,930	14.24
Feb. 21	0915	1,590	13.64	May 29	1245	*2,210	*14.74
Apr. 4	1530	2,060	14.48				

Minimum daily discharge, 0.22 ft³/s July 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	.85	1.2	.63	.79	9.5	.64	.57	1.3	.40	.55	18
2	2.7	6.4	.61	82	.71	4.5	.35	.63	.90	.38	.33	1.1
3	3.4	12	1.0	98	.63	3.9	.53	.89	1.4	13	1.1	.52
4	1.5	7.3	.77	5.9	353	3.6	386	1.3	1.4	14	2.8	1.8
5	.63	5.8	.43	2.3	37	3.2	549	1.1	.59	27	3.1	90
6	.71	2.0	9.4	67	5.8	3.0	35	.70	.51	12	1.1	103
7	1.2	1.3	9.2	27	3.7	1.9	5.8	97	18	10	1.8	9.3
8	.87	122	2.1	3.9	2.2	2.7	2.0	376	12	1.2	2.3	2.2
9	4.3	26	.55	142	1.1	1.9	1.3	34	12	.38	.73	1.0
10	2.4	2.3	.45	264	1.5	.55	8.9	7.2	6.0	.56	55	.96
11	2.4	.65	.49	15	.96	.83	73	3.2	2.5	.43	104	.78
12	1.2	.38	.84	3.5	.96	1.5	7.7	2.7	2.1	.47	16	7.0
13	.87	.32	1.0	1.4	.57	3.0	2.6	1.4	3.0	.40	1.2	1.7
14	1.4	.39	1.1	116	.87	1.5	286	1.1	3.8	.69	.85	1.1
15	1.9	.47	1.6	218	1.6	13	33	13	13	.91	59	1.1
16	2.1	.50	1.5	8.4	.86	43	7.1	49	145	.53	1.7	1.2
17	78	1.7	1.4	2.9	.83	12	69	24	47	.69	.43	1.2
18	13	.98	3.9	307	.97	1.9	204	33	3.5	.47	.39	6.0
19	4.9	2.8	1.2	23	5.3	.81	32	9.2	29	.24	.40	2.0
20	3.1	.45	4.3	5.7	.99	1.2	14	2.1	2.2	.22	.36	1.2
21	40	.26	20	2.5	328	.88	2.5	1.3	1.2	2.4	.47	1.1
22	13	.63	4.6	1.7	20	.59	1.2	.96	30	.35	1.1	1.0
23	2.0	2.3	1.7	1.6	5.6	.80	1.3	1.0	5.6	1.7	.78	1.0
24	.96	1.2	1.3	9.0	2.5	1.4	.80	.97	14	.77	.81	1.5
25	.95	.68	.79	1.3	9.1	1.4	.98	.76	5.6	1.5	.48	1.3
26	.97	.59	91	.87	3.6	1.5	.78	.71	21	.40	.38	1.2
27	.90	14	78	.96	1.2	2.1	1.1	.67	2.7	4.2	.75	1.1
28	.65	5.0	4.6	.96	10	4.7	.91	.63	3.2	31	.40	1.0
29	.63	1.0	1.8	1.8	---	21	.57	299	.86	51	.26	1.0
30	.72	.82	1.3	2.0	---	1.4	.57	15	.53	2.9	.74	1.1
31	.65	---	.87	.87	---	.76	---	3.2	---	.74	18	---
TOTAL	190.21	221.07	249.00	1417.19	800.34	150.02	1728.63	982.29	389.89	180.93	277.31	262.46
MEAN	6.14	7.37	8.03	45.7	28.6	4.84	57.6	31.7	13.0	5.84	8.95	8.75
MAX	78	122	91	307	353	43	549	376	145	51	104	103
MIN	.63	.26	.43	.63	.57	.55	.35	.57	.51	.22	.26	.52
AC-FT	377	438	494	2810	1590	298	3430	1950	773	359	550	521

CAL YR 1990	TOTAL	2927.19	MEAN	8.02	MAX	136	MIN	.01	AC-FT	5810
WTR YR 1991	TOTAL	6849.34	MEAN	18.8	MAX	549	MIN	.22	AC-FT	13590

08075770 HUNTING BAYOU AT INTERSTATE HIGHWAY 610, HOUSTON, TX

LOCATION.--Lat 29°47'35", long 95°16'04", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of downstream service road bridge of Interstate Highway 610 in northeast Houston and 8.8 mi upstream from mouth.

DRAINAGE AREA.--16.1 mi². Prior to Oct. 1, 1973, 16.8 mi². Oct. 1, 1973, to Sept. 30, 1978, 14.7 mi². Oct. 1, 1978, to Sept. 30, 1987, 15.8 mi². Changes due to storm sewer relocations and addition or relocation of ditches.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1964 to current year. Prior to October 1973, published as "U.S. Highway 90-A, Houston".

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929, 1959 adjustment; unadjusted for land-surface subsidence. Prior to Oct. 1, 1972, water-stage recorder at site 1,800 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Low flow is largely maintained by sewage and industrial effluent. The stage-discharge relationship is affected by seasonal vegetal growth during most years. Recording rain gage at station. Stage and rainfall radio-telemeter at station, is operated by the Harris County Flood Control District.

AVERAGE DISCHARGE.--27 years, 23.6 ft³/s (17,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,470 ft³/s June 26, 1989 (elevation, 39.91 ft); minimum daily discharge, 0.88 ft³/s Aug. 24, 1971.

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

Date	Time	Discharge (ft³/s)	Elevation (ft)	Date	Time	Discharge (ft³/s)	Elevation (ft)
Jan. 10	1130	1,530	33.23	Apr. 5	1700	1,630	33.64
Jan. 15	0130	*1,900	*34.75	Apr. 14	1800	1,290	32.16
Jan. 18	1330	1,070	31.05	June 15	1300	1,070	31.07

Minimum daily discharge, 3.4 ft³/s Oct. 16, 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	3.5	5.6	8.4	11	76	7.0	5.5	4.7	8.3	11	27
2	3.8	4.4	5.2	185	11	20	6.1	7.0	4.2	8.8	5.6	44
3	5.1	12	4.9	202	10	13	5.7	5.1	7.6	14	5.4	34
4	13	11	4.9	24	382	11	167	5.3	12	33	5.4	11
5	17	8.7	4.7	15	164	11	731	4.9	4.5	13	7.1	42
6	8.7	4.6	7.1	53	34	9.7	209	4.4	4.0	8.6	5.8	104
7	10	4.0	14	24	20	9.6	33	4.8	28	8.8	25	66
8	4.6	75	7.0	14	16	8.5	16	19	70	7.0	14	39
9	18	140	10	90	15	7.6	12	13	51	6.4	7.0	9.2
10	11	14	7.3	650	14	7.4	10	5.9	29	6.4	5.6	8.1
11	5.8	8.4	5.6	85	13	7.4	117	5.6	24	6.3	5.5	6.7
12	4.2	6.9	5.0	26	12	7.7	34	4.9	39	5.9	5.8	67
13	3.9	6.2	4.9	18	12	6.9	17	4.6	10	5.8	6.0	63
14	3.8	5.3	5.1	121	11	6.8	454	4.8	13	5.7	8.8	25
15	3.7	5.0	4.9	730	10	24	186	40	407	5.8	13	8.2
16	3.4	5.0	4.7	53	9.8	57	35	32	74	5.5	60	7.4
17	96	4.7	4.9	25	11	36	61	22	82	5.4	16	6.2
18	52	4.8	10	434	11	14	165	11	38	7.0	8.8	11
19	7.2	5.0	5.6	117	31	9.6	26	11	27	11	20	8.6
20	5.0	4.9	5.1	32	13	8.4	14	9.8	18	6.1	6.0	5.6
21	92	4.9	9.1	20	282	8.8	9.9	9.0	22	5.7	5.2	5.4
22	35	17	7.1	19	57	7.9	8.7	13	19	5.8	9.9	6.5
23	8.0	17	6.1	15	21	7.3	7.8	14	15	5.2	5.5	5.2
24	5.4	8.0	5.7	24	15	7.1	7.0	6.5	e14	6.4	6.4	9.2
25	4.5	6.8	6.3	16	19	6.7	6.9	5.9	e27	11	4.6	18
26	4.1	6.7	47	14	15	6.6	6.4	4.9	e43	7.7	4.0	5.6
27	3.8	8.8	95	14	12	6.3	6.6	4.7	47	5.5	3.6	4.8
28	3.8	6.2	13	13	20	8.8	6.0	4.5	16	5.0	3.7	4.5
29	3.6	4.9	9.6	13	---	33	5.6	43	14	21	3.5	6.8
30	3.5	4.8	8.4	13	---	8.2	5.0	15	9.5	17	3.6	5.7
31	3.4	---	8.2	13	---	6.8	---	6.4	---	5.8	5.6	---
TOTAL	446.9	418.5	342.0	3080.4	1251.8	459.1	2375.7	347.5	1173.5	274.9	297.4	664.7
MEAN	14.4	13.9	11.0	99.4	44.7	14.8	79.2	11.2	39.1	8.87	9.59	22.2
MAX	96	140	95	730	382	76	731	43	407	33	60	104
MIN	3.4	3.5	4.7	8.4	9.8	6.3	5.0	4.4	4.0	5.0	3.5	4.5
AC-FT	886	830	678	6110	2480	911	4710	689	2330	545	590	1320

CAL YR 1990 TOTAL 6152.3 MEAN 16.9 MAX 253 MIN 2.3 AC-FT 12200
WTR YR 1991 TOTAL 11132.4 MEAN 30.5 MAX 731 MIN 3.4 AC-FT 22080

e Estimated

08075770 HUNTING BAYOU AT INTERSTATE HIGHWAY 610, HOUSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to current year.

INSTRUMENTATION.--Stage-activated water sampler from July 1983 to September 1988 provided water-quality samples over selected runoff events.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
FEB												
25...	1030	12	806	8.0	16.0	25	10	9.6	96	0.6	0.5	K8
APR												
30...	0912	5.0	986	7.7	22.0	10	4.7	5.8	66	4.6	4.1	820
MAY												
29...	1010	4.0	848	7.7	27.5	22	10	6.2	78	5.0	4.9	650
JUL												
22...	1027	5.9	728	7.7	28.0	13	12	5.6	71	4.0	3.5	2500
AUG												
20...	1254	5.9	482	7.3	31.5	17	6.0	7.0	94	3.4	3.2	920

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
FEB												
25...	K2	250	0	73	16	77	2	4.0	270	58	64	0.70
APR												
30...	580	--	--	--	--	--	--	--	--	--	--	--
MAY												
29...	120	230	0	68	15	91	3	4.4	270	39	70	0.40
JUL												
22...	500	180	0	51	12	81	3	6.1	180	61	63	0.60
AUG												
20...	140	--	--	--	--	--	--	--	--	--	--	--

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
FEB											
25...	15	473	4	<1	--	1.71	0.090	1.80	0.440	0.86	1.3
APR											
30...	--	--	6	5	1	4.22	0.180	4.40	0.280	1.1	1.4
MAY											
29...	14	467	26	10	16	2.35	0.050	2.40	0.090	1.3	1.4
JUL											
22...	14	400	27	8	19	5.22	0.080	5.30	0.210	1.2	1.4
AUG											
20...	--	--	3	3	0	2.58	0.120	2.70	0.140	0.76	0.90

DATE	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
FEB											
25...	0.490	0.320	9.9	5	170	<0.5	1.0	<5	<3	<10	23
APR											
30...	1.10	1.00	8.6	--	--	--	--	--	--	--	--
MAY											
29...	0.770	0.710	9.1	8	110	<0.5	<1.0	<5	<3	<10	41
JUL											
22...	1.50	1.30	13	6	91	<0.5	<1.0	<5	<3	<10	17
AUG											
20...	1.10	0.920	9.6	--	--	--	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB											
25...	<10	16	110	<0.1	<10	<10	<1	<1.0	410	<6	21
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
29...	<10	15	84	<0.1	<10	<10	<1	<1.0	400	<6	13
JUL											
22...	10	15	110	<0.1	<10	<10	<1	<1.0	300	<6	32
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

08075770 HUNTING BAYOU AT INTERSTATE HIGHWAY 610, HOUSTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
FEB											
25...	<0.10	0.20	<0.20	<0.5	<0.2	<0.1	<0.10	<0.5	<0.50	<0.10	<0.1
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
29...	--	--	--	<0.5	--	--	--	<0.5	<0.50	--	--
JUL											
22...	--	--	--	<0.5	--	--	--	<0.5	<0.50	--	--
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

08075900 GREENS BAYOU NEAR U.S. HIGHWAY 75 NEAR HOUSTON, TX

LOCATION.--Lat 29°57'22", long 95°24'57", Harris County, Hydrologic Unit 12040104, on right bank at upstream side of bridge on Knobcrest Street, 600 ft downstream from U.S. Highway 75 access road bridge, 8.9 mi upstream from station 08076000, and 20.9 mi upstream from Halls Bayou.

DRAINAGE AREA.--36.6 mi². At former site: August 1965 to September 1973, 34.8 mi²; October 1973 to July 19, 1989, 36.1 mi².

PERIOD OF RECORD.--August 1965 to current year (discharge measurements and supplemental peak discharges only, Oct. 1, 1980, to Mar. 26, 1981). formerly published as "at U.S. Highway 75".

REVISED RECORDS.--WDR TX-76-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is at National Geodetic Vertical Datum of 1929, 1959 adjustment; unadjusted for land-surface subsidence. Prior to July 19, 1989, water-stage recorder at site 600 ft upstream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Stage discharge relationship is affected by seasonal vegetal growth during most years. Channel was rectified (widened and bed lowered about 2 ft) in 1980-81. Records furnished by Houston Lighting and Power Co. show that about 3,200 acre-ft of ground water was used for cooling purposes, then released to Greens Bayou about 8 mi upstream from this station during the current year. No known diversion above station. Several observations of water temperature were obtained during the year. Stage and rainfall radio-telemetry were operated by Harris County Flood Control District at station.

AVERAGE DISCHARGE.--25 years (water years 1966-80, 1982-1991), 38.0 ft³/s (27,530 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft³/s June 26, 1989 (elevation, 90.20 ft, from peak mark at former site); maximum elevation, 91.09 ft Feb. 21, 1969 at former site, occurred prior to 1980-81 channel rectification; minimum daily discharge, 0.16 ft³/s Oct. 21, 22, 1969.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Elevation (ft)	Date	Time	Discharge (ft³/s)	Elevation (ft)
Jan. 15	0130	2,060	78.36	Apr. 4	1800	2,360	78.92
Jan. 18	1230	2,630	79.39	Apr. 5	1630	3,530	80.81
Feb. 4	1500	2,130	78.51	Apr. 14	1600	*4,820	*82.53

Minimum daily discharge, 12 ft³/s on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	e12	12	e14	13	383	15	19	18	22	26	36
2	12	e12	12	e250	13	51	15	20	18	23	20	19
3	13	e20	12	300	13	27	15	19	21	19	18	58
4	109	e70	12	36	652	21	734	19	42	38	17	105
5	23	e40	14	18	187	19	e1000	31	21	23	17	84
6	13	e20	13	124	54	18	600	19	19	17	16	93
7	19	e14	22	37	29	17	e100	17	76	44	17	112
8	15	e80	14	16	22	16	e50	342	246	47	20	90
9	33	e230	13	275	20	16	e40	119	39	32	18	94
10	19	e30	13	555	21	17	e30	28	64	19	15	26
11	13	e20	13	92	18	17	e200	21	28	17	15	17
12	13	e16	13	28	17	17	131	19	22	17	16	17
13	12	e14	13	20	18	16	53	19	20	17	17	33
14	12	e12	12	117	18	16	1540	18	22	17	18	29
15	13	e12	12	629	17	28	628	27	211	16	105	17
16	12	e12	24	49	17	114	185	67	199	16	74	21
17	418	e12	17	23	19	76	83	68	272	17	21	28
18	e190	e12	30	860	18	22	62	25	74	17	42	47
19	e40	e12	17	183	92	19	38	49	201	17	116	30
20	30	e12	13	49	22	18	32	61	38	17	28	25
21	e100	e12	16	26	152	18	25	23	62	28	17	17
22	e40	e80	13	19	49	18	23	20	188	25	17	16
23	e20	e130	14	16	22	17	24	20	173	33	16	16
24	e16	e30	14	61	19	17	45	19	165	42	15	44
25	e14	e16	14	21	19	18	23	18	230	34	15	123
26	e16	e12	e60	15	21	17	22	17	152	19	15	24
27	e14	e12	e200	16	18	17	24	18	42	23	16	15
28	e12	25	e30	14	62	18	21	22	28	20	15	14
29	e12	14	e20	13	---	64	20	41	27	36	15	14
30	e12	12	e14	14	---	20	19	26	23	28	20	15
31	e12	---	e16	13	---	15	---	19	---	28	92	---
TOTAL	1289	1005	712	3903	1642	1167	5797	1250	2741	768	889	1279
MEAN	41.6	33.5	23.0	126	58.6	37.6	193	40.3	91.4	24.8	28.7	42.6
MAX	418	230	200	860	652	383	1540	342	272	47	116	123
MIN	12	12	12	13	13	15	15	17	18	16	15	14
AC-FT	2560	1990	1410	7740	3260	2310	11500	2480	5440	1520	1760	2540

CAL YR 1990	TOTAL	14250	MEAN	39.0	MAX	700	MIN	12	AC-FT	28260
WTR YR 1991	TOTAL	22442	MEAN	61.5	MAX	1540	MIN	12	AC-FT	44510

e Estimated

08076000 GREENS BAYOU NEAR HOUSTON, TX

LOCATION.--Lat 29°55'05", long 95°18'24", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of bridge on U.S. Highway 59 access road, 10.5 mi northeast of Houston, 12.0 mi upstream from Halls Bayou, and 23.4 mi upstream from mouth.

DRAINAGE AREA.--68.7 mi². October 1952 to Sept. 30, 1973, 72.7 mi²; Oct. 1, 1973 to Sept. 30, 1988, 69.6 mi². Basin boundary changes due to relocation of drainage ditches.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 0.66 ft below National Geodetic Vertical Datum of 1929, 1957 adjustment; unadjusted for land-surface subsidence.

REMARKS.-- Records good except those for estimated daily discharges, which are poor. Channel was rectified during water years 1974-75. No known diversion above station. Low flow is sustained by Houston Lighting and Power Co. effluent, (which is obtained from ground-water sources) and sewage effluent from Houston suburbs. Gage-height telemeter at station.

AVERAGE DISCHARGE.--39 years, 68.4 ft³/s (49,560 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft³/s June 27, 1989 (gage height, 66.04 ft); no flow at times during early years of station operation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft³/s (revised) and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 2	2330	2,500	56.35	Feb. 4	1700	2,610	56.67
Jan. 15	0300	2,580	56.69	Apr. 5	1800	*4,280	*59.42
Jan. 18	1430	3,160	58.15	Apr. 14	1830	4,220	59.33

Minimum daily discharge, 21 ft³/s Oct. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	32	e28	57	24	855	26	33	26	105	37	58
2	21	34	e28	786	23	131	28	43	25	55	31	43
3	33	43	e34	973	24	64	28	32	27	39	30	89
4	183	136	e35	224	1060	45	634	30	71	49	32	178
5	105	119	e38	80	499	39	2030	33	39	53	75	173
6	29	43	45	359	116	36	1150	36	28	31	33	273
7	34	32	94	220	62	33	272	28	36	28	31	299
8	39	147	51	59	42	31	121	510	285	79	34	181
9	119	632	41	447	36	28	71	246	70	51	32	111
10	52	73	41	1430	36	29	52	59	70	32	25	44
11	29	39	43	254	33	30	585	37	44	30	23	30
12	29	33	44	71	31	29	245	31	32	28	24	29
13	24	31	43	41	30	29	102	28	35	27	26	51
14	25	31	41	92	29	28	1620	28	107	26	38	59
15	26	32	38	1170	29	90	1040	153	805	26	322	29
16	26	33	49	128	27	212	238	123	318	26	112	71
17	472	33	67	53	32	176	145	114	639	27	35	72
18	554	33	74	1320	30	54	127	55	109	27	37	49
19	76	33	66	432	191	e41	75	75	237	27	307	44
20	48	33	44	110	46	e36	57	85	124	26	48	37
21	266	33	52	57	522	35	46	47	78	33	27	26
22	158	178	48	41	157	35	42	35	324	40	26	25
23	53	e368	43	34	54	33	34	33	546	61	24	24
24	39	e63	46	139	38	31	37	30	680	62	23	77
25	35	e35	46	52	40	32	37	28	459	50	23	273
26	33	e32	105	32	42	33	37	26	287	32	23	43
27	38	e31	552	32	36	32	37	25	80	29	24	27
28	34	e30	97	30	139	35	36	33	83	33	25	22
29	34	e29	54	27	---	140	35	57	53	31	24	22
30	34	28	49	29	---	42	33	54	40	54	24	24
31	33	---	65	26	---	30	---	31	---	35	154	---
TOTAL	2704	2449	2101	8805	3428	2494	9020	2178	5757	1252	1729	2483
MEAN	87.2	81.6	67.8	284	122	80.5	301	70.3	192	40.4	55.8	82.8
MAX	554	632	552	1430	1060	855	2030	510	805	105	322	299
MIN	21	28	28	26	23	28	26	25	25	26	23	22
AC-FT	5360	4860	4170	17460	6800	4950	17890	4320	11420	2480	3430	4930

CAL YR 1990	TOTAL	27748	MEAN	76.0	MAX	915	MIN	20	AC-FT	55040
WTR YR 1991	TOTAL	44400	MEAN	122	MAX	2030	MIN	21	AC-FT	88070

e Estimated

08076000 GREENS BAYOU NEAR HOUSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to current year. Pesticide analyses: February 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
FEB												
25...	0834	35	654	8.0	16.5	30	12	10.2	103	2.1	1100	150
APR												
30...	0805	34	846	8.3	23.5	12	20	7.5	88	5.8	3400	150
MAY												
29...	0815	38	777	8.2	28.0	25	22	6.0	76	3.3	520	620
JUL												
22...	0832	41	814	8.4	28.0	14	25	5.0	63	3.0	980	880
AUG												
20...	1156	38	368	7.7	30.0	37	23	7.0	92	2.5	580	200

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
FEB											
25...	160	0	51	7.7	72	2	5.4	200	25	71	0.30
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
29...	180	0	57	8.1	92	3	6.2	200	38	89	0.30
JUL											
22...	170	0	57	7.6	98	3	9.8	180	57	96	0.30
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
FEB											
25...	17	369	10	<1	--	3.60	0.200	3.80	0.230	0.87	1.1
APR											
30...	--	--	34	12	22	4.54	0.260	4.80	0.330	1.1	1.4
MAY											
29...	23	431	51	14	37	3.91	0.190	4.10	0.150	1.0	1.2
JUL											
22...	25	457	28	7	21	3.77	0.130	3.90	0.220	0.98	1.2
AUG											
20...	--	--	29	29	0	1.80	0.100	1.90	0.210	0.59	0.80

DATE	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
FEB											
25...	2.50	2.10	7.4	4	230	<0.5	2.0	<5	<3	<10	21
APR											
30...	2.50	2.40	5.2	--	--	--	--	--	--	--	--
MAY											
29...	2.40	2.50	6.2	7	250	<0.5	<1.0	6	<3	<10	11
JUL											
22...	3.00	2.80	7.1	7	280	<0.5	<1.0	<5	<3	<10	9
AUG											
20...	1.40	1.20	6.2	--	--	--	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB											
25...	<10	13	59	<0.1	<10	10	<1	<1.0	320	<6	17
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
29...	<10	17	9	<0.1	10	<10	<1	<1.0	370	7	31
JUL											
22...	<10	19	22	<0.1	<10	<10	1	2.0	390	7	13
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

08076000 GREENS BAYOU NEAR HOUSTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
FEB											
25...	<0.10	0.10	<0.20	<0.5	<0.2	<0.1	<0.10	<0.5	<0.50	<0.10	<0.1
APR											
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
29...	--	--	--	<0.5	--	--	--	<0.5	<0.50	--	--
JUL											
22...	--	--	--	<0.5	--	--	--	<0.5	<0.50	--	--
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--

08076180 GARNERS BAYOU NR HUMBLE, TX

LOCATION.--LAT 29°51'03", long 95°20'05", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of upstream bridge on Beltway 8, 0.2 mi downstream from Williams Gully, 1.2 mi upstream from Greens Bayou, and 4.5 mi southeast of Humble.

DRAINAGE AREA.--31.0 mi².

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

GAGE.--Water-stage recorder and crest stage gage. Datum of gage is National Geodetic Vertical Datum, 1978 adjustment, furnished by Harris County Flood Control District.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known diversion above station. Low flow is sustained by sewage effluent from Humble suburbs. Minor channel rectification made in 1988. Several measurements of water temperature were made during the year. Stage and rainfall radio-telemetry operated by Harris County Flood Control District are located at station.

AVERAGE DISCHARGE.--5 years (water years 1987-91), 43.6 ft³/s (31,590 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,030 ft³/s June 27, 1989 (elevation 56.77 ft); minimum daily, 3.0 ft³/s Sept. 28, 29, and Oct. 1, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Elevation (ft)	Date	Time	Discharge (ft³/s)	Elevation (ft)
Jan. 10	1500	1,260	48.01	Apr. 5	2100	1,810	51.23
Jan. 15	0600	921	45.71	Apr. 14	2000	1,380	48.76
Jan. 18	1700	1,480	49.32	June 15	1500	*2,610	*54.08
Feb. 4	1900	1,460	49.18				

Minimum daily discharge, 3.0 ft³/s Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	5.8	7.3	e7.0	7.8	344	8.7	24	10	18	10	13
2	4.3	5.7	7.4	e400	7.9	40	9.0	53	10	69	10	18
3	8.0	14	7.4	e300	8.0	e19	8.8	13	95	19	10	19
4	8.5	26	7.3	e30	523	e14	87	11	356	20	16	98
5	11	19	7.3	e13	417	12	735	9.9	40	18	68	79
6	7.6	8.0	7.6	e130	61	11	663	8.9	16	13	30	89
7	6.0	5.8	9.3	e40	20	10	128	8.3	15	12	27	21
8	4.7	23	8.2	14	15	9.6	43	131	53	25	35	53
9	16	266	7.6	86	12	9.2	19	92	14	18	12	70
10	11	17	7.6	824	10	9.0	16	15	16	12	11	13
11	6.4	9.6	7.6	159	9.7	10	156	11	12	13	11	9.6
12	5.9	7.6	6.6	20	9.2	9.8	54	9.8	10	15	12	9.1
13	5.9	6.8	6.9	14	8.5	9.2	22	9.1	12	11	11	e9.3
14	5.7	6.4	7.9	14	8.1	9.8	592	11	58	11	16	e11
15	5.7	6.1	8.2	456	8.2	14	482	154	1370	11	106	e9.0
16	5.8	6.7	8.8	39	8.3	62	100	277	628	11	26	e8.8
17	77	7.2	9.1	16	9.5	41	46	295	446	11	13	e9.0
18	84	7.3	10	639	9.3	14	83	67	105	11	18	e8.6
19	12	7.5	9.2	280	89	11	53	68	54	9.9	20	e8.6
20	8.1	7.7	8.3	41	14	11	63	44	24	9.8	11	e8.6
21	46	7.6	9.4	18	473	11	18	22	31	13	11	e8.0
22	34	22	11	15	158	9.9	15	18	95	20	11	7.2
23	11	54	e9.0	12	32	9.4	19	18	79	17	11	7.4
24	7.2	10	e9.0	41	18	9.4	13	14	71	21	11	9.8
25	6.7	8.0	e9.0	16	16	9.6	11	13	123	16	10	61
26	4.9	8.3	e40	11	15	9.5	11	11	134	12	10	11
27	4.9	7.7	e130	9.9	11	10	11	11	29	13	10	8.8
28	4.8	13	e12	9.6	40	10	11	11	37	23	9.8	7.3
29	4.6	8.1	e9.0	9.0	---	43	10	16	31	11	9.7	7.3
30	4.9	7.2	e8.0	9.2	---	11	9.0	20	15	10	9.5	8.4
31	6.0	---	e8.5	8.3	---	8.6	---	12	---	9.9	67	---
TOTAL	431.6	609.1	414.5	3681.0	2018.5	811.0	3496.5	1478.0	3989	503.6	643.0	700.8
MEAN	13.9	20.3	13.4	119	72.1	26.2	117	47.7	133	16.2	20.7	23.4
MAX	84	266	130	824	523	344	735	295	1370	69	106	98
MIN	3.0	5.7	6.6	7.0	7.8	8.6	8.7	8.3	10	9.8	9.5	7.2
AC-FT	856	1210	822	7300	4000	1610	6940	2930	7910	999	1280	1390

CAL YR 1990 TOTAL 8144.8 MEAN 22.3 MAX 558 MIN 3.0 AC-FT 16160
WTR YR 1991 TOTAL 18776.6 MEAN 51.4 MAX 1370 MIN 3.0 AC-FT 37240

e Estimated

08076500 HALLS BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°51'42", long 95°20'05", Harris County, Hydrologic Unit 12040104, on right bank, at downstream side of bridge on Jensen Drive in northeast section of Houston, and 11.0 mi upstream from mouth.

DRAINAGE AREA.--28.7 mi². Oct. 1, 1973, to Sept. 30, 1977, 28.3 mi². Oct. 1, 1977 to Sept. 30, 1988, 27.6 mi². Prior to Oct. 1, 1973, 24.7 mi². Changes were the result of drainage ditch extensions or relocations.

PERIOD OF RECORD.--October 1952 to current year.
Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1968 to September 1984.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 0.66 ft below National Geodetic Vertical Datum of 1929, 1957 adjustment; unadjusted for land-surface subsidence.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Stage discharge relationship is affected by seasonal vegetal growth during most years. There is no known diversion above station. Low flow is sustained by sewage effluent from Houston suburbs. Several measurements of water temperature were obtained during the year. Stage and rainfall radio-telemetry at station operated by Harris County Flood Control District.

AVERAGE DISCHARGE.--39 years, 29.9 ft³/s (21,660 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s June 27, 1989 (gage height, 62.86 ft, from peak mark); no flow at times prior to 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s (revised) and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 5	1730	*1,880	*57.94	May 15	2000	1,530	56.98

Minimum daily discharge, 4.8 ft³/s Nov. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	6.5	7.5	7.8	9.0	326	7.0	13	9.0	14	12	7.7
2	6.4	7.7	7.6	360	10	73	7.6	16	8.9	17	6.0	40
3	9.8	11	7.5	259	8.9	32	7.4	12	11	13	11	21
4	20	15	6.8	28	359	20	108	12	15	24	16	35
5	19	11	6.5	14	177	17	747	12	8.8	17	12	35
6	7.8	12	17	126	43	14	320	11	7.8	11	7.3	78
7	7.2	14	46	39	22	12	95	11	14	11	8.3	96
8	7.1	61	6.7	13	15	9.1	48	238	31	14	7.1	62
9	16	157	6.0	148	12	7.9	32	92	14	12	5.4	13
10	13	12	6.0	492	11	7.8	25	24	18	11	5.5	9.9
11	7.9	6.9	5.5	86	10	7.8	210	17	24	11	5.4	7.1
12	7.5	6.0	5.8	23	9.7	7.8	81	15	11	9.5	5.5	13
13	7.6	5.2	5.7	16	9.4	7.2	43	14	23	9.4	5.4	104
14	8.3	4.9	5.7	51	8.0	6.6	503	15	12	9.6	15	47
15	8.5	4.9	5.9	443	6.8	33	271	320	262	8.8	83	12
16	7.9	5.1	6.7	68	7.1	85	83	184	163	8.7	38	11
17	138	4.8	10	29	8.3	53	55	59	177	8.0	10	12
18	138	5.4	13	463	8.0	18	53	28	25	8.6	22	9.2
19	11	5.5	9.3	150	101	12	31	50	77	7.5	36	14
20	7.6	5.4	8.6	44	17	10	24	25	71	7.2	11	9.5
21	77	5.4	12	24	298	9.3	19	17	49	15	7.2	8.4
22	30	73	9.4	17	99	9.0	18	17	119	12	6.4	7.9
23	11	e93	9.7	14	40	7.8	16	15	236	14	6.8	8.2
24	8.4	e5.1	11	39	26	7.4	15	14	352	16	7.7	18
25	6.8	e5.0	11	19	25	7.5	15	12	181	12	5.7	67
26	6.4	e5.1	42	13	23	7.3	15	11	108	7.5	5.7	15
27	6.7	e4.9	115	13	17	7.7	14	11	44	6.9	5.7	9.0
28	7.6	e11	13	12	76	8.1	12	12	36	6.8	5.7	7.4
29	7.7	e7.5	8.3	11	---	47	13	35	26	9.4	5.6	7.8
30	8.5	e7.0	8.2	12	---	11	13	15	16	19	5.5	7.9
31	9.2	---	7.9	9.6	---	7.3	---	9.8	---	19	16	---
TOTAL	634.6	578.3	441.3	3043.4	1456.2	888.6	2901.0	1336.8	2149.5	369.9	399.9	793.0
MEAN	20.5	19.3	14.2	98.2	52.0	28.7	96.7	43.1	71.6	11.9	12.9	26.4
MAX	138	157	115	492	359	326	747	320	352	24	83	104
MIN	6.4	4.8	5.5	7.8	6.8	6.6	7.0	9.8	7.8	6.8	5.4	7.1
AC-FT	1260	1150	875	6040	2890	1760	5750	2650	4260	734	793	1570

CAL YR 1990	TOTAL	8666.7	MEAN	23.7	MAX	411	MIN	4.8	AC-FT	17190
WTR YR 1991	TOTAL	14992.5	MEAN	41.1	MAX	747	MIN	4.8	AC-FT	29740

e Estimated

08076700 GREENS BAYOU AT LEY ROAD, HOUSTON, TX

LOCATION.--Lat 29°50'13", long 95°13'59", Harris County, Hydrologic Unit 12040104, on right bank at downstream side of Ley Road Bridge in northeast Houston and 300 ft downstream from mouth of Halls Bayou.

DRAINAGE AREA.--182 mi².

PERIOD OF RECORD.--November 1962 to December 1964, May to September 1971 (discharge measurements only), October 1971 to Sept. 12, 1991.
Water-quality records:--Chemical, biochemical, and pesticide analyses: October 1970 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 2.13 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Discharges are published only for those periods when the peak discharge exceeds 2,000 ft³/s. Estimates for days affected by tides are made only during storm periods that produce peak discharges greater than 2,000 ft³/s. Stage and rainfall radio-telemetry at station is operated by Harris County Flood Control District.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,500 ft³/s June 27, 1989 (gage height, 39.40 ft, from peak mark); minimum not determined (affected by tides).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,200 ft³/s and maximum (*)

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 3	0100	5,520	21.57	Feb. 4	2300	5,490	21.53
Jan. 10	1600	5,260	21.10	Apr. 5	2230	*8,490	*26.31
Jan. 15	0700	5,270	21.12	Apr. 14	2330	7,080	24.28
Jan. 18	2000	6,170	22.76	June 15	1800	5,110	20.81

Minimum discharge not determined (affected by tides).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	2020	---	---	---	---	---	---
2	---	---	---	e1400	---	e560	---	---	---	---	---	---
3	---	---	---	e2800	---	e160	---	---	---	---	---	---
4	---	---	---	e400	1980	---	e700	---	---	---	---	---
5	---	---	---	e120	2660	---	4000	---	---	---	---	---
6	---	---	---	---	630	---	4540	---	---	---	---	---
7	---	---	---	---	e190	---	1080	---	---	---	---	---
8	---	e230	---	---	e85	---	e540	e635	---	---	---	---
9	---	1380	---	e497	---	---	e150	1010	---	---	---	---
10	---	e250	---	3950	---	---	e70	e180	---	---	---	---
11	---	e105	---	1320	---	---	1220	---	---	---	---	---
12	---	e65	---	330	---	---	970	---	---	---	---	---
13	---	---	---	e130	---	---	e300	---	---	---	---	---
14	---	---	---	e335	---	---	2490	---	---	---	---	---
15	---	---	---	3650	---	---	3890	e570	2660	---	---	---
16	---	---	---	655	---	---	e900	1420	1960	---	---	---
17	e485	---	---	e180	---	---	e300	926	1740	---	---	---
18	1150	---	---	2910	---	---	e165	e340	e580	---	---	---
19	e170	---	---	2280	---	---	---	e90	e663	---	---	---
20	e80	---	---	555	---	---	---	---	e299	---	---	---
21	---	---	---	e180	1900	---	---	---	e111	---	---	---
22	---	---	---	e110	1110	---	---	---	e345	---	---	---
23	---	---	---	---	e350	---	---	---	845	---	---	---
24	---	---	---	---	e125	---	---	---	1780	---	---	---
25	---	---	---	---	---	---	---	---	988	---	---	---
26	---	---	---	---	---	---	---	---	998	---	---	---
27	---	---	---	---	---	---	---	---	e300	---	---	---
28	---	---	---	---	e90	---	---	---	e110	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

08077000 CLEAR CREEK NEAR PEARLAND, TX

LOCATION.--Lat 29°35'50", long 95°17'11", Harris-Brazoria County line, Hydrologic Unit 12040204, on left bank at downstream side of bridge on State Highway 35, 0.7 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 1.2 mi upstream from Hickory Slough, 2.3 mi north of Pearland, and about 30 mi upstream from head of Clear Lake.

DRAINAGE AREA.--38.8 mi².

PERIOD OF RECORD.--July to October 1944, March to October 1946, April 1947 to December 1959, March 1963 to current year. Discharge for some high-water periods in 1944 and 1946 published in WSP 1392.

REVISED RECORDS.--WSP 1392: 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 26.58 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment; prior records unadjusted for land-surface subsidence. Prior to June 9, 1948, nonrecording gage, and June 9, 1948, to Apr. 22, 1952, water-stage recorder at same site and datum 5.80 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. During most years, the stage-discharge relationship is affected by seasonal vegetal growth. A small amount of the drainage area is currently irrigated with water from the Brazos River. Low flow from April to October is largely drainage from these irrigated areas. Many small diversions are made for irrigation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--40 years (water years 1948-59, 1964-91), 36.5 ft³/s (26,440 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft³/s Mar. 18, 1957; maximum gage height, 18.57 ft July 26, 1979; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 26, 1960, stage and discharge unknown, may have exceeded that of Mar. 18, 1957. Channel was rectified in 1933, 1952, 1968, and 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 15	0700	674	12.38	May 9	0100	1,100	16.39
Jan. 18	1900	711	12.76	June 17	0700	1,080	16.17
Feb. 4	2400	867	14.28	June 19	2100	836	13.99
Apr. 6	0100	*1,110	*16.44				

Minimum daily discharge, 0.42 ft³/s Nov. 30, Dec. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	.55	.42	.55	4.5	33	6.2	4.3	7.8	11	8.5	e4.5
2	1.2	.48	.48	24	4.4	34	5.6	4.2	6.1	8.9	8.2	e4.4
3	1.5	1.0	.52	222	4.0	21	5.5	4.1	5.6	9.2	7.6	5.3
4	1.4	1.4	.47	83	319	13	54	4.2	5.3	8.8	7.1	8.5
5	.96	1.1	.49	28	746	9.3	631	5.0	5.9	11	6.7	28
6	.76	.64	1.1	77	367	7.2	1050	4.5	5.7	13	6.5	87
7	.78	.55	2.1	91	119	5.9	741	19	40	17	6.3	46
8	.57	27	1.2	34	39	5.3	292	471	102	18	6.2	27
9	1.4	139	1.1	50	21	4.4	88	986	42	17	6.0	16
10	2.1	37	.65	432	13	4.0	59	434	142	12	5.6	9.7
11	1.8	14	1.2	428	8.9	4.3	94	145	54	11	5.5	8.8
12	1.7	4.7	.98	215	6.8	4.3	90	47	20	9.6	5.3	6.1
13	1.7	2.5	1.0	52	6.1	4.3	50	22	12	7.8	5.2	24
14	1.1	1.4	.87	29	5.6	4.0	191	13	15	7.5	5.0	24
15	1.8	.82	1.7	603	4.6	5.4	297	9.8	80	8.1	7.3	8.4
16	2.9	.68	1.5	428	4.5	22	127	13	280	8.1	9.5	4.9
17	8.3	.60	1.1	167	4.4	40	54	173	1020	8.9	15	5.4
18	14	.56	1.0	380	4.3	18	83	159	542	9.3	8.6	6.1
19	2.3	.56	1.5	517	5.3	11	38	172	774	8.0	9.2	28
20	1.4	.66	1.4	236	4.6	7.2	20	165	552	7.6	6.6	12
21	9.2	.69	2.2	70	365	5.6	12	126	175	7.9	5.6	e5.0
22	23	.58	2.0	28	369	5.3	8.7	50	85	18	5.5	e4.0
23	6.3	1.3	.85	16	149	5.0	7.3	25	83	20	5.4	e3.5
24	3.6	.88	.69	14	51	4.6	6.1	16	33	13	5.3	e3.1
25	2.2	.54	.69	12	29	4.5	5.2	12	44	50	5.2	e2.9
26	1.6	.48	9.2	9.2	24	4.2	5.0	12	43	39	e5.1	e2.7
27	1.2	.60	64	7.5	18	4.0	4.8	11	36	24	e5.0	e2.7
28	.88	.64	9.4	6.8	14	4.4	4.6	10	23	13	e4.9	e2.5
29	.65	.50	3.2	6.2	---	15	4.5	23	18	15	e4.8	e2.4
30	.60	.42	1.9	5.4	---	8.6	4.4	12	15	14	e4.7	e2.3
31	.60	---	.96	4.8	---	6.2	---	9.5	---	10	e4.6	---
TOTAL	98.90	241.83	115.87	4276.45	2711.0	325.0	4038.9	3161.6	4266.4	435.7	202.0	395.2
MEAN	3.19	8.06	3.74	138	96.8	10.5	135	102	142	14.1	6.52	13.2
MAX	23	139	64	603	746	40	1050	986	1020	50	15	87
MIN	.57	.42	.42	.55	4.0	4.0	4.4	4.1	5.3	7.5	4.6	2.3
AC-FT	196	480	230	8480	5380	645	8010	6270	8460	864	401	784

CAL YR 1990	TOTAL	5082.53	MEAN	13.9	MAX	264	MIN	.42	AC-FT	10080
WTR YR 1991	TOTAL	20268.85	MEAN	55.5	MAX	1050	MIN	.42	AC-FT	40200

e Estimated

08077650 MOSES LAKE-GALVESTON BAY NEAR TEXAS CITY, TX

LOCATION.--Lat 29°26'50", long 94°55'12", Galveston County, Hydrologic Unit 12040204, on right side of gate abutment of Texas City Flood Control Dike, one orifice located upstream and one downstream, at mouth of Moses Lake, and 4.5 mi north of Texas City.

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

GAGE.--Duplex water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by county engineer, Galveston County), 1978 adjustment. Prior to May 19, 1983, datum of gage was 0.49 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment. Prior records unadjusted for land-surface subsidence.

REMARKS.--Records good. Moses Lake is connected to Galveston Bay by gated opening through levee. These gates are open during periods of normal tide and are closed during periods of high tide and hurricane surge. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height (Moses Lake), 4.4 ft Sept. 20, 1979; minimum, -4.2 ft Feb. 28, 1983. Maximum elevation (Galveston Bay), about 10.0 ft (Hurricane Alicia) Aug. 18, 1983; minimum, about -4.2 ft Feb. 28, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum elevation (Moses Lake), 2.5 ft Sept. 5 at 1400 hours; minimum, -2.1 ft Dec. 24. Maximum elevation (Galveston Bay), 2.6 ft May 23 and June 8 at 0915 and 10000 hours respectively; minimum, -2.4 ft Dec. 24.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY
DAY	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN
1	1.1	.9	-.2	1.5	1.5	.3	2.1	2.0	.5	.7	.6	-.8
2	1.4	1.5	.3	1.8	1.9	.5	1.9	1.8	-.3	1.1	1.0	-.3
3	1.7	1.6	1.0	2.1	2.0	.6	1.8	1.7	-.8	1.2	1.0	-.6
4	1.5	1.2	.2	2.3	2.2	.4	.4	.1	-1.6	.9	.7	-.2
5	1.1	1.1	-.1	1.0	.8	-1.8	.9	1.0	-.4	1.1	---	---
6	1.4	1.3	.0	1.2	1.2	.0	1.3	1.2	-.1	1.2	---	---
7	1.7	1.6	.0	1.7	1.6	-.2	1.1	1.1	-1.1	.6	---	---
8	1.5	1.5	-.1	1.9	2.0	.7	.3	.2	-.3	.6	---	---
9	1.8	1.8	-.6	2.0	2.1	-1.9	.5	.4	-.2	1.6	---	---
10	.0	-.2	-1.3	-.2	-.3	-1.4	.5	.4	-.3	1.6	---	.6
11	.9	.9	-.6	.5	.4	-.3	.5	.5	-.7	1.3	---	---
12	1.1	1.0	-.7	.7	.6	.0	.9	.9	-.3	.7	---	---
13	.7	.6	-.4	.5	.5	-.8	.9	.8	-.7	.5	---	---
14	---	.8	-.1	.9	1.0	-.4	.7	.7	-.7	1.5	---	---
15	---	.7	.1	1.2	1.3	.1	.8	.7	-.8	2.4	---	---
16	---	1.0	.4	1.4	1.3	-.3	.9	.8	-.4	.9	---	-1.3
17	---	1.5	.5	1.2	1.2	-.4	1.0	1.0	-.6	.7	---	---
18	---	1.1	-.8	1.4	1.5	.0	1.3	1.3	-.8	2.2	---	---
19	---	1.4	.2	1.8	1.7	.1	.9	.9	-.5	1.8	---	-.4
20	---	1.7	.6	1.7	1.6	.1	1.3	1.2	.0	.6	.3	-.6
21	---	1.8	.1	1.8	1.7	.4	1.3	1.2	-.1	.0	.0	-.9
22	---	.9	-.6	1.8	1.7	.3	1.0	.9	-.8	.5	.6	-.8
23	---	1.0	-.2	1.6	1.5	-.1	.1	.0	-2.0	1.0	1.3	-.5
24	---	1.2	-.2	1.4	1.3	.4	-.7	-.2	-2.4	1.3	1.3	-.1
25	---	.8	-.7	1.4	1.4	.5	.9	.8	-.2	.7	1.0	-.6
26	---	.9	-.1	1.4	1.4	1.0	1.9	1.9	.3	1.0	1.1	-.4
27	1.2	1.0	-.1	1.7	1.7	1.3	2.1	2.0	.2	1.2	1.4	-.3
28	.8	.7	-.3	1.7	1.5	.2	.8	1.0	-.8	1.4	1.4	-.4
29	.8	.8	.0	1.5	1.2	-.4	1.1	1.1	-.4	1.2	1.2	-.3
30	1.1	1.0	.5	1.5	1.8	.2	1.2	1.0	-.7	1.3	1.4	-.6
31	.9	.8	.1	---	---	---	.2	.2	-1.6	.0	.3	-.8
MONTH	---	1.8	-1.3	1.4	2.2	-1.9	1.0	2.0	-2.4	1.1	---	---

08077650 MOSES LAKE-GALVESTON BAY NEAR TEXAS CITY, TX--Continued

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

	FEBRUARY			MARCH			APRIL			MAY		
	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY
DAY	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN
1	.7	.6	-.1	1.4	1.6	.2	.2	.2	-1.1	1.7	1.7	.4
2	.8	---	---	.7	.6	.2	1.0	1.0	-.6	1.7	1.8	.6
3	.7	---	.4	.3	.2	-1.5	1.1	1.0	.1	1.6	2.0	.5
4	1.3	---	---	.1	.2	-1.7	1.3	1.4	.0	1.7	1.9	.4
5	1.2	.9	.0	.1	.1	-.6	1.8	1.7	.0	1.5	1.4	.4
6	.6	.5	-.4	.1	.0	-.8	1.5	1.3	.2	1.0	1.0	-.4
7	.4	.3	-1.0	.4	.4	-.8	1.3	1.3	-.2	1.6	1.7	.4
8	.2	.3	-1.1	.5	.5	-.9	1.2	1.2	.1	1.5	1.6	.8
9	.3	.3	-1.1	.5	.5	-.7	1.1	1.0	.1	1.2	1.2	.7
10	.2	.3	-1.1	.5	.6	-1.0	1.0	1.0	-.1	1.5	1.5	.7
11	.1	.1	-1.2	.7	.7	-.5	1.5	1.5	.9	1.4	1.4	.3
12	.2	.2	-1.1	.8	.8	-.5	1.7	1.6	1.1	1.3	1.3	.0
13	.5	.5	-.8	.5	.5	-1.0	1.8	2.1	1.1	1.3	1.4	-.1
14	.3	.3	-1.1	.0	.2	-.9	1.8	1.8	.6	1.7	1.7	-.3
15	.0	.0	-1.6	1.4	1.3	.3	1.6	1.5	.2	2.0	2.1	.1
16	.7	.8	-.8	2.1	2.0	1.0	1.8	1.8	.4	1.7	2.2	.5
17	1.1	1.1	.0	2.0	1.9	.2	1.6	1.6	.3	1.8	1.8	.2
18	.8	.8	.0	.6	.6	-.3	1.5	1.6	-.2	2.0	2.2	.4
19	.7	.7	-.3	1.1	1.1	-.3	1.4	1.5	.0	1.9	2.1	.7
20	.5	.5	-1.0	1.4	1.4	.2	1.0	.9	-.4	2.0	1.9	1.2
21	1.0	1.0	-.6	1.3	1.3	-.3	1.3	1.4	-.3	1.9	1.7	.9
22	.5	.2	-1.6	1.3	1.4	.0	1.4	1.4	.3	1.9	2.0	1.3
23	-.3	.0	-2.0	1.0	.7	-.7	1.1	1.1	-.1	1.9	2.6	1.4
24	.3	.4	-1.1	.6	.7	-.8	1.1	1.0	.4	1.8	2.2	1.1
25	.4	.4	-1.0	.8	.8	-.4	1.4	1.4	.7	2.0	2.1	.5
26	.0	.1	-1.5	1.0	1.0	.1	1.4	1.4	.6	1.8	1.7	.3
27	.3	.3	-.9	1.1	1.1	.3	2.1	2.2	1.0	1.7	1.5	.2
28	.9	.9	.0	.8	.8	.2	2.1	2.1	1.0	1.8	1.7	.1
29	---	---	---	.8	.8	-1.2	1.7	1.7	.6	1.8	1.8	.3
30	---	---	---	.6	.6	-1.2	1.8	1.8	.4	2.0	1.9	.1
31	---	---	---	.5	.3	-.8	---	---	---	1.8	2.0	.6
MONTH	.5	---	---	.8	2.0	-1.7	1.4	2.2	-1.1	1.7	2.6	-.4

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

	JUNE			JULY			AUGUST			SEPTEMBER		
	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY
DAY	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN
1	1.8	1.9	.5	.9	.8	-.3	.6	.5	.1	1.5	1.4	-.1
2	1.7	1.6	.5	.8	.8	-.3	.8	.7	-.3	1.5	1.4	-.1
3	1.4	1.3	.3	.7	.6	.0	.9	.8	-.5	1.7	1.6	.3
4	1.0	.9	.0	.6	.5	-.2	.9	.8	-.7	1.9	2.1	.5
5	.6	.5	.0	.9	.7	-.1	.9	.9	-.7	2.5	2.3	.3
6	.5	.4	.0	1.0	1.0	-.3	.9	.8	-.6	2.0	2.0	.6
7	1.4	1.4	.2	1.1	1.2	-.5	1.1	1.0	-.6	1.6	1.5	.4
8	2.2	2.6	1.0	1.1	1.1	-.6	1.0	.9	-.7	1.3	1.2	.3
9	2.1	2.5	1.1	1.0	.9	-.8	.8	.7	-.7	1.3	1.2	.5
10	1.8	2.2	.3	1.0	1.0	-.8	.5	.4	-.7	1.6	1.6	1.0
11	1.4	1.9	.2	1.0	.9	-.7	.2	.5	-.6	1.8	1.7	.5
12	1.7	1.7	.0	.8	.7	-.7	.2	.1	-.6	1.8	1.6	.4
13	1.6	1.5	-.2	.7	.5	-.7	.3	.2	-.4	1.7	1.6	.3
14	1.7	1.6	-.1	.4	.3	-.7	.8	.7	-.2	1.8	1.7	.2
15	1.5	1.5	.0	.3	.1	-.6	1.1	1.1	-.4	1.8	1.7	.2
16	1.2	1.5	-.1	.2	.2	-.5	.9	.7	-.4	1.6	1.5	.1
17	.9	.8	.0	.2	.1	-.4	1.0	.9	-.5	1.3	1.2	.0
18	.6	1.0	-.3	.5	.4	-.7	.8	.7	-.9	1.4	1.3	.2
19	.8	.6	-.1	.5	.5	-.8	.5	.4	-1.0	1.5	1.4	.1
20	.7	.6	-.4	.7	.6	-.5	.5	.4	-.9	1.4	1.2	.0
21	.7	.6	-.5	1.0	.9	-.4	.7	.6	-.7	1.5	1.3	.5
22	.8	.7	-.8	1.0	1.0	-.4	.7	.6	-.7	1.5	1.3	.6
23	.7	.6	-.7	1.0	1.0	-.6	.9	.8	-.4	1.3	1.2	.6
24	.8	.7	-.8	.8	.7	-.7	.8	.6	-.1	1.3	1.2	.5
25	.7	.6	-1.0	.8	.7	-.5	.7	.5	-.2	1.2	1.1	-.7
26	.8	.7	-1.0	.7	.6	-.6	.7	.5	-.2	.7	.7	-.3
27	.9	.7	-.7	.7	.5	-.6	.9	.8	.2	1.2	1.0	-.1
28	1.2	1.2	-.5	.5	.4	-.6	1.0	.8	-.2	1.5	1.3	.0
29	1.4	1.3	-.2	.2	.1	-.7	.8	.6	-.2	1.7	1.6	.2
30	1.2	1.0	.1	.2	.0	-.6	.8	.7	-.3	1.8	1.7	.3
31	---	---	---	.3	.4	-.1	1.1	1.2	.0	---	---	---
MONTH	1.2	2.6	-1.0	.7	1.2	-.8	.8	1.2	-1.0	1.6	2.3	-.7

08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX

LOCATION.--Lat 29°20'44", long 94°57'47", Galveston County, Hydrologic Unit 12040204, in the LaMarque Levee pumping station on the LaMarque hurricane protection levee, one orifice located landward and one seaward, 0.5 mi southwest of Interstate Highway 45, 0.9 mi south of LaMarque, 4.8 mi northwest of Virginia Point. Supplementary gage (station 08077752): Lat 29°20'26", long 94°51'00", 4,000 ft southeast along LaMarque Levee from LaMarque Levee Pumping Station.

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

GAGE.--Data loggers and pressure transducers. Datum of gages are National Geodetic Vertical Datum, 1978 adjustment (levels by Galveston County Engineer).

REMARKS.--Records fair. Landward orifice records elevation of flood runoff behind levee. This runoff is pumped into Jones Bay. Only maximum landward elevations equal or exceeding, -3.0 ft are shown. Seaward records are tidal but influenced by runoff in Highlands Bayou. Telemeter and rain gage located at station. Supplementary gage: Landward orifice records elevation of flood runoff behind levee. Seaward records are equivalent to seaward records at primary station. A channel connects site to pumping station. Water will be pumped, or drained by gravity, into Jones Bay depending on elevation of seaward water-surface. Only elevations equal or exceeding -2.0 ft are shown. Telemeter and barometer at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation (landward) 3.5 ft July 26, 1989; maximum elevation (seaward) 3.6 ft Oct. 15, 1989; minimum (seaward), -2.0 ft Apr. 11, 1988. Supplementary gage: Maximum elevation (landward) 2.0 ft Jan. 15, 1991; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Maximum elevation (landward), 2.3 ft Jan. 15, 1991 at 0045 hours; maximum elevation (seaward), 2.9 ft Jan. 15, 1991 at 0330 hours and May 23, 1991 at 1245 hours: minimum (seaward), -1.7 ft Dec. 24 at 1000 hours.
Supplemental gage: Maximum elevation (landward), 2.0 ft Jan. 15 at 0245 hours; minimum not determined.

ELEVATION (FEET, NGVD), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

	OCTOBER				NOVEMBER				DECEMBER			
	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY
DAY	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX
1	---	1.3	.3	---	---	1.8	.6	---	---	2.3	1.0	---
2	---	1.7	.7	---	---	2.3	1.0	---	---	2.0	.5	---
3	---	2.0	1.4	---	---	2.4	1.2	---	---	2.0	.0	---
4	---	1.5	.7	---	---	2.5	1.0	---	---	.6	-.7	---
5	---	1.4	.4	---	---	1.3	-.6	---	---	1.3	.2	---
6	---	1.7	.7	---	---	1.5	.5	---	---	1.4	.4	---
7	---	1.9	.7	---	---	1.8	.6	---	---	1.3	-.3	---
8	---	1.7	.6	---	---	2.4	1.4	---	---	.6	.2	---
9	---	2.1	-.4	---	---	2.4	-.5	---	---	.7	.2	---
10	---	.4	-.5	---	---	.1	-.5	---	---	.6	.1	---
11	---	1.2	.0	---	---	.7	.1	---	---	.8	-.2	---
12	---	1.3	.0	---	---	.9	.3	---	---	1.1	.2	---
13	---	.9	.2	---	---	.8	-.2	---	---	1.0	-.1	---
14	---	1.1	.3	---	---	1.3	.1	---	---	1.0	.0	---
15	---	1.1	.4	---	---	1.5	.7	---	---	1.0	-.1	---
16	---	1.3	.7	---	---	1.5	.3	---	---	1.2	.2	---
17	---	1.7	.9	---	---	1.4	.2	---	---	1.5	.2	---
18	---	1.3	-.1	---	---	1.8	.6	---	---	1.5	-.1	---
19	---	1.8	.7	---	---	2.0	.8	---	---	1.1	.1	---
20	---	2.1	1.1	---	---	1.8	.7	---	---	1.5	.6	---
21	---	2.1	.7	---	---	2.0	.9	---	---	1.4	.7	---
22	---	1.4	.1	---	---	1.9	.8	---	---	1.1	-.3	---
23	---	1.3	.4	---	---	1.7	.5	---	---	.4	-1.2	---
24	---	1.5	.3	---	---	1.5	.8	---	---	.1	-1.7	---
25	---	1.1	.0	---	---	1.6	.8	---	---	1.2	.1	---
26	---	1.2	.3	---	---	1.7	1.3	---	---	2.2	.8	---
27	---	1.3	.3	---	---	2.1	1.5	---	-2.0	2.1	.8	-1.8
28	---	1.0	.2	---	---	1.8	.7	---	---	1.3	-.2	---
29	---	1.1	.4	---	---	1.4	.3	---	---	1.4	.2	---
30	---	1.3	.9	---	---	2.2	.7	---	---	1.3	-.3	---
31	---	1.2	.5	---	---	---	---	---	---	.6	-.7	---
MONTH	---	2.1	-.5	---	---	2.5	-.6	---	---	2.3	-1.7	---

08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX--Continued

ELEVATION (FEET, NGVD), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

	JANUARY				FEBRUARY				MARCH			
	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY
DAY	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX
1	---	1.0	-.2	---	---	1.0	.3	---	---	1.9	.8	---
2	---	1.4	.2	---	---	1.1	.6	---	---	1.1	.4	---
3	---	1.3	-.1	---	---	.9	.6	---	---	.4	-1.0	---
4	---	1.0	.2	---	-1.0	1.8	.3	-.1	---	.4	-1.1	---
5	---	1.5	.9	---	-2.1	1.5	.5	-1.3	---	.5	-.3	---
6	---	1.5	.5	---	---	.8	.0	---	---	.3	-.3	---
7	---	.6	-.2	---	---	.5	-.4	---	---	.6	-.6	---
8	---	1.0	.0	---	---	.6	-.5	---	---	.8	-.4	---
9	.0	1.9	.6	.2	---	.5	-.5	---	---	.9	-.2	---
10	-1.8	1.9	1.1	-1.0	---	.5	-.5	---	---	1.0	-.3	---
11	-2.7	1.3	.1	---	---	.4	-.6	---	---	1.1	.3	---
12	---	.7	-.7	---	---	.6	-.4	---	---	1.0	.1	---
13	---	.9	-.3	---	---	.9	.0	---	---	.6	-.4	---
14	1.2	2.4	.4	-.2	---	.4	-.6	---	---	.5	-.5	---
15	2.3	2.9	.6	2.0	---	.1	-.9	---	---	1.6	.5	---
16	---	.6	-.5	-1.8	---	1.3	-.4	---	---	2.4	1.4	---
17	---	1.1	.1	---	---	1.5	.7	---	---	2.4	.8	---
18	-1.7	2.2	1.2	-.5	---	1.2	.5	---	---	.9	.3	---
19	---	2.1	.5	---	---	.9	.3	---	---	1.4	.2	---
20	---	.7	-.4	---	---	.8	-.4	---	---	1.8	.6	---
21	---	.3	-.8	---	-1.9	1.4	.3	-1.7	---	1.6	.4	---
22	---	.8	-.4	---	---	.8	-1.0	---	---	1.6	.7	---
23	---	1.6	-.1	---	---	.3	-1.3	---	---	1.1	.1	---
24	---	1.6	.5	---	---	.7	-.5	---	---	1.0	-.2	---
25	---	1.3	-.1	---	-2.9	.7	-.4	---	---	1.2	.1	---
26	---	1.4	.1	---	---	.4	-.7	---	---	1.4	.7	---
27	---	1.7	.3	---	---	.6	-.3	---	---	1.6	.9	---
28	---	1.7	.3	---	---	1.5	.4	---	---	1.3	.7	---
29	---	1.5	.3	---	---	---	---	---	---	1.0	-.6	---
30	---	1.5	-.1	---	---	---	---	---	---	.9	-.7	---
31	---	.6	-.4	---	---	---	---	---	---	.8	.0	---
MONTH	---	2.9	-.8	---	---	1.8	-1.3	---	---	2.4	-1.1	---

ELEVATION (FEET, NGVD), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

	APRIL				MAY				JUNE			
	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY
DAY	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX
1	---	.5	-.4	---	---	2.0	1.0	---	---	2.1	1.2	---
2	---	1.4	-.1	---	---	2.1	1.2	---	---	1.9	1.1	---
3	---	1.4	.5	---	---	2.3	1.1	---	---	1.6	.7	---
4	---	1.5	.5	---	---	2.1	1.0	---	---	1.2	.6	---
5	.3	2.5	.4	.1	---	1.7	.7	---	---	.8	.3	---
6	---	1.8	.9	---	---	1.3	.1	---	---	.7	.2	---
7	---	1.6	.5	---	---	1.9	.9	---	---	1.7	.4	---
8	---	1.3	.6	---	---	1.8	1.2	---	---	2.8	1.5	---
9	---	1.1	.5	---	---	1.5	1.1	---	-2.5	2.8	1.5	---
10	---	1.2	.3	---	---	1.8	1.1	---	---	2.6	1.0	---
11	---	1.7	1.3	---	---	1.7	.9	---	---	2.1	.9	---
12	---	1.9	1.4	---	---	1.7	.5	---	-2.7	2.0	.6	---
13	---	2.2	1.4	--	---	1.7	.5	---	---	1.7	.6	---
14	---	2.1	.9	---	---	2.0	.5	---	---	1.9	.6	---
15	---	1.8	.7	---	---	2.0	.8	---	---	1.7	.7	---
16	---	2.0	1.0	---	---	2.3	1.2	---	---	1.4	.4	---
17	---	2.0	.8	---	---	2.1	.8	---	---	1.3	.6	---
18	---	1.9	.5	---	-1.4	2.2	1.1	-1.9	---	.9	.3	---
19	---	1.6	.4	---	-.9	2.4	1.3	-1.7	---	1.0	.3	---
20	---	1.1	.0	---	-2.9	2.3	1.8	---	---	.9	.1	---
21	---	1.7	.2	---	---	2.0	1.4	---	---	.9	.1	---
22	---	1.6	.8	---	---	2.2	1.7	---	-2.9	1.0	.0	---
23	---	1.2	.5	---	---	2.9	1.9	---	-2.9	.9	.0	---
24	---	1.3	.8	---	---	2.4	1.5	---	---	.9	-.1	---
25	---	1.7	1.0	---	---	2.3	1.1	---	---	.9	-.3	---
26	---	1.8	1.1	---	---	1.9	.9	---	---	1.0	-.3	---
27	---	2.3	1.4	---	---	1.8	.7	---	---	1.0	-.1	---
28	---	2.3	1.5	---	---	2.0	.7	---	---	1.5	.1	---
29	---	1.9	1.1	---	---	2.1	.9	---	---	1.7	.2	---
30	---	2.1	.9	---	---	2.1	.9	---	---	1.4	.6	---
31	---	---	---	---	---	2.2	1.2	---	---	---	---	---
MONTH	---	2.5	-.4	---	---	2.9	.1	---	---	2.8	-.3	---

08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX--Continued

ELEVATION (FEET, NGVD), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

	JULY				AUGUST				SEPTEMBER			
	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY	LAND-WARD	SEA-WARD	SEA-WARD	SUPPLE-MENTARY
DAY	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX
1	---	1.0	.2	---	---	.8	.4	---	-2.1	1.6	.5	---
2	---	1.0	.2	---	---	.9	.2	---	-2.8	1.5	.5	---
3	---	.9	.3	---	---	1.0	.1	---	-2.8	1.8	.7	---
4	---	.7	.3	---	---	.9	.0	---	-1.6	2.3	.8	-1.5
5	---	1.0	.3	---	---	1.1	-.1	---	-2.0	2.4	1.2	-.9
6	---	1.3	.3	---	---	1.1	-.1	---	-1.5	2.3	1.2	-1.5
7	---	1.4	.1	---	---	1.3	.0	---	---	1.8	1.0	---
8	---	1.4	.1	---	---	1.2	.0	---	---	1.5	.8	---
9	---	1.2	.0	---	---	1.1	.0	---	---	1.5	.8	---
10	---	1.2	-.1	---	---	.7	-.1	---	---	1.9	1.2	---
11	---	1.1	.0	---	---	.5	-.2	---	---	1.8	.9	---
12	---	1.0	-.1	---	---	.4	-.1	---	---	1.8	.9	---
13	---	.8	-.1	---	---	.6	.0	---	---	1.7	.8	---
14	---	.7	-.2	---	---	.9	.2	---	---	1.9	.8	---
15	---	.4	-.2	---	---	1.3	.2	---	---	1.9	.7	---
16	---	.7	-.1	---	---	.9	.1	---	---	1.7	.6	---
17	---	.5	.0	---	---	1.1	.1	---	---	1.4	.5	---
18	---	.6	-.1	---	---	.9	-.2	---	---	1.5	.6	---
19	---	.6	-.2	---	---	.6	-.4	---	---	1.4	.5	---
20	---	.9	-.1	---	---	.7	-.4	---	---	1.5	.6	---
21	---	1.1	.1	---	---	.8	-.2	---	---	1.8	1.0	---
22	---	1.2	.1	---	---	.9	-.1	---	---	1.7	1.0	---
23	---	1.1	.1	---	---	1.1	.0	---	---	1.5	.9	---
24	---	1.0	-.1	---	---	1.0	.3	---	---	1.5	.9	---
25	---	.9	.0	---	---	.9	.1	---	---	1.1	.0	---
26	---	.9	-.2	---	---	.9	.1	---	---	1.1	.2	---
27	---	.9	-.1	---	---	1.1	.4	---	---	1.3	.4	---
28	---	.7	-.1	---	---	.9	.2	---	---	1.6	.6	---
29	---	.4	-.3	---	---	.9	.2	---	---	1.8	.8	---
30	---	.4	-.3	---	---	.9	.2	---	---	2.0	.8	---
31	---	.6	.0	---	---	1.3	.5	---	---	---	---	---
MONTH	---	1.4	-.3	---	---	1.3	-.4	---	---	2.4	.0	---

WTR YR 1991 LANDWARD --- SEAWARD (MAX) 2.9 SEAWARD (MIN) -1.7 SUPPLEMENTARY ---

08078000 CHOCOLATE BAYOU NEAR ALVIN, TX

LOCATION.--Lat 29°22'09", long 95°19'14", Brazoria County, Hydrologic Unit 12040204, on right bank 800 ft downstream from bridge on Farm Road 1462, 5.9 mi southwest of Alvin, and 6.9 mi upstream from State Highway 35.

DRAINAGE AREA.--87.7 mi². During extreme flooding, overflow from about 11 mi² of the Mustang Bayou drainage basin enters the Chocolate Bayou basin upstream from gage.

PERIOD OF RECORD.--August to October 1944 and March to December 1946 (low-water records during irrigation season), January 1947 to February 1958, March 1958 to February 1959 (discharge measurements only), March 1959 to current year. Water-quality records.--Chemical and biochemical analyses: May 1971 to September 1985. Pesticide analyses: May 1971 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 0.31 ft above National Geodetic Vertical Datum of 1929. Prior to May 3, 1959, nonrecording gage or water-stage recorders located at various sites from 900 to 1,400 ft upstream and at datum 3.00 ft higher. May 3, 1959, to Sept. 30, 1987, present site, at datum 10.00 ft higher.

REMARKS.--Records poor, including those of estimated daily discharges. Stage-discharge relationship is affected by seasonal vegetal growth during most years. Large area of riceland above station is irrigated with water diverted from the Brazos River. Low flow from April to October is largely drainage from these irrigated lands. Diversions for irrigation occur above station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--42 years (water years 1948-57, 1960-91), 106 ft³/s (76,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,500 ft³/s July 26, 1979 (gage height, 33.88 ft); no flow at times. Flood of Oct. 8, 1949, reached a stage of 31.45 ft, present site and datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 14, 1939, reached a stage of 32.5 ft, present site and datum, adjusted from floodmark 1,700 ft to right and 550 ft upstream from present gage, on basis of slope of flood of Oct. 8, 1949, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 15	1000	1,480	23.16	Apr. 6	1800	*3,320	*29.26
Jan. 19	0700	1,720	24.54	May 9	2200	2,270	26.97
Feb. 5	1400	2,250	26.89	June 20	0100	1,700	24.40
Feb. 21	2200	1,510	23.35				

Minimum daily discharge, 0.46 ft³/s Nov. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	e.56	1.7	4.4	9.2	98	7.1	5.6	19	49	49	77
2	1.6	e.56	1.7	4.5	8.3	124	7.4	6.9	17	48	38	52
3	.95	.77	1.3	23	7.6	53	7.6	12	24	48	45	42
4	1.3	.88	e.90	34	600	30	7.3	16	23	48	49	51
5	1.7	1.0	e.80	27	2140	21	1040	31	25	50	43	341
6	1.6	e.90	e.70	22	1270	15	3070	38	24	63	42	715
7	1.5	1.0	e.70	83	224	13	2810	20	31	56	35	607
8	1.5	1.5	e.70	64	78	11	1060	514	64	66	37	194
9	1.2	21	e.60	51	46	10	194	2110	119	58	57	76
10	1.1	29	e.50	479	31	8.4	136	1980	315	46	52	42
11	1.2	23	e.50	585	24	7.6	181	796	196	48	49	25
12	2.7	13	e.50	111	18	7.1	110	173	89	38	39	18
13	2.5	6.8	e.50	49	14	6.8	68	67	51	37	38	23
14	2.0	4.0	e.50	45	12	6.7	101	37	138	38	52	33
15	1.4	3.3	e.50	1280	9.8	6.4	630	25	405	44	81	32
16	.88	2.3	e.50	539	7.9	8.9	249	25	795	38	63	33
17	.79	1.7	e.50	108	7.5	21	81	234	970	42	49	30
18	.72	1.2	e.50	688	7.1	26	51	417	521	49	41	128
19	.46	1.7	e.50	1610	7.1	18	35	721	1340	45	32	71
20	.47	2.1	e.50	598	6.7	12	25	555	1340	46	29	45
21	.83	e1.8	e.50	120	807	8.7	16	501	376	44	26	35
22	.94	e1.6	e.50	52	1120	7.8	12	209	159	60	31	32
23	.89	e1.5	e.50	33	307	7.1	11	109	172	82	34	50
24	.55	e1.4	e.50	34	97	6.2	8.8	56	92	73	33	90
25	.57	e1.4	e.50	39	53	5.8	9.5	37	85	54	24	48
26	.67	e1.7	2.1	27	45	5.7	15	30	139	50	27	33
27	.76	2.1	17	19	36	5.6	14	22	74	58	26	26
28	e.70	2.5	22	17	28	5.6	14	20	60	62	27	21
29	e.63	2.1	16	15	---	7.3	8.6	22	97	65	31	20
30	e.60	1.9	10	14	---	6.8	7.0	35	70	62	37	20
31	e.58	---	6.3	9.9	---	6.8	---	26	---	67	67	---
TOTAL	35.09	134.27	90.50	6784.8	7021.2	577.3	9986.3	8850.5	7830	1634	1283	3010
MEAN	1.13	4.48	2.92	219	251	18.6	333	285	261	52.7	41.4	100
MAX	2.7	29	22	1610	2140	124	3070	2110	1340	82	81	715
MIN	.46	.56	.50	4.4	6.7	5.6	7.0	5.6	17	37	24	18
AC-FT	70	266	180	13460	13930	1150	19810	17550	15530	3240	2540	5970

CAL YR 1990 TOTAL 17470.74 MEAN 47.9 MAX 2530 MIN .46 AC-FT 34650
WTR YR 1991 TOTAL 47236.96 MEAN 129 MAX 3070 MIN .46 AC-FT 93690

e Estimated

08079575 NORTH FORK DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR POST, TX

LOCATION (REVISED).--Lat 33°14'55", long 101°20'17", Garza County, Hydrologic Unit 12050003, at left downstream end of bridge on Farm Road 651, and 4.4 mi northeast of Post.

DRAINAGE AREA.--438 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,440 ft above National Geodetic Vertical Datum of 1929, from topographic map. Mar. 10, 1988, to Feb. 12, 1990, nonrecording gage at same site and datum. Prior to Mar. 10, 1988, water-stage recorder at same site and datum.

REMARKS.--Records good except those for estimated daily discharges and those above 100 ft^3/s, which are fair. No known diversion above station.

AVERAGE DISCHARGE.--8 years, 30.2 ft^3/s (21,880 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,500 ft^3/s Oct. 2, 1986 (gage height, 9.10 ft, from floodmarks), on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sept. 18	1000	*3,150	*8.58	No other peak greater than base discharge.			

Minimum daily discharge, no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.67	1.6	4.5	13	8.6	7.7	3.4	.00	1.9	2.7	7.1	1.8
2	5.1	1.6	4.4	9.7	8.5	7.2	3.0	.02	232	1.9	7.1	1.4
3	14	13	4.3	10	8.5	8.6	2.6	.02	149	1.4	7.4	10
4	46	7.9	5.8	13	9.0	7.2	3.4	.00	18	1.0	5.9	60
5	65	4.9	6.5	14	e10	6.0	3.6	3.3	64	.36	40	82
6	24	6.2	5.8	13	e12	6.1	3.0	9.8	118	.05	5.3	30
7	14	10	5.7	15	12	7.6	3.2	7.6	187	.02	3.6	18
8	13	22	6.8	14	11	6.0	3.4	44	20	.00	2.6	8.9
9	15	16	6.3	17	10	4.8	3.1	45	51	.00	2.0	17
10	16	22	5.3	18	e10	3.9	3.6	12	24	.00	17	17
11	16	32	5.4	25	e10	4.8	3.0	6.8	9.6	.00	45	14
12	15	24	4.9	33	11	6.0	1.4	5.2	26	1.3	7.5	11
13	15	21	5.9	33	8.6	8.8	.45	4.1	34	8.7	18	11
14	12	21	9.7	30	10	8.1	.34	3.4	103	.05	41	12
15	8.9	21	7.3	30	9.8	5.6	.71	2.1	26	36	42	58
16	6.3	19	20	20	e10	5.1	3.0	1.0	9.9	35	35	158
17	5.6	13	24	17	e10	5.6	3.2	.70	74	15	42	128
18	4.0	10	21	20	10	6.0	2.0	.23	5.7	6.3	29	1200
19	3.6	9.0	22	28	9.6	5.8	1.3	.01	23	5.6	32	388
20	3.0	9.0	17	30	8.0	5.0	.85	.00	4.9	5.6	27	781
21	2.3	8.6	14	28	9.3	5.1	.42	.00	8.0	5.2	24	198
22	3.0	8.0	e1.2	26	e9.0	5.1	.16	.00	4.7	3.8	32	127
23	2.6	7.9	e14	25	e9.0	5.5	.09	.05	6.8	3.3	26	88
24	1.9	7.1	18	26	e9.0	7.1	.07	.22	7.3	6.4	21	72
25	1.5	6.3	26	19	e9.0	5.5	.17	.00	7.0	3.9	22	63
26	1.2	6.3	26	15	e9.0	3.9	.02	1.3	6.1	3.3	19	53
27	1.1	5.9	25	9.9	e9.0	3.4	.00	14	4.9	3.6	16	46
28	1.3	5.0	17	9.2	8.0	4.3	.03	10	4.2	25	11	42
29	1.4	5.0	15	9.0	---	6.0	.09	10	3.7	51	8.6	42
30	1.3	5.0	15	10	---	4.7	.04	7.8	3.2	30	6.0	39
31	1.4	---	15	9.7	---	4.7	---	4.4	---	11	3.4	---
TOTAL	321.17	349.3	378.8	589.5	267.9	181.2	49.64	193.05	1236.9	267.48	605.5	3777.1
MEAN	10.4	11.6	12.2	19.0	9.57	5.85	1.65	6.23	41.2	8.63	19.5	126
MAX	65	32	26	33	12	8.8	3.6	45	232	51	45	1200
MIN	.67	1.6	1.2	9.0	8.0	3.4	.00	.00	1.9	.00	2.0	1.4
AC-FT	637	693	751	1170	531	359	98	383	2450	531	1200	7490

CAL YR 1990 TOTAL 7190.08 MEAN 19.7 MAX 640 MIN .00 AC-FT 14260
WTR YR 1991 TOTAL 8217.54 MEAN 22.5 MAX 1200 MIN .00 AC-FT 16300

e Estimated

08079575 NORTH FORK DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR POST, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1983 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1983 to current year.
WATER TEMPERATURES: October 1983 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 9,870 microsiemens May 10, 1987; minimum daily, 385 microsiemens Aug. 15, 1986.
WATER TEMPERATURES: Maximum daily, 36.0°C Aug. 13, 1987; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,510 microsiemens Apr. 28; minimum daily, 430 microsiemens Sept. 18.
WATER TEMPERATURES: Maximum daily, 35.0°C June 1; minimum daily, 0.0°C Dec. 21, 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT									
16...	1255	6.9	2740	23.5	580	260	67	100	370
DEC									
12...	1415	5.1	2920	11.0	680	340	74	120	400
JAN									
30...	1010	8.5	2710	0.0	640	290	74	110	360
MAY									
02...	1910	0.04	4430	23.0	860	500	79	160	680
JUL									
02...	0745	1.9	3490	20.0	730	390	79	130	500
AUG									
20...	0830	24	2130	23.5	500	250	51	90	270
SEP									
18...	1320	1660	282	18.0	33	0	7.4	3.5	43

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT								
16...	7	24	320	400	520	3.5	26	1700
DEC								
12...	7	25	340	450	540	4.8	16	1830
JAN								
30...	6	24	340	420	480	3.7	20	1700
MAY								
02...	10	31	360	820	860	4.9	11	2860
JUL								
02...	8	25	340	540	660	3.3	18	2160
AUG								
20...	5	20	250	250	380	3.2	17	1230
SEP								
18...	3	2.7	57	29	32	0.80	4.6	157

08079575 NORTH FORK DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR POST, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1990 TO SEPTEMBER 1991

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.	1990	321.17	2610	1600	1390	440	385	400	348	560
NOV.	1990	349.3	2530	1550	1460	430	405	390	365	550
DEC.	1990	378.8	2600	1600	1630	440	453	400	410	560
JAN.	1991	589.5	2570	1570	2500	440	694	390	625	550
FEB.	1991	267.9	2790	1720	1250	480	346	440	315	600
MAR.	1991	181.2	3050	1900	929	530	259	490	238	640
APR.	1991	49.64	3460	2180	293	610	82	570	77	720
MAY	1991	193.05	2600	1600	833	440	231	400	209	560
JUNE	1991	1236.9	1710	1030	3430	280	943	250	827	380
JULY	1991	267.48	2110	1280	924	350	255	310	227	460
AUG.	1991	605.5	2100	1270	2080	350	573	310	508	460
SEPT	1991	3777.1	963	566	5770	150	1580	130	1350	220
TOTAL		8217.54	**	**	22500	**	6200	**	5490	**
WTD.AVG.		23	1680	1010	**	280	**	250	**	370

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3600	3320	2920	2810	2850	2890	3350	---	3160	3620	2350	2820
2	2810	3230	2930	2750	2830	2930	3360	4430	930	3550	2360	2790
3	2730	3120	2950	2740	2800	2790	3370	e4440	910	3540	2350	1810
4	2580	2230	2830	2700	2790	2880	3390	---	1860	3410	2370	580
5	2440	2790	2900	2690	2750	3090	3400	3580	2430	3360	1650	810
6	2420	2670	2880	2590	2740	2930	3420	3010	1780	3370	2140	1040
7	2500	2630	2850	2680	2730	2880	3430	3110	1610	3380	2460	1490
8	2510	2020	2820	2690	2720	3030	3440	1820	2280	---	2680	2290
9	2530	2450	2840	2660	2730	3050	3450	2570	2150	---	2870	2230
10	2510	2470	2880	2630	2770	3140	3470	2760	2380	---	1160	2280
11	2520	2340	2900	2550	2780	3210	3490	2770	2640	---	920	2370
12	2530	2400	2970	2460	2830	3100	3480	2880	2270	e3210	2580	2470
13	2550	2420	2960	2450	2880	3040	3470	3120	2470	1650	2310	2490
14	2570	2410	2800	2460	2780	2920	3500	3210	2480	3710	2220	2260
15	2730	2420	2830	2470	2740	3040	3550	3420	2490	2550	2240	1940
16	2870	2410	2490	2530	2830	2990	3580	3570	2550	2420	2260	1310
17	2980	2580	2330	2540	2870	3050	3560	3610	1620	2410	2190	1520
18	3010	2620	2450	2550	2880	3080	3550	3440	2580	2490	2240	430
19	3030	2710	2600	2480	2890	3060	3540	3530	1250	2510	2120	750
20	3050	2700	2610	2500	2920	3030	3550	---	2840	2520	2160	520
21	3130	2710	2750	2470	2800	3070	3610	---	2750	2600	2260	1760
22	3190	2720	3050	2480	2710	3090	3710	---	2980	2880	2210	1800
23	3180	2740	2750	2490	2660	3120	3720	e3560	2630	2940	2220	1830
24	3190	2750	2650	2510	2670	2970	3730	e3410	2610	1980	2230	1860
25	3270	2800	2200	2600	2730	3150	3510	---	2630	2400	2220	2080
26	3340	2830	2280	2650	2790	3260	e3500	3110	2840	2780	2250	2180
27	3310	2860	2310	2700	2830	3430	---	2840	2910	1860	2450	2300
28	3330	2850	2570	2800	2850	3440	4510	2850	3020	1310	2610	2340
29	3410	2880	2670	2760	---	3140	3780	2810	3340	1520	2740	2350
30	3420	2910	2860	2770	---	3260	2730	2720	3360	1890	2830	2360
31	3530	---	2890	2810	---	3300	---	3030	---	2270	2930	---
MEAN	2930	2670	2730	2610	2790	3080	3520	3180	2390	2670	2280	1840

e Estimated

08079575 NORTH FORK DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR POST, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	21.0	7.0	4.5	12.0	16.0	18.0	---	35.0	26.5	27.0	24.0
2	20.0	19.0	7.0	10.0	5.0	18.0	18.0	23.0	22.0	26.0	28.0	24.0
3	24.0	17.0	7.0	3.0	8.5	8.0	24.0	---	25.0	30.0	34.0	27.0
4	24.0	8.0	8.0	2.5	18.0	22.0	22.0	---	30.0	28.0	28.0	23.0
5	24.0	15.0	2.0	6.0	13.0	18.0	23.0	24.5	29.5	23.0	27.5	25.0
6	21.0	14.0	9.0	4.5	13.0	14.0	17.0	21.5	27.0	32.0	25.0	25.0
7	23.0	6.0	10.0	5.0	17.0	14.0	18.0	22.0	27.5	27.0	22.0	22.0
8	16.0	8.0	5.0	4.0	14.0	18.0	25.0	28.0	22.0	---	30.0	25.0
9	18.0	9.0	6.0	5.0	9.5	8.0	23.0	27.0	28.0	---	28.0	26.5
10	20.0	11.0	12.0	8.0	7.5	14.0	8.0	26.5	26.0	---	24.5	26.0
11	22.0	12.0	12.5	9.0	13.0	16.0	24.0	22.0	27.5	---	21.5	26.0
12	21.0	17.0	15.0	4.5	18.0	5.0	24.0	22.5	28.0	---	27.0	27.0
13	11.0	16.0	9.0	6.0	18.5	16.0	11.0	28.0	29.0	22.0	27.0	24.0
14	12.0	17.0	13.0	10.0	15.5	13.0	12.0	28.0	27.0	28.0	27.0	21.0
15	25.0	19.5	8.0	11.0	4.0	19.5	22.5	25.0	24.0	29.0	27.0	25.0
16	23.0	13.0	7.0	10.5	15.0	9.5	20.0	25.0	23.0	31.0	27.0	21.0
17	18.0	17.0	12.0	7.0	14.5	10.5	24.0	27.0	27.0	30.0	23.5	25.0
18	17.0	15.0	11.0	8.0	12.0	8.5	23.5	20.0	25.0	31.0	29.0	20.5
19	21.0	18.0	12.0	5.0	12.0	9.5	25.0	20.0	24.0	25.0	28.0	15.0
20	19.0	19.5	9.0	4.5	15.0	9.5	18.0	---	29.0	26.5	27.0	15.0
21	---	19.0	.0	5.0	14.5	9.0	18.0	---	29.0	30.0	26.0	15.0
22	16.0	14.0	1.0	9.0	18.0	10.0	22.0	---	28.0	24.0	31.0	18.0
23	19.0	14.0	.0	7.0	9.5	8.0	25.0	---	24.0	25.5	27.0	21.0
24	19.0	9.0	2.0	9.0	8.0	9.0	13.0	---	27.0	26.5	30.0	20.0
25	19.0	12.0	2.0	8.0	14.0	19.0	25.0	---	30.0	25.0	30.0	23.0
26	20.0	16.0	2.0	2.5	15.0	20.0	---	25.5	25.0	29.0	28.0	22.0
27	24.5	13.0	4.0	6.0	16.0	18.0	---	30.0	31.0	23.0	26.5	22.0
28	15.0	12.5	8.0	11.5	15.0	12.5	14.0	26.0	23.0	28.0	28.0	20.5
29	17.5	10.0	9.0	7.0	---	22.0	21.5	28.0	30.0	30.0	28.0	19.0
30	20.0	11.0	1.0	11.0	---	7.0	21.0	23.0	27.0	27.0	27.0	24.0
31	20.0	---	2.0	11.0	---	8.0	---	28.0	---	29.0	20.5	---
MEAN	19.7	14.1	6.9	6.9	13.0	13.2	20.0	25.0	27.0	27.4	27.1	22.4

08079600 DOUBLE MOUNTAIN FORK BRAZOS RIVER AT JUSTICEBURG, TX

LOCATION.--Lat 33°02'18", long 101°11'50", Garza County, Hydrologic Unit 12050004, on right bank at downstream side of bridge on U.S. Highway 84 at Justiceburg, 250 ft downstream from Panhandle and Santa Fe Railroad, and at mile 143.4 measured from confluence with Salt Fork Brazos River at mile 923.2 on the Brazos River.

DRAINAGE AREA.--1,466 mi², of which 1,222 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1961 to current year. Prior to October 1963, published as Sand Creek or South Fork Double Mountain Fork Brazos River at Justiceburg.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,222.47 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--29 years (water years 1963-91), 26.8 ft³/s (1.49 in/yr), 19,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,600 ft³/s May 6, 1969 (gage height, 19.8 ft, from floodmarks); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since at least 1895, 25.8 ft in 1914 and 22.2 ft in September 1955, from information by local resident. Flood in July 1961 reached a stage of 18.2 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,100 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 2	1030	7,810	10.30	June 3	1000	*11,000	*11.29

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	e.10	e.07	e.07	.10	.02	e.02	.00	e.02	e.07	.07	.00
2	.05	e.10	e.07	e.07	.07	.00	.02	.00	1570	.07	.05	.00
3	82	e.10	e.05	e.07	e.07	.00	e.01	.12	2400	e.07	.05	.00
4	1.4	20	e.05	e.07	.05	.00	e.01	.07	20	e.07	.05	111
5	.18	1.3	e.05	e.07	e.07	.00	.01	.07	.07	e.05	e.03	18
6	.10	.30	e.05	e.10	.07	.00	e.02	e.07	59	e.05	e.03	9.0
7	.07	12	e.05	.07	e.07	.00	e.02	e.03	140	e.03	e.03	46
8	.03	78	e.05	e.07	.05	.00	e.02	50	14	e.03	e.15	2.9
9	10	8.8	e.05	.07	e.05	.00	.01	4.2	4.8	e.02	7.2	1.6
10	.18	.23	e.05	e.07	e.07	.00	.00	.30	2.7	e.02	1.8	.86
11	.07	.10	e.05	e.07	.07	.00	.00	.18	1.6	e.01	49	.73
12	.10	.07	.05	e.07	e.05	.00	.00	.05	1.1	e.88	47	.73
13	.10	.07	e.05	e.07	.02	e.01	.00	16	.44	46	16	.98
14	.10	.07	e.05	e.07	.00	e.02	.00	31	.30	8.0	7.8	.98
15	.10	.07	e.05	e.07	.00	.02	.00	.87	.13	.30	.53	.73
16	.13	.07	e.05	e.07	.00	e.02	.00	.07	e.10	.10	.30	11
17	.13	.07	12	e.07	.00	e.02	.00	.07	.03	.05	28	65
18	.10	e.07	2.9	31	.00	.02	.00	.05	.69	.03	4.8	881
19	.10	.07	.13	16	.00	e.02	.00	e.05	.30	.03	.36	632
20	.10	.07	.10	.58	.00	e.02	.00	.05	.13	.02	26	194
21	e.10	e.07	e.09	.10	.00	.02	.00	.05	117	e.02	.86	47
22	e.10	e.07	e.04	.10	.00	.02	.00	.05	3.8	e.03	.53	14
23	e.10	e.07	e.03	.10	.00	e.03	.00	e.05	1.4	e.05	.13	8.2
24	e.10	e.07	e.06	.10	.00	e.03	.00	e.03	.62	.07	.07	3.2
25	e.10	e.07	e.07	.07	.00	e.03	.00	e.03	.13	.46	.07	2.4
26	e.10	e.07	.07	.07	.00	.02	.00	e.03	.10	.13	.07	1.6
27	e.10	e.07	.07	e.07	.00	.00	.00	e.03	.10	18	.05	1.3
28	e.10	e.07	.07	e.07	.00	.00	.00	e.03	.10	14	.05	1.1
29	e.10	e.07	.07	e.07	---	.01	.00	e.02	.07	8.5	.00	.73
30	e.10	e.07	e.07	.07	---	e.01	.00	e.02	.07	1.8	.00	.53
31	.10	---	e.07	.10	---	e.02	---	e.02	---	.13	.00	---
TOTAL	96.21	122.36	16.68	49.72	0.81	0.36	0.14	103.61	4338.80	99.09	191.08	2056.57
MEAN	3.10	4.08	.54	1.60	.029	.012	.005	3.34	145	3.20	6.16	68.6
MAX	82	78	12	31	.10	.03	.02	50	2400	46	49	881
MIN	.03	.07	.03	.07	.00	.00	.00	.00	.02	.01	.00	.00
AC-FT	191	243	33	99	1.6	.7	.3	206	8610	197	379	4080
CFSM	.01	.02	.00	.01	.00	.00	.00	.01	.59	.01	.03	.28
IN.	.01	.02	.00	.01	.00	.00	.00	.02	.66	.02	.03	.31

CAL YR 1990	TOTAL	6792.82	MEAN	18.6	MAX	1140	MIN	.00	AC-FT	13470	CFSM	.08	IN.	1.04
WTR YR 1991	TOTAL	7075.43	MEAN	19.4	MAX	2400	MIN	.00	AC-FT	14030	CFSM	.08	IN.	1.08

e Estimated

08079600 DOUBLE MOUNTAIN FORK BRAZOS RIVER AT JUSTICEBURG, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Chemical analyses: December 1964 to September 1965, October 1975 to current year. Sediment analyses: June 1977 to June 1982.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to current year.
WATER TEMPERATURES: October 1975 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 26,800 microsiemens Mar. 5, 1982; minimum daily, 370 microsiemens Oct. 20, 1983.
WATER TEMPERATURES: Maximum daily, 34.0°C Aug. 18, 1991; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 22,900 microsiemens Apr. 9; minimum daily, 559 microsiemens Sept. 19.
WATER TEMPERATURE: Maximum daily, 34.0°C Aug. 18.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT									
16...	1440	0.13	14700	27.0	890	750	210	89	3000
NOV									
04...	0900	200	1270	6.5	49	0	14	3.5	240
JAN									
30...	0830	0.07	16400	0.0	1100	860	250	110	3200
MAY									
03...	0715	0.36	3500	18.5	190	37	52	14	650
JUL									
02...	0920	0.07	15100	24.0	870	660	210	85	2800
AUG									
20...	1020	18	1140	23.0	56	0	15	4.5	210
SEP									
18...	1535	1710	424	16.5	8	0	2.3	0.50	86

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT								
16...	44	11	150	460	4900	2.0	10	8770
NOV								
04...	15	3.3	150	110	210	0.90	8.8	683
JAN								
30...	42	9.1	220	650	5400	0.80	10	9760
MAY								
03...	21	4.0	150	170	920	1.0	9.4	1910
JUL								
02...	41	10	210	500	4600	1.4	12	8350
AUG								
20...	12	4.0	110	120	200	1.2	8.1	630
SEP								
18...	13	1.3	75	35	60	0.50	9.4	240

08079600 DOUBLE MOUNTAIN FORK BRAZOS RIVER AT JUSTICEBURG, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1990 TO SEPTEMBER 1991

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.	1990	96.21	1420	837	217	460	119	57	15	100
NOV.	1990	122.36	2190	1290	427	710	234	88	29	150
DEC.	1990	16.68	3780	2250	101	1200	55	150	7.0	270
JAN.	1991	49.72	2030	1200	161	660	88	82	11	140
FEB.	1991	0.81	15400	9370	20	5100	11	660	1.5	*
MAR.	1991	0.36	19600	12100	12	6500	6.3	870	0.8	*
APR.	1991	0.14	22300	13900	5.2	7400	2.8	1000	0.4	*
MAY	1991	103.61	4420	2640	738	1400	403	180	51	310
JUNE	1991	4338.80	753	438	5130	240	2840	29	343	52
JULY	1991	99.09	2800	1640	440	910	242	110	30	200
AUG.	1991	191.08	1730	1020	524	560	289	69	35	120
SEPT	1991	2056.57	911	533	2960	290	1630	36	200	64
TOTAL		7075.43	**	**	10700	**	5930	**	724	**
WTD.AVG.		19	961	562	**	310	**	38	**	67

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14700	e15300	e15200	e15900	15200	22500	e21200	---	e19300	e14300	13900	---
2	14500	e15400	e15300	e16100	15400	---	21500	---	840	e14400	14900	---
3	730	e15600	e15300	e16400	e15100	---	e21900	4320	644	e14500	15300	---
4	2860	1200	e15400	e16500	14800	---	e22200	16600	865	e14600	15700	740
5	7920	2670	e15500	e16800	e15200	---	22600	18900	1960	e14700	e15900	1010
6	10600	8750	e15500	e17000	15700	---	e22700	e19000	820	e14800	e16200	1030
7	12500	9250	e15600	17200	e15500	---	e22800	e19100	720	e14900	e16600	1260
8	13200	1110	e15600	e17000	15400	---	e22800	904	1810	e15000	e15200	2760
9	3530	1500	e15700	16700	e15500	---	22900	2340	3300	e15100	1600	5110
10	5200	6010	e15800	e16800	e15600	---	---	9430	4150	e15200	1460	8350
11	10400	10200	e15900	e16900	15400	---	---	12900	3690	e15300	580	13400
12	12600	12300	15900	e17000	e15500	---	---	13800	5900	e8250	618	14000
13	13700	13500	e16000	e17100	15600	e18800	---	12300	7350	1890	1230	11900
14	13600	13800	e16100	e17000	---	e18600	---	5770	8750	1490	1440	11200
15	13600	14000	e16200	e17100	---	18200	---	6500	8840	7140	5920	12700
16	13700	14200	e16300	e17200	---	e18400	---	13700	e9400	13600	9600	14600
17	13700	14500	2620	e17000	---	e18500	---	15400	9960	14900	4380	1000
18	14900	e14600	1940	1180	---	18600	---	16500	4260	15400	1950	562
19	14900	14800	8160	1700	---	e18700	---	e17200	8240	15700	5310	559
20	15000	15000	11600	5120	---	e18600	---	17800	9310	16000	2620	1350
21	e15100	e15100	e12400	10900	---	18700	---	e18000	1120	e16100	4060	2600
22	e15200	e15100	e13200	14100	---	18600	---	18300	2100	e16200	8730	3990
23	e15300	e15200	e14000	14200	---	e19200	---	e18400	4860	e16400	9790	4700
24	e15200	e15200	e14900	14400	---	e19800	---	e18500	8120	e16000	12400	5450
25	e15300	e15100	e15600	14600	---	e20500	---	e18600	10600	3040	14600	6580
26	e15400	e15100	16500	15500	---	21100	---	e18700	12500	7300	15200	7650
27	e15400	e15200	15900	e15600	---	---	---	e18800	13200	6250	15600	8630
28	e15500	e15200	14700	e15700	---	---	---	e18900	13700	1260	16100	8990
29	e15400	e15300	15600	e16000	---	21800	---	e19000	14000	2000	---	9400
30	e15300	e15200	e15700	16300	---	e21600	---	e19100	14200	2700	---	9610
31	15200	---	e15800	15800	---	e21400	---	e19200	---	9000	---	---
MEAN	12600	12200	14200	14700	15400	19600	22300	14800	6820	11400	9170	6260

e Estimated

08079600 DOUBLE MOUNTAIN FORK BRAZOS RIVER AT JUSTICEBURG, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	---	---	---	2.0	9.0	---	---	---	---	19.0	---
2	19.0	---	---	---	4.0	---	11.5	---	19.0	---	20.5	---
3	19.0	---	---	---	---	---	---	18.5	17.5	---	21.5	---
4	19.5	6.5	---	---	10.0	---	---	15.0	20.5	---	23.5	21.0
5	17.5	9.5	---	---	---	---	12.0	12.0	23.0	---	---	21.5
6	20.0	7.5	---	---	10.0	---	---	---	20.5	---	---	21.0
7	20.0	5.5	---	2.0	---	---	---	---	21.0	---	---	23.0
8	15.0	5.0	---	---	5.0	---	---	18.0	22.5	---	---	22.5
9	11.0	5.0	---	6.5	---	---	10.5	21.0	32.5	---	22.0	21.0
10	7.5	6.0	---	---	---	---	---	24.5	24.0	---	21.0	21.0
11	9.0	10.0	---	---	8.0	---	---	21.0	25.5	---	22.0	21.0
12	11.0	8.0	10.0	---	---	---	---	23.0	27.0	---	22.0	20.5
13	11.0	7.5	---	---	10.0	---	---	19.0	20.0	28.5	22.0	21.5
14	12.5	9.0	---	---	---	---	---	20.5	21.0	24.0	21.5	21.0
15	10.5	13.0	---	---	---	8.5	---	24.5	18.0	29.0	19.5	31.0
16	15.5	14.5	---	---	---	---	---	14.5	---	21.5	21.5	22.0
17	18.0	11.5	10.0	---	---	---	---	20.0	21.0	22.0	30.5	20.0
18	9.0	---	5.5	6.0	---	8.0	---	19.5	21.0	21.0	34.0	15.5
19	10.0	10.0	6.5	4.5	---	---	---	---	21.0	21.5	28.5	11.5
20	8.0	16.0	5.0	3.5	---	---	---	20.0	21.0	21.0	26.0	11.0
21	---	---	---	3.0	---	12.5	---	---	20.0	---	26.0	13.0
22	---	---	---	.5	---	8.0	---	20.5	20.0	---	26.5	18.0
23	---	---	---	3.0	---	---	---	---	23.0	---	21.5	15.5
24	---	---	---	2.0	---	---	---	---	21.0	---	21.5	16.0
25	---	---	---	3.0	---	---	---	---	21.5	21.0	24.0	12.0
26	---	---	5.0	1.5	---	16.0	---	---	21.5	23.5	21.0	14.5
27	---	---	2.0	---	---	---	---	---	21.5	26.5	20.5	14.0
28	---	---	6.0	---	---	---	---	---	22.0	33.0	20.0	15.0
29	---	---	9.5	---	---	8.5	---	---	21.5	26.0	---	15.0
30	---	---	---	.0	---	---	---	---	23.5	27.5	---	14.5
31	---	---	---	1.5	---	---	---	---	---	27.5	---	---
MEAN	14.0	9.0	6.6	2.8	7.0	10.1	11.3	19.5	21.8	24.9	23.2	18.3

08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX
(National stream-quality accounting network)

LOCATION.--Lat 33°00'29", long 100°10'49", Stonewall County, Hydrologic Unit 12050004, on right bank at downstream side of bridge on U.S. Highway 83, 0.3 mi downstream from Hitson Creek, 10 mi south of Aspermont, and at mile 34.5, measured from confluence with Salt Fork Brazos River, which is at mile 923.2 on the Brazos River.

DRAINAGE AREA.--8,796 mi², of which 6,932 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1923 to September 1934, June 1939 to current year.

REVISED RECORDS.--WSP 733: 1927(M). WRD TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,624.79 ft above National Geodetic Vertical Datum of 1929. Dec. 3, 1923, to Sept. 30, 1934, nonrecording gage at site 90 ft downstream at datum 2.0 ft higher, and June 8, 1939, to Aug. 12, 1972, water-stage recorder at present site and datum 2.0 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. There are small diversions above station for oil field operations.

AVERAGE DISCHARGE.--62 years (water years 1925-34, 1940-91), 158 ft³/s (1.15 in/yr), 114,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 91,400 ft³/s Sept. 26, 1955 (gage height, 29.5 ft present datum); no flow at times most years.
Maximum stage since at least 1899, that of Sept. 26, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,800 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 3	2230	*23,100	*16.75	No other peak greater than base discharge.			

Minimum discharge, no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	11	16	e20	22	9.3	3.8	.04	.00	54	50	26
2	14	10	15	20	20	8.5	3.7	91	598	51	45	25
3	23	10	13	20	19	8.4	3.0	338	9490	48	42	22
4	23	41	13	19	19	8.4	3.0	99	8760	45	37	33
5	48	62	13	19	19	8.1	3.0	30	1260	42	29	38
6	59	51	13	19	18	7.8	2.9	14	3350	39	25	e64
7	57	46	11	20	17	7.6	3.1	8.2	2380	35	22	e65
8	55	61	11	19	16	7.6	2.8	16	2400	33	19	e136
9	46	57	11	28	16	7.6	2.9	7.8	1590	31	18	e113
10	34	55	11	59	16	7.2	3.0	162	692	29	20	e74
11	27	54	10	61	16	6.6	19	119	446	27	345	54
12	25	54	10	40	16	6.5	9.3	58	351	25	227	45
13	22	53	10	33	14	5.9	5.2	51	295	24	246	43
14	19	50	10	28	14	5.9	3.8	28	276	23	243	46
15	19	44	10	26	14	5.9	2.2	19	206	22	134	48
16	23	42	23	23	13	6.1	1.2	13	176	22	142	42
17	25	39	25	24	13	7.4	.90	10	162	21	673	53
18	23	37	22	43	12	7.0	.90	7.8	164	20	817	255
19	20	34	19	51	12	6.6	.80	6.1	161	21	272	1980
20	18	32	18	41	12	6.4	.72	4.7	234	24	133	1870
21	17	31	30	37	11	6.1	.64	3.7	202	22	93	1100
22	16	e29	27	47	11	5.4	.56	3.0	138	19	85	758
23	16	28	27	46	11	4.5	.56	2.2	113	17	69	479
24	15	26	e25	42	11	4.4	.56	1.9	138	28	58	348
25	14	23	e23	38	10	4.4	.44	1.8	135	71	49	267
26	e13	23	22	35	10	4.4	.28	1.2	94	40	43	215
27	e12	20	21	32	9.9	4.4	.20	.72	81	72	49	176
28	e11	19	20	30	9.5	3.9	.20	.56	68	148	37	149
29	e11	18	20	24	---	3.5	.11	.11	61	108	33	123
30	e11	17	20	22	---	3.6	.07	.01	57	55	29	105
31	e11	---	20	21	---	3.8	---	.00	---	48	27	---
TOTAL	743	1077	539	987	401.4	193.2	78.84	1097.84	34078.00	1264	4111	8752
MEAN	24.0	35.9	17.4	31.8	14.3	6.23	2.63	35.4	1136	40.8	133	292
MAX	59	62	30	61	22	9.3	19	338	9490	148	817	1980
MIN	11	10	10	19	9.5	3.5	.07	.00	.00	17	18	22
AC-FT	1470	2140	1070	1960	796	383	156	2180	67590	2510	8150	17360
CFSM	.01	.02	.01	.02	.01	.00	.00	.02	.61	.02	.07	.16
IN.	.01	.02	.01	.02	.01	.00	.00	.02	.68	.03	.08	.17

CAL YR 1990	TOTAL	59677.18	MEAN	163	MAX	21800	MIN	.11	AC-FT	118400	CFSM	.09	IN.	1.19
WTR YR 1991	TOTAL	53322.28	MEAN	146	MAX	9490	MIN	.00	AC-FT	105800	CFSM	.08	IN.	1.06

e Estimated

08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1948 to November 1951, September 1956 to September 1977. Chemical and biochemical analyses: June 1978 to current year. Sediment analyses: September 1944 to November 1951, June 1978 to current year. Pesticide analyses: March to June 1979.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1948 to November 1951, September 1956 to current year.
WATER TEMPERATURE: November 1949 to November 1951, September 1956 to current year.
SUSPENDED-SEDIMENT DISCHARGE: November 1949 to September 1951.

REMARKS.--No daily observer record for May and June. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 13,100 microsiemens July 29, 1980; minimum daily, 720 microsiemens Oct. 18, 1985.
WATER TEMPERATURE: Maximum daily, 38.0°C July 18, 1966; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 10,200 microsiemens Mar. 16, 20, 29; minimum estimated daily, 1,410 microsiemens Aug. 18.
WATER TEMPERATURE: Maximum daily, 33.5°C July 20, 21; minimum daily, 0.0°C Dec. 22, 23, Jan. 3, 4, 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV											
14...	0825	50	2670	8.3	9.0	2400	10.3	94	1.9	5700	6500
JAN											
09...	1322	25	6760	8.1	6.5	60	11.1	98	0.4	K60	190
MAR											
06...	0915	7.6	9820	8.1	13.5	7.9	9.8	104	0.5	70	22
MAY											
07...	1150	7.3	4750	8.1	20.5	22	8.7	104	1.2	80	54
JUN											
04...	1200	5480	1030	8.1	20.0	2600	7.8	91	6.2	E20000	K16000
AUG											
06...	1145	26	6890	8.1	29.0	25	7.6	107	1.7	220	140

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)
NOV											
14...	410	280	110	31	380	8	4.9	0	155	127	410
JAN											
09...	1300	1200	370	98	990	12	9.0	0	183	150	1200
MAR											
06...	2000	1900	560	150	1500	15	13	0	148	121	2300
MAY											
07...	1800	1700	560	86	530	6	11	0	98	80	1800
JUN											
04...	260	200	86	12	120	3	4.3	0	82	68	310
AUG											
06...	1600	1500	450	110	1100	12	11	0	127	104	1700

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
NOV											
14...	500	0.60	7.0	1500	1520	0.370	--	0.130	<0.010	0.500	0.400
JAN											
09...	1500	0.70	10	4380	4270	--	--	<0.010	<0.010	0.300	0.300
MAR											
06...	1900	1.2	6.9	7240	6500	--	--	0.010	<0.010	<0.050	0.061
MAY											
07...	820	0.70	7.3	3860	3870	0.140	0.150	0.020	0.010	0.160	0.160
JUN											
04...	100	0.50	7.5	630	683	0.370	0.460	0.150	0.020	0.520	0.480
AUG											
06...	1600	1.7	12	4900	5050	--	--	0.020	<0.010	<0.050	<0.050

08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
NOV											
14...	0.040	0.060	0.46	--	0.50	2.00	0.020	<0.010	<0.010	3410	460
JAN											
09...	0.150	0.160	0.05	--	0.20	0.040	<0.010	<0.010	<0.010	105	7.1
MAR											
06...	0.050	0.070	--	--	<0.20	0.010	<0.010	<0.010	<0.010	31	0.64
MAY											
07...	0.040	0.040	0.36	--	0.40	0.060	0.010	<0.010	0.010	33	0.65
JUN											
04...	0.050	0.030	3.0	--	3.1	0.570	0.030	<0.010	0.120	24500	363000
AUG											
06...	0.050	0.050	0.45	<0.20	0.50	0.040	<0.010	<0.010	<0.010	58	4.1

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
NOV											
14...	99	<10	3	100	<10	<1.0	<1	<1	4	<10	<1
JAN											
09...	96	20	3	<100	<10	1.0	1	<1	3	<10	<1
MAR											
06...	97	--	--	--	--	--	--	--	--	--	--
MAY											
07...	98	20	2	<100	<10	<1.0	3	<1	<1	<10	<1
JUN											
04...	88	--	--	--	--	--	--	--	--	--	--
AUG											
06...	98	80	3	100	<10	<1.0	3	<1	<1	20	<1

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
NOV										
14...	60	<10	<0.1	<1	1	1	<1.0	2600	20	<10
JAN										
09...	120	60	<0.1	5	<1	<1	<1.0	5200	34	10
MAR										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
07...	70	70	<0.1	6	<1	2	<1.0	7100	24	<10
JUN										
04...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	130	110	<0.1	7	1	<1	<1.0	2500	45	<10

08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6950	8410	7650	e6580	5600	9510	9540	---	---	6700	6250	e5580
2	e7270	8400	7990	6560	6520	9530	9520	---	---	7010	e6350	e5610
3	e6240	8410	8150	6570	7000	e9520	9530	---	---	7260	6400	e5640
4	e5510	7300	8320	6560	6530	e9510	9540	---	---	7460	6660	3250
5	e4060	3100	8400	6570	7000	9520	9530	---	---	7750	6760	2150
6	4150	3250	8440	6580	7100	9530	9520	---	---	8210	6890	e1980
7	4190	3320	8520	6560	7200	9390	9520	---	---	8230	7960	e1860
8	4310	3330	8610	5670	7300	9400	9510	---	---	8620	8320	e1730
9	4410	3340	8700	6560	7400	9380	9510	---	---	8650	8270	e1910
10	4550	3320	8720	2970	e7500	9390	9500	---	---	8800	7700	e2260
11	5250	3330	8730	2990	e7600	9860	9510	---	---	9050	1850	e3220
12	7260	3340	8740	3250	e7700	9870	9520	---	---	9060	1960	e3510
13	7300	3350	8750	4560	e7800	10100	9510	---	---	9070	2830	e3720
14	7540	3340	8760	5500	e7900	10000	9410	---	---	9080	3210	e3860
15	7800	3350	8770	5550	e8000	10100	9320	---	---	9620	e3460	e3720
16	8120	3480	7130	5600	e8100	10200	9280	---	---	9630	e2640	e3880
17	8430	4260	7110	5700	e8200	10100	9200	---	---	9440	e1620	e3320
18	8440	4410	7120	5490	e8300	10000	9160	---	---	9450	e1410	e2910
19	8430	5050	7130	3520	e8400	10100	9120	---	---	9710	e1680	e2100
20	8440	5460	7150	5510	e8500	10200	9110	---	---	9720	1860	e2160
21	8450	5960	5700	5550	e8600	10100	9100	---	---	9470	2150	e2640
22	8460	e6120	5690	5600	e8700	10000	9090	---	---	8880	2450	e2850
23	8450	6270	5700	3510	e8800	10100	9080	---	---	8890	3860	e3140
24	8440	6650	e5690	3750	e8900	10100	9090	---	---	6940	4990	3370
25	8450	7060	e5670	5600	e9000	10000	9070	---	---	3400	e5060	e3450
26	8440	7300	5660	5630	e9100	10100	e9080	---	---	4940	e5180	e3540
27	8450	7390	5720	5620	e9300	10000	e9060	---	---	5120	e5210	e3760
28	8460	7420	6760	5610	e9400	10100	9090	---	---	3840	e5450	e3950
29	8450	7560	6740	5620	---	10200	9090	---	---	6220	e5480	e4040
30	8440	7660	6770	5630	---	10100	9090	---	---	7320	e5510	e4150
31	8420	---	6620	5640	---	10000	---	---	---	7460	e5560	---
MEAN	7150	5360	7410	5370	7910	9870	9310	---	---	7900	4680	3310

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	22.0	11.0	---	9.0	21.0	18.0	---	---	29.5	29.5	29.0
2	23.0	21.0	11.0	.5	8.0	22.0	18.0	---	---	29.5	31.5	29.0
3	24.0	21.0	10.0	.0	9.0	---	20.0	---	---	28.0	31.0	28.0
4	21.0	19.0	11.0	.0	13.0	---	21.0	---	---	33.0	30.5	29.0
5	25.0	15.0	11.0	2.0	12.0	23.0	22.0	---	---	31.0	29.5	29.5
6	21.0	15.0	10.0	.0	14.0	21.0	22.0	---	---	31.0	30.0	29.5
7	22.0	14.0	11.0	1.0	15.0	19.0	22.0	---	---	31.0	31.0	29.5
8	20.0	14.0	12.0	3.0	16.0	19.0	23.0	---	---	29.0	32.5	29.0
9	20.0	15.0	12.0	3.0	16.0	20.0	21.0	---	---	28.0	28.0	29.0
10	20.0	17.0	13.0	.5	---	20.0	21.0	---	---	29.0	26.5	29.5
11	23.0	17.0	13.0	.5	---	19.0	22.0	---	---	29.0	23.5	29.5
12	23.0	17.0	13.0	.5	---	20.0	22.0	---	---	30.0	28.0	30.0
13	22.0	18.0	12.0	8.0	---	19.0	21.0	---	---	30.0	25.0	29.0
14	21.0	17.0	12.0	9.0	---	19.0	21.0	---	---	28.0	28.0	29.5
15	22.0	17.0	10.0	9.0	---	18.0	22.0	---	---	28.5	28.5	29.0
16	23.0	16.0	13.0	10.0	---	18.0	22.0	---	---	28.0	30.5	29.0
17	23.0	16.0	10.0	9.0	---	18.0	23.0	---	---	31.0	25.5	27.5
18	22.0	17.0	10.0	8.0	---	19.0	23.0	---	---	32.0	29.0	28.0
19	21.0	18.0	11.0	8.0	---	19.0	22.0	---	---	32.5	32.0	29.0
20	20.0	18.0	9.0	8.0	---	21.0	23.0	---	---	33.5	30.0	26.5
21	20.0	19.0	1.0	8.0	---	20.0	23.0	---	---	33.5	30.5	26.0
22	20.0	---	.0	7.0	---	20.0	21.0	---	---	30.0	30.0	27.0
23	20.0	19.0	.0	7.0	---	22.0	22.0	---	---	31.5	30.5	27.5
24	21.0	20.0	---	9.0	---	22.0	21.0	---	---	25.0	30.5	29.0
25	20.0	19.0	---	9.0	---	23.0	21.0	---	---	25.0	---	29.5
26	22.0	18.0	1.0	8.0	---	22.0	---	---	---	27.0	---	30.0
27	22.0	17.0	2.0	9.0	---	20.0	---	---	---	26.0	---	29.5
28	21.0	16.0	2.0	8.0	---	19.0	21.0	---	---	32.0	---	29.0
29	22.0	13.0	5.0	6.0	---	18.0	21.0	---	---	28.0	---	---
30	21.0	12.0	1.0	6.0	---	16.0	22.0	---	---	29.0	---	---
31	22.0	---	2.0	8.0	---	16.0	---	---	---	29.0	---	---
MEAN	21.6	17.1	8.2	5.5	12.4	19.8	21.5	---	---	29.6	29.2	28.8

08082000 SALT FORK BRAZOS RIVER NEAR ASPERMONT, TX
(National stream-quality accounting network)

LOCATION.--Lat 33°20'02", long 100°14'16", Stonewall County, Hydrologic Unit 12050007, on left bank at downstream side of bridge on U.S. Highway 83, 5.5 mi downstream from Salt Croton Creek, 13.2 mi north of Aspermont, and at mile 27.3 measured from confluence with Double Mountain Fork Brazos River which is at mile 923.2 on the Brazos River.

DRAINAGE AREA.--5,130 mi², of which 2,634 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1923 to August 1925, June 1939 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,588.70 ft above National Geodetic Vertical Datum of 1929. Dec. 5, 1923, to Aug. 29, 1925, nonrecording gage at site 6.7 mi downstream at different datum. June 15, 1939, to July 13, 1972, water-stage recorder at present site. July 14, 1972, to July 14, 1975, at site 0.1 mi upstream at same datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Daily discharges below 160 ft³/s were based on a graph of once daily wire-weight gage readings. There are no large diversions above station. Some regulation by White River Reservoir (capacity, 44,900 acre-ft), 106 mi upstream.

AVERAGE DISCHARGE.--52 years (water years 1940-91), 106 ft³/s (76,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,200 ft³/s Sept. 25, 1955 (gage height, 14.92 ft), from rating curve extended above 29,000 ft³/s; no flow at times most years.
Maximum stage since at least 1900, that of Sept. 25, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1913 reached a stage of 14.4 ft, and flood in November 1934 reached a stage of 13.7 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 3	0800	*11,700	*8.43				

Minimum daily discharge, 0.56 ft³/s Aug. 9, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	4.4	5.4	e8.5	10	6.5	2.9	1.4	2.3	50	11	e12
2	10	4.4	e5.9	8.5	9.2	5.9	2.9	81	1600	48	9.2	e11
3	43	4.9	7.1	7.8	e10	e6.5	2.9	120	8280	46	5.4	44
4	32	e4.9	5.4	e7.1	9.2	7.1	2.9	e34	4690	e46	2.3	109
5	20	5.4	4.9	7.1	10	5.9	2.3	e15	1210	44	2.0	79
6	15	14	4.4	e8.5	21	5.4	2.6	7.1	2980	40	1.6	236
7	e13	8.7	4.9	10	13	5.4	e2.6	5.4	4410	e40	1.2	162
8	e12	76	4.9	12	11	4.9	2.9	8.3	1880	e40	.76	e69
9	11	55	e4.9	11	10	4.4	2.6	4.9	800	e40	.56	49
10	11	32	4.9	40	e10	e4.4	2.3	3.6	605	e40	.56	28
11	10	e24	4.9	32	9.2	4.4	2.3	e3.6	449	e42	1180	13
12	9.2	e19	4.9	20	8.5	4.4	2.0	e4.4	414	e42	344	11
13	9.2	18	4.9	e16	8.5	4.0	2.0	4.4	330	e42	479	15
14	e7.8	17	4.9	15	8.5	4.0	e1.8	3.6	253	e42	652	44
15	6.5	15	4.9	14	7.8	4.0	1.8	3.2	221	40	279	e29
16	6.5	15	e11	15	7.1	4.0	1.8	3.6	e191	31	160	101
17	6.5	11	20	14	e6.5	e4.0	1.8	3.2	155	19	589	189
18	5.9	e9.2	19	22	e7.1	4.0	1.8	1.8	152	17	366	872
19	5.4	9.2	15	52	7.8	4.0	1.8	e2.3	159	15	201	4720
20	4.9	8.5	10	e34	7.1	4.4	1.8	2.9	124	13	101	2550
21	e4.9	8.5	8.5	e19	6.5	4.9	e1.8	2.3	121	e12	66	816
22	4.9	e8.5	9.2	16	6.5	4.4	2.0	2.0	141	8.5	46	499
23	4.4	7.8	e7.8	15	5.9	4.0	2.3	1.8	e109	7.1	34	400
24	4.4	7.8	7.1	14	e5.4	e4.0	2.0	2.0	101	6.5	27	361
25	4.4	e7.1	e6.5	14	5.4	3.6	7.8	161	90	7.1	e26	291
26	4.0	7.1	8.5	13	5.9	3.6	3.2	e233	83	15	23	247
27	4.4	7.1	10	e12	6.5	3.6	3.2	e83	76	22	20	209
28	e4.4	6.5	11	11	5.9	3.6	e2.9	28	63	e22	19	182
29	4.4	5.9	10	10	---	3.2	2.3	5.9	58	26	17	160
30	4.4	5.4	e8.5	9.2	---	2.9	1.8	5.4	e54	23	16	147
31	4.4	---	7.8	9.2	---	e2.9	---	4.4	---	14	14	---
TOTAL	298.9	427.3	247.1	496.9	239.5	138.3	75.1	842.5	29801.3	900.2	4693.58	12655
MEAN	9.64	14.2	7.97	16.0	8.55	4.46	2.50	27.2	993	29.0	151	422
MAX	43	76	20	52	21	7.1	7.8	233	8280	50	1180	4720
MIN	4.0	4.4	4.4	7.1	5.4	2.9	1.8	1.4	2.3	6.5	.56	11
AC-FT	593	848	490	986	475	274	149	1670	59110	1790	9310	25100

CAL YR 1990 TOTAL 45272.92 MEAN 124 MAX 9250 MIN .10 AC-FT 89800
WTR YR 1991 TOTAL 50815.68 MEAN 139 MAX 8280 MIN .56 AC-FT 100800

e Estimated

08082000 SALT FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1941 to October 1951, October 1956 to September 1974. Chemical and biochemical analyses: October 1974 to current year. Pesticide analyses: March to June 1979. Sediment analyses: June 1961 to September 1965, October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1948 to October 1951, October 1956 to September 1982.
WATER TEMPERATURE: October 1948 to October 1951, October 1956 to September 1982.

INSTRUMENTATION.--Specific conductance was recorded continuously from January 1969 to September 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 173,000 microsiemens Apr. 12, 1974; minimum daily, 1,690 microsiemens July 8, 1960.
WATER TEMPERATURE: Maximum daily, 38.0°C Aug. 2, 1973; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV												
14...	1315	17	39200	8.1	16.0	0.50	11.4	141	0.8	K2	K18	2800
JAN												
09...	0828	13	62400	7.9	7.0	2.0	7.7	88	0.3	K24	52	3200
MAY												
07...	1600	9.2	40200	8.1	25.5	1.0	8.5	127	1.2	K2	88	3400
AUG												
06...	1545	1.6	53400	8.1	34.5	0.50	7.9	144	2.1	K11	1100	3800

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
NOV											
14...	2700	740	220	9000	75	22	0	136	112	2500	14000
JAN											
09...	3100	780	310	14000	110	42	0	182	149	2500	24000
MAY											
07...	3300	91	260	10000	75	32	0	111	91	3300	16000
AUG											
06...	3700	970	330	11000	78	39	0	104	86	3000	19000

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
NOV											
14...	<0.10	4.7	26200	26600	--	--	<0.010	<0.010	0.200	0.200	0.100
JAN											
09...	<0.10	6.9	42900	41700	0.380	0.390	0.020	0.010	0.400	0.400	0.370
MAY											
07...	0.40	3.9	30200	30600	--	--	<0.010	<0.010	<0.050	<0.050	0.080
AUG											
06...	3.9	6.5	36400	34400	0.050	--	0.010	<0.010	0.060	0.061	0.150

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	SEDI-MENT, SUS-PENDED (MG/L)
NOV											
14...	0.090	0.20	--	--	0.30	<0.010	<0.010	0.010	<0.010	0.03	3
JAN											
09...	0.360	0.23	--	--	0.60	<0.010	<0.010	<0.010	<0.010	--	4
MAY											
07...	0.080	0.52	--	--	0.60	0.030	0.010	<0.010	<0.010	--	6
AUG											
06...	0.120	0.25	0.18	0.30	0.40	0.010	<0.010	<0.010	<0.010	--	12

08082000 SALT FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
NOV											
14...	0.14	80	<10	2	<100	<10	<10	<1	<10	<10	10
JAN											
09...	0.14	87	30	2	<100	<10	<10	1	<10	<10	20
MAY											
07...	0.15	86	90	3	<100	<10	<4.0	2	<4	<4	650
AUG											
06...	0.05	77	10	3	<100	<10	2.0	<6	<1	<1	30

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
NOV											
14...	<10	120	90	0.1	<1	10	4	<10	11000	250	<10
JAN											
09...	<10	120	140	0.3	5	<10	1	<10	13000	430	<10
MAY											
07...	<4	120	140	<0.1	6	4	<10	<4.0	13000	370	<10
AUG											
06...	7	150	110	0.3	6	<1	7	4.0	19000	350	<10

08082500 BRAZOS RIVER AT SEYMOUR, TX

LOCATION.--Lat 33°34'51", long 99°16'02", Baylor County, Hydrologic Unit 12060101, on left bank at downstream side of bridge on U.S. Highways 277 and 283, 0.8 mi upstream from Wichita Valley Railway bridge, 1.0 mi southwest of courthouse in Seymour, and at mile 847.4.

DRAINAGE AREA.--15,538 mi², approximately, of which 9,566 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1923 to current year.

REVISED RECORDS.--WSP 808: 1924-29. WSP 1312: 1933. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,238.97 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 6, 1972, at datum 2.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. There are small diversions upstream from station for irrigation and for oil field operation. For statement regarding upstream regulation by Soil Conservation Service floodwater-retarding structures, see remarks paragraph for station 08080950. Gage-height telemeter (DCP) at station.

AVERAGE DISCHARGE.--67 years (water years 1925-91), 375 ft³/s (271,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,400 ft³/s Oct. 16, 1926 (gage height, 17.16 ft, from floodmark, present datum), from rating curve extended above 48,000 ft³/s on basis of slope-area measurement of 95,400 ft³/s; maximum gage height, 23.00 ft, present datum, Sept. 28, 1955 (discharge, 71,200 ft³/s); no flow at times.
Since 1906, the maximum stage was that of Sept. 28, 1955, and maximum discharge was that of Oct. 16, 1926.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood in 1906 reached about the same stage as the flood in 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 5	1500	*23,300	*14.62	June 7	0700	14,100	11.79

Minimum discharge, 15 ft³/s Nov. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	18	59	98	113	59	30	35	173	183	134	120
2	80	17	55	105	110	54	30	261	223	166	107	117
3	93	26	50	89	108	50	29	3270	5880	157	81	101
4	87	62	35	90	107	49	28	3110	17000	148	68	200
5	85	89	28	91	109	49	27	1830	19600	138	55	385
6	81	81	29	88	106	46	28	997	7790	130	50	295
7	85	76	28	73	100	44	28	683	11300	120	64	168
8	89	103	28	66	92	43	30	802	8270	113	49	169
9	139	136	28	89	100	43	26	670	6220	106	45	202
10	110	134	28	199	95	45	25	433	3760	100	42	193
11	136	130	28	191	87	42	26	336	2540	92	53	150
12	125	129	27	177	89	37	27	264	2170	88	865	143
13	101	119	24	161	79	31	25	299	1770	78	1550	139
14	88	111	24	144	74	29	28	322	1380	74	1280	261
15	77	125	25	127	66	30	37	260	1140	69	1490	348
16	69	115	73	119	65	37	27	228	911	65	1270	277
17	66	106	94	115	64	57	29	208	745	62	821	880
18	59	103	87	138	62	47	28	186	631	60	641	598
19	54	97	96	149	59	40	26	171	553	65	1200	1240
20	50	94	94	168	55	40	24	154	488	60	1240	5450
21	46	90	89	165	54	42	23	137	445	53	713	3110
22	41	86	77	165	58	39	22	128	403	52	454	1830
23	39	84	97	149	58	34	23	122	462	47	297	1670
24	40	80	98	136	55	35	24	169	486	63	235	1240
25	39	78	96	134	54	33	26	340	391	48	203	1000
26	39	78	89	134	53	35	28	436	312	53	179	811
27	35	79	96	131	52	36	25	375	301	65	153	678
28	28	74	107	124	51	30	31	329	283	66	134	573
29	23	70	105	118	---	28	48	329	234	97	126	497
30	21	66	81	113	---	29	48	248	206	89	119	440
31	19	---	83	113	---	29	---	198	---	111	114	---
TOTAL	2129	2656	1958	3959	2175	1242	856	17330	96067	2818	13832	23285
MEAN	68.7	88.5	63.2	128	77.7	40.1	28.5	559	3202	90.9	446	776
MAX	139	136	107	199	113	59	48	3270	19600	183	1550	5450
MIN	19	17	24	66	51	28	22	35	173	47	42	101
AC-FT	4220	5270	3880	7850	4310	2460	1700	34370	190500	5590	27440	46190

CAL YR 1990 TOTAL 200706 MEAN 550 MAX 30700 MIN 16 AC-FT 398100
WTR YR 1991 TOTAL 168307 MEAN 461 MAX 19600 MIN 17 AC-FT 333800

08082500 BRAZOS RIVER AT SEYMOUR, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1942 to current year. Chemical and biochemical analyses: October 1974 to September 1977. Sediment analyses: October 1974 to September 1977. Pesticide analyses: April 1975 to August 1977.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1959 to current year.
WATER TEMPERATUES: August 1959 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 80,400 microsiemens May 24, 1971; minimum daily, 47 microsiemens May 16, 1989.
WATER TEMPERATURES (1959-84, 1988 to current year): Maximum daily, 38.0°C Aug. 1, 1983; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 24,100 microsiemens Dec. 25; minimum daily, 1,480 microsiemens May 3.
WATER TEMPERATURE: Maximum daily, 35.0°C on several days during July and August; minimum daily 1.0°C Dec. 22, 23, Jan. 2-4.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
NOV									
13...	1345	118	16900	8.0	17.5	1700	1600	480	130
JAN									
28...	1105	123	13500	8.0	6.0	1500	1400	400	130
JUN									
04...	1400	17100	2100	8.8	20.5	520	510	190	11

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV									
13...	3200	33	14	140	1600	5100	0.30	6.4	10600
JAN									
28...	2300	26	14	170	1300	3400	1.3	6.5	7650
JUN									
04...	220	4	5.8	13	520	340	0.50	3.2	1300

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1990 TO SEPTEMBER 1991

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.	1990	2129	12900	8320	47800	3700	21300	1500	8450	*
NOV.	1990	2656	12700	8150	58400	3600	26000	1400	10300	*
DEC.	1990	1958	15600	10200	53900	4600	24500	1700	8950	*
JAN.	1991	3959	13300	8550	91400	3800	40800	1500	16000	*
FEB.	1991	2175	16100	10500	61700	4800	28000	1800	10300	*
MAR.	1991	1242	16900	11100	37200	5100	17000	1800	6090	*
APR.	1991	856	16400	10700	24700	4900	11200	1800	4100	*
MAY	1991	17330	4290	2680	125000	1100	53800	530	24800	600
JUNE	1991	96067	3320	2040	530000	860	223400	420	110100	480
JULY	1991	2818	15800	10300	78600	4700	35600	1700	13100	*
AUG.	1991	13832	7570	4750	177000	2100	76700	920	34400	1000
SEPT	1991	23285	4590	2840	179000	1200	75900	580	36300	650
TOTAL		168307	**	**	1465000	**	634000	**	283000	**
WTD.AVG.		461	5130	3220	**	1400	**	620	**	710

08082500 BRAZOS RIVER AT SEYMOUR, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12500	e13700	14000	15500	e14000	17100	e17500	17600	11400	13800	e13000	e10000
2	e12700	13700	e14000	e15600	14300	e17100	17400	e17000	11300	14500	12800	10200
3	12400	e12400	e14000	e15800	e14500	e17100	17400	1480	3690	14400	12800	e11000
4	e12900	11200	14000	16000	14700	17200	e16900	1530	2250	e14800	e14000	e10500
5	13400	8050	14100	17300	14700	17200	16600	e3000	1850	15400	16800	10000
6	13800	10700	14300	e16000	e14900	17300	16600	5560	1770	15300	15800	6060
7	e14000	e10300	13300	14600	15300	e17400	e16700	3840	2690	e15700	15700	7130
8	e14800	9940	14300	e14900	e15300	17600	16800	3540	2990	16000	12800	9640
9	15700	6140	e14300	15500	15300	17700	16900	e2800	e2500	16300	12800	23000
10	17400	8110	14200	7920	e16000	e17700	e17000	2080	2060	e16400	12900	21200
11	14500	13600	14200	e8000	16400	17700	17200	e4000	2760	16700	13200	e9000
12	7300	14900	14300	10900	17800	17700	17000	5410	e4500	e16700	e12500	9540
13	7250	17000	13900	10200	18100	17000	17000	8430	e5500	16700	12300	e9600
14	e9000	e18500	14100	11200	18100	17800	e17200	e7300	6210	e16800	4030	4530
15	10900	19800	14000	15300	e17900	17000	e17200	6360	8310	16900	6330	e4400
16	12500	13500	e13000	e15500	17700	e16000	18800	e6800	8310	e16800	6330	4930
17	e12700	e12000	12100	e15500	e17500	e14000	15400	7570	9330	16800	e7000	4260
18	13100	e12000	12200	13700	17200	13100	15400	6800	10500	16700	e8000	e7000
19	13900	11900	13400	11400	17200	e15000	14900	e7400	11600	17400	5680	6650
20	14000	12100	9980	e11400	17100	16200	15100	e8200	12000	19900	4700	4360
21	e14100	12300	e13000	12700	16900	16400	e15000	e9000	e13000	e19700	4160	2340
22	14200	e12500	e15500	10800	16900	17200	14900	9690	14100	19500	4840	e2400
23	14100	e12700	e17500	e13000	e16800	e17300	14800	11100	14100	19500	e5200	2490
24	13800	13100	19900	e15000	e16800	e17400	15200	e10000	e14000	19400	5530	2590
25	e13800	e13400	24100	17900	16800	17400	15200	3640	13000	16400	e7500	3230
26	13800	13700	24000	16600	16600	17400	14500	e3580	14300	e14200	e9000	3700
27	13800	13800	15800	e15000	e16600	17700	15100	3530	e14000	14100	10500	e4200
28	e13800	14000	16600	13500	16600	18100	15200	5230	13300	e14200	10500	4710
29	13700	11200	16100	13300	---	18400	16300	e15000	12500	14800	11300	5220
30	13800	14200	17000	13600	---	18100	17600	20900	e13000	15700	11900	5760
31	13800	---	17000	13700	---	17700	---	14100	---	13400	12300	---
MEAN	13100	12700	15100	13800	16400	17000	16300	7500	8560	16300	10100	7320

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	e23.0	7.0	2.0	e11.0	12.0	e21.0	18.0	22.0	24.0	e27.0	e26.0
2	e27.0	23.0	e7.0	e1.0	11.0	e12.0	27.0	e20.0	21.0	30.0	30.0	26.0
3	29.0	e21.0	e7.0	e1.0	e11.5	e11.0	25.0	22.0	19.0	28.0	25.0	e27.0
4	e28.0	9.0	7.0	1.0	12.5	11.0	e24.0	e22.0	22.0	e28.0	e25.0	e27.0
5	27.0	15.0	12.0	3.0	11.5	17.0	23.0	e20.0	24.0	25.0	25.0	28.0
6	22.0	17.0	10.0	e3.5	e12.0	16.0	20.0	18.0	25.0	25.0	35.0	29.0
7	e20.0	e10.0	12.0	4.5	15.0	e17.0	e20.0	22.0	25.0	e27.0	35.0	28.0
8	e17.0	9.0	13.0	e5.5	e15.5	18.0	19.0	21.0	25.0	30.0	34.0	30.0
9	15.0	13.0	e13.0	6.5	e15.0	18.0	16.0	e23.0	e26.0	33.0	30.0	30.0
10	13.0	9.0	13.0	5.0	e15.0	e19.0	e16.0	25.0	27.0	e32.0	24.0	31.0
11	18.0	24.0	13.5	e7.0	e16.0	20.0	17.0	e26.0	28.0	25.0	24.0	e29.0
12	18.0	18.0	14.0	10.0	17.0	14.0	24.0	26.0	e28.0	e30.0	e24.0	26.0
13	14.0	17.5	9.0	5.5	13.0	12.0	23.0	28.0	e27.0	34.0	25.0	e25.0
14	e17.0	e18.0	11.0	9.0	16.5	18.0	e25.0	e27.0	27.0	e32.0	24.0	24.0
15	20.0	19.0	9.5	11.0	e15.5	11.0	e27.0	25.0	28.0	30.0	27.0	e24.0
16	20.0	13.0	e9.0	e11.0	8.0	e14.0	27.0	e27.0	27.0	e32.0	28.0	24.0
17	e17.0	e15.0	9.0	e11.0	e12.0	e16.0	28.0	28.0	26.0	34.0	e29.0	25.0
18	15.0	e17.0	12.0	8.5	15.0	21.0	28.0	23.0	26.0	25.0	e30.0	e20.0
19	16.0	20.0	12.0	9.0	13.0	e20.0	17.0	e23.0	27.0	35.0	31.0	15.0
20	13.0	22.0	7.0	e8.0	17.0	19.0	17.0	e23.0	27.0	35.0	28.0	16.0
21	e15.0	20.0	e3.0	7.0	12.0	24.0	e17.0	e24.0	e27.0	e35.0	30.0	15.0
22	17.0	e19.0	e1.0	8.0	10.0	18.0	22.0	24.0	27.0	35.0	27.0	e17.0
23	19.0	e18.0	e1.0	e9.0	e11.0	e19.0	25.0	24.0	29.0	35.0	e27.0	20.0
24	22.0	17.0	5.0	e10.0	e12.0	e20.0	26.0	e24.0	e30.0	25.0	26.0	20.0
25	e22.0	e18.0	3.0	11.0	e14.0	21.0	26.0	24.0	32.0	29.0	e27.0	22.0
26	23.0	20.0	3.0	3.0	17.0	24.5	25.0	e24.0	27.0	e28.0	e29.0	22.0
27	20.0	20.0	3.0	e5.0	e17.0	22.0	28.0	24.0	e29.0	27.0	30.0	e20.0
28	e21.0	13.0	4.0	6.0	18.0	22.0	19.0	30.0	31.0	e27.0	30.0	18.0
29	23.0	23.0	8.0	7.0	---	19.0	27.0	e28.0	25.0	27.0	32.0	19.0
30	23.0	14.0	2.0	7.0	---	12.0	19.0	24.0	e25.0	25.0	31.0	19.0
31	24.0	---	4.0	11.0	---	21.0	---	24.0	---	24.0	30.0	---
MEAN	20.0	17.1	7.9	6.7	13.7	17.4	22.6	23.9	26.3	29.4	28.4	23.4

e Estimated

08082700 MILLERS CREEK NEAR MUNDAY, TX

LOCATION.--Lat 33°19'45", long 99°27'53", Throckmorton County, Hydrologic Unit 12060101, near right bank at downstream side of bridge on Farm Road 1720, 12.7 mi southeast of Munday, and 24.6 mi upstream from mouth.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--July 1963 to current year.
Water-quality records.--Sediment records: October 1976 to September 1978.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,350 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good, except those periods of estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--28 years (water years 1964-91), 7.78 ft³/s (1.02 in/yr), 5,640 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,600 ft³/s Aug. 4, 1978 (gage height, 17.53 ft); no flow most of time.
Maximum stage since 1930, 18.0 ft in October 1962, from information by local resident.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1883 occurred June 13, 1930, and exceeded 18.0 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 3	1950	2,000	13.74	June 9	1530	*2,730	*14.13
June 4	1500	981	12.93				

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
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	e.00	e.03	.07	.00
2	.00	.00	.00	.00	.00	.00	.00	2.9	e.29	e.01	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	827	84	e.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	631	726	e.00	.00	.24
5	.00	.00	.00	.00	.00	.00	.00	49	350	e.00	.00	.36
6	.00	.00	.00	.00	.00	.00	.00	13	108	e.00	.00	.13
7	.00	.00	.00	.00	.00	.00	.00	5.9	137	e.00	.00	.10
8	.01	1.6	.00	.00	.00	.00	.00	72	101	e.00	.00	.06
9	.38	.22	.00	3.3	.00	.00	.00	54	1390	e.00	.00	.00
10	.07	.07	.00	6.8	.00	.00	.00	13	565	e.00	.00	.00
11	.01	.02	.00	.61	.00	.00	.00	5.4	86	e.00	.00	.00
12	.00	.00	.00	.13	.00	.00	.00	2.4	28	e.00	.02	.00
13	.00	.00	.00	.07	.00	.00	.00	1.0	15	e.00	.13	.02
14	.00	.00	.00	.03	.00	.00	.00	e.69	5.9	e.00	.17	e2.6
15	.00	.00	.00	.03	.00	.00	.00	e.29	3.2	e.00	.09	1.1
16	.00	.00	.00	.00	.00	.00	.00	e.10	e2.2	.00	.02	.70
17	.00	.00	.00	.00	.00	.00	.00	e.00	e1.7	.00	.12	e1.3
18	.00	.00	.00	2.0	.00	.00	.00	e.00	e1.4	.00	.22	e1.9
19	.00	.00	.00	2.4	.00	.00	.00	e.00	e.89	.00	.11	e1.4
20	.00	.00	.00	.45	.00	.00	.00	e.00	e.71	.00	.06	e3.8
21	.00	.00	.00	.14	.00	.00	.00	e.00	e.54	.00	.00	6.0
22	.00	.00	.00	.08	.00	.00	.00	e.00	e.41	.00	.00	2.1
23	.00	.00	.00	.04	.00	.00	.00	e.00	e.27	.00	.00	1.0
24	.00	.00	.00	.04	.00	.00	.00	e.00	e.17	1.8	.00	.63
25	.00	.00	.00	.02	.00	.00	.00	e.77	e.13	10	.00	.42
26	.00	.00	.00	.00	.00	.00	.00	e.00	e.11	5.5	.00	.28
27	.00	.00	.00	.00	.00	.00	.00	e.00	e.10	.96	.00	.18
28	.00	.00	.00	.00	.00	.00	.00	e.00	e.08	.65	.00	.11
29	.00	.00	.00	.00	---	.00	.00	e.00	e.06	.37	.00	.09
30	.00	.00	.00	.00	---	.00	.00	e.00	e.05	.22	.00	.06
31	.00	---	.00	.00	---	.00	---	e.00	---	.13	.00	---
TOTAL	0.47	1.91	0.00	16.14	0.00	0.00	0.00	1678.45	3608.21	19.67	1.01	24.58
MEAN	.015	.064	.000	.52	.000	.000	.000	54.1	120	.63	.033	.82
MAX	.38	1.6	.00	6.8	.00	.00	.00	827	1390	10	.22	6.0
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.9	3.8	.00	32	.00	.00	.00	3330	7160	39	2.0	49
CFSM	.00	.00	.00	.01	.00	.00	.00	.52	1.16	.01	.00	.01
IN.	.00	.00	.00	.01	.00	.00	.00	.60	1.29	.01	.00	.01

CAL YR 1990	TOTAL	5553.83	MEAN	15.2	MAX	1470	MIN	.00	AC-FT	11020	CFSM	.15	IN.	1.99
WTR YR 1991	TOTAL	5350.44	MEAN	14.7	MAX	1390	MIN	.00	AC-FT	10610	CFSM	.14	IN.	1.91

e Estimated

08082800 MILLERS CREEK RESERVOIR NEAR BOMARTON, TX

LOCATION.--Lat 33°24'32", long 99°23'19", Baylor County, Hydrologic Unit 12060101, at intake tower on left bank of Millers Creek, 1.1 mi upstream from dam, 7.1 mi southeast of Bomarton, and 13.2 mi upstream from mouth.

DRAINAGE AREA.--240 mi².

PERIOD OF RECORD.--August 1974 to current year.
Water-quality records.--Chemical analyses: October 1975 to September 1984.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Freese and Nichols, Inc., Consulting Engineers bench mark).

REMARKS.--The reservoir is formed by an earthfill dam 9,250 ft long. The dam was completed in 1974 and storage began in July 1974. Dead storage, 1,240 acre-ft below elevation, 1,303.4 ft. The reservoir is used for municipal and industrial water supply. The uncontrolled spillway is an open cut 3,000 ft wide located on left bank about 800 ft upstream from levee. The service spillway is an uncontrolled morning-glory-type drop inlet, 16.5 ft square, that discharges through a 5.0-foot-square concrete conduit. Low-flow releases are made by valves in the outlet vault of the drop inlet. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,355.0	-
Crest of spillway	1,340.1	49,080
Crest of spillway	1,334.4	32,230
Lowest gated outlet (invert)	1,305.0	1,660
Dead storage	1,303.4	1,240

COOPERATION.--The area-capacity tables, prepared from data of Sept. 17, 1965, were provided by Freese and Nichols, Inc., Consulting Engineers. Record of diversions provided by North Central Texas Municipal Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 53,850 acre-ft June 26, 1982 (elevation, 1,341.42 ft); minimum contents were below dead storage elevation prior to Apr. 20, 1977, and July 17 to Aug. 3, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 35,840 acre-ft June 10 at 2000 hours (elevation, 1,335.81 ft); minimum, 24,800 acre-feet May 1-3 (elevation, 1,331.00 ft).

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

1,331.0	24,800	1,333.0	28,930	1,335.0	33,710
1,332.0	26,800	1,334.0	31,240	1,336.0	36,340

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28250	27310	26930	26780	27080	26720	25840	24800	28330	31960	30150	29510
2	28180	27270	26920	26740	27100	26600	25880	24800	28570	31910	30080	29510
3	28250	27230	26920	26740	27100	26620	25780	24800	28910	31860	29990	29480
4	28250	27230	26880	26660	27060	26600	25780	27480	30590	31810	29920	29720
5	28250	27350	26910	26700	27080	26580	25740	28360	31800	31680	29880	29720
6	28160	27310	26820	26700	27030	26540	25720	28360	32230	31640	29810	29690
7	28080	27200	26840	26740	27080	26520	25700	28460	32990	31540	29760	29690
8	28060	27440	26860	26780	27060	26500	25600	28700	33260	31490	29690	29620
9	28080	27460	26840	26970	27080	26460	25580	28930	34660	31390	29650	29600
10	28080	27460	26840	27010	27030	26440	25520	29020	35840	31340	29620	29550
11	28060	27460	26860	27080	27060	26420	25480	29020	35340	31240	29690	29480
12	28060	27460	26800	27080	27100	26340	25460	29020	34840	31190	29780	29420
13	28010	27440	26760	27060	27030	26280	25440	29050	34390	31080	29880	29780
14	27950	27460	26800	27080	26950	26240	25360	29050	34030	31010	29880	29850
15	27970	27440	26720	27060	26930	26220	25300	29050	33760	33090	29830	29810
16	27970	27380	26800	27080	26950	26240	25280	28980	33490	30890	29810	29830
17	27840	27350	26890	27120	26970	26240	25240	28930	33260	30850	29900	29720
18	27820	27350	26890	27200	26890	26240	25220	28890	33140	30750	29880	29760
19	27760	27420	26970	27290	26840	26240	25160	28800	33020	30660	29850	29690
20	27630	27420	26890	27140	26840	26220	25120	28800	32900	30550	29810	29670
21	27570	27380	26740	27200	26800	26220	25040	28670	32750	30500	29740	29580
22	27520	27310	26740	27180	26780	26160	25040	28670	32620	30430	29690	29550
23	27520	27350	26720	27200	26760	26120	25040	28670	32550	30360	29650	29530
24	27500	27270	26740	27180	26680	26100	25040	28610	32520	30290	29600	29480
25	27460	27310	26780	27140	26700	26100	25200	28670	32480	30290	29550	29620
26	27460	27200	26740	27140	26700	26160	25120	28670	32400	30340	29510	29600
27	27420	27160	26780	27120	26700	26040	25100	28670	32300	30360	29420	29850
28	27420	27180	26890	27180	26680	26000	25020	28610	32200	30360	29580	29510
29	27380	27080	26720	27120	---	25920	24980	28480	32100	30320	29510	29510
30	27350	26970	26700	27100	---	25820	24840	28420	32010	30270	29390	29480
31	27330	---	26780	27120	---	25880	---	28350	---	30200	29420	---
MAX	28250	27460	26970	27290	27100	26720	25880	29050	35840	33090	30150	29850
MIN	27330	26970	26700	26660	26680	25820	24840	24800	28330	30200	29390	29420
(†)	1332.25	1332.08	1331.99	1332.15	1331.94	1331.54	1331.02	1332.73	1334.31	1333.55	1333.21	1333.24
(Φ)	-900	-360	-190	+340	-440	-800	-1040	+3510	+3660	-1810	-780	+60
(††)	94.5	81.6	92.9	94.0	80.3	98.1	111	102	120	159	120	97.4

CAL YR 1990 MAX 36850 MIN 19870 (Φ) +6570 (††) 1230
WTR YR 1991 MAX 35840 MIN 24800 (Φ) +1250 (††) 1250

(†) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.
(††) Diversions, in acre-feet, for municipal use by North Central Texas Municipal Water Authority.

08083100 CLEAR FORK BRAZOS RIVER NEAR ROBY, TX

LOCATION.--Lat 32°47'15", long 100°23'18", Fisher County, Hydrologic Unit 12060102, on right bank at downstream side of pile bent of bridge on State Highway 70, 3.0 mi north of Roby, 3.2 mi upstream from Cottonwood Creek, and 255.7 mi upstream from mouth.

DRAINAGE AREA.--228 mi².

PERIOD OF RECORD.--December 1961 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,885.09 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. There are several small diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--29 years (water years 1963-91), 10.2 ft³/s (0.61 in/yr), 7,390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,050 ft³/s Oct. 18, 1965 (gage height, 21.48 ft); maximum gage height, 21.52 ft Sept. 19, 1969; no flow at times in 1963-67.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since the 1890's, about 22 ft in May and June 1935, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 2	2300	528	10.62	June 9	0100	*1,040	*12.95
June 3	1900	522	10.58	July 27	2300	385	9.69
June 7	0300	342	9.35				

Minimum daily discharge, 0.55 ft³/s June 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.76	.71	.79	.95	1.1	1.2	1.3	.71	.55	4.4	4.6	4.5
2	.76	.72	.79	.95	1.1	1.2	1.3	80	76	4.4	4.2	4.4
3	.79	.75	.80	.96	1.1	1.1	1.3	192	348	4.4	4.0	4.4
4	.79	.88	.79	.96	1.1	1.1	1.3	18	153	4.3	3.9	4.3
5	.86	.86	.80	.98	1.1	1.1	1.3	2.6	18	4.2	3.8	4.3
6	.92	.85	.82	1.1	1.1	1.1	1.4	1.5	114	4.2	3.8	4.4
7	.88	.82	.80	1.1	1.1	1.1	1.4	1.2	171	4.1	3.8	4.5
8	1.8	.98	.82	1.1	1.1	1.1	1.4	2.9	280	4.1	3.7	4.4
9	2.0	.96	.85	1.2	1.1	1.1	1.3	70	677	4.1	3.7	4.5
10	.89	.92	.86	1.2	1.1	1.1	1.3	11	94	4.0	3.7	4.3
11	.81	.89	.86	1.1	1.1	1.1	1.3	2.4	34	4.0	36	4.2
12	.78	.87	.86	1.1	1.1	1.1	1.3	1.7	15	3.9	19	4.2
13	.74	.85	.83	1.1	1.1	1.1	1.2	1.4	8.8	3.9	29	4.3
14	.71	.81	.83	1.0	1.1	1.1	1.2	1.3	6.7	3.9	18	8.1
15	.70	.81	.84	1.0	1.1	1.1	1.1	1.6	6.1	3.8	5.7	11
16	.69	.80	1.2	1.0	1.1	1.1	1.1	2.4	5.9	3.7	4.6	6.1
17	.68	.80	1.1	1.0	1.3	1.2	1.1	1.4	5.8	3.8	93	9.7
18	.67	.81	1.0	1.3	1.2	1.2	1.0	1.1	9.7	3.7	139	37
19	.69	.81	1.0	1.4	1.1	1.2	.97	.90	7.7	3.7	29	15
20	.69	.81	.95	1.3	1.0	1.2	.90	.79	5.7	3.6	8.4	11
21	.69	.81	.94	1.3	1.1	1.2	.86	.72	5.4	3.5	5.7	7.8
22	.69	.81	.92	1.2	1.1	1.2	.83	.70	5.2	3.4	5.1	6.0
23	.69	.81	.92	1.1	1.1	1.2	.81	.68	5.0	3.4	4.9	5.2
24	.71	.81	.92	1.1	1.1	1.2	.81	.65	4.9	3.5	4.8	5.0
25	.71	.79	.92	1.1	1.1	1.2	.82	.63	4.7	3.5	4.7	4.8
26	.71	.80	.92	1.1	1.1	1.2	.82	.61	4.6	11	4.7	4.6
27	.72	.81	.93	1.1	1.2	1.2	.81	.60	4.5	79	4.6	4.6
28	.71	.79	.97	1.1	1.3	1.3	.80	.60	4.5	105	4.5	4.5
29	.71	.79	.99	1.1	---	1.3	.76	.59	4.4	28	4.5	4.4
30	.71	.79	.97	1.1	---	1.3	.73	.56	4.4	7.8	4.5	4.4
31	.71	---	.97	1.1	---	1.3	---	.56	---	5.7	4.4	---
TOTAL	25.37	24.72	27.96	34.20	31.3	36.2	32.52	401.80	2084.55	334.0	473.3	205.9
MEAN	.82	.82	.90	1.10	1.12	1.17	1.08	13.0	69.5	10.8	15.3	6.86
MAX	2.0	.98	1.2	1.4	1.3	1.3	1.4	192	677	105	139	37
MIN	.67	.71	.79	.95	1.0	1.1	.73	.56	.55	3.4	3.7	4.2
AC-FT	50	49	55	68	62	72	65	797	4130	662	939	408
CFSM	.00	.00	.00	.00	.00	.01	.00	.06	.30	.05	.07	.03
IN.	.00	.00	.00	.01	.01	.01	.01	.07	.34	.05	.08	.03

CAL YR 1990 TOTAL 1199.41 MEAN 3.29 MAX 336 MIN .35 AC-FT 2380 CFSM .01 IN. .20
WTR YR 1991 TOTAL 3711.82 MEAN 10.2 MAX 677 MIN .55 AC-FT 7360 CFSM .04 IN. .61

08084000 CLEAR FORK BRAZOS RIVER AT NUGENT, TX

LOCATION.--Lat 32°41'24", long 99°40'09", Jones County, Hydrologic Unit 12060102, on right bank 33 ft downstream from bridge on Farm Road 600 at Nugent, 2 mi downstream from Elm Creek, 4 mi upstream from Deadman Creek, and 167.8 mi upstream from mouth.

DRAINAGE AREA.--2,199 mi^2.

PERIOD OF RECORD.--February 1924 to current year.
Water-quality records.--Chemical analyses: August 1948 to September 1953. Chemical and biochemical analyses: February 1968 to September 1981.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,531.91 ft above National Geodetic Vertical Datum of 1929 (levels by Brazos River Authority). Prior to Dec. 12, 1933, nonrecording gage at site 575 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow is affected by four upstream reservoirs with a total capacity of 103,600 acre-ft. There are numerous diversions above station for municipal supply and oil field operation that materially affect streamflow.

AVERAGE DISCHARGE.--14 years (water years 1925-38) prior to completion of Fort Phantom Hill Reservoir, 186 ft^3/s (134,800 acre-ft/yr); 53 years (water years 1939-91) partially regulated, 83.2 ft^3/s (60,280 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 47,000 ft^3/s Sept. 8, 1932 (gage height, 27.05 ft), site then in use, from rating curve extended above 25,000 ft^3/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 30 ft in 1876; floods in 1900 and May 1923 reached stages of 24 and 24.5 ft, respectively, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,760 ft^3/s June 9 at 1030 hours (gage height, 13.62 ft); minimum daily, 2.9 ft^3/s June 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	11	14	16	24	16	13	7.8	2.9	40	119	30
2	14	11	14	16	25	16	13	7.8	42	35	67	28
3	15	11	14	15	26	17	13	8.4	581	33	48	30
4	16	15	14	15	25	17	13	8.4	1280	32	39	29
5	17	17	14	15	24	17	13	300	1340	32	33	29
6	19	18	14	16	24	17	13	99	650	30	28	48
7	17	21	14	17	24	16	12	38	1210	28	28	116
8	14	19	13	17	23	16	12	29	2790	27	26	75
9	19	29	13	19	21	16	12	18	4330	26	25	92
10	63	25	14	56	20	16	11	28	4020	24	23	79
11	46	27	14	70	20	16	11	59	2750	23	272	69
12	26	23	14	53	20	16	11	61	1700	22	365	57
13	19	20	14	35	20	16	11	33	865	21	114	127
14	18	17	14	29	20	15	11	22	488	20	123	310
15	16	17	14	25	19	16	10	16	541	19	187	513
16	14	16	15	22	18	16	10	14	586	19	173	329
17	13	15	17	20	18	17	10	23	465	18	208	418
18	11	15	19	24	18	17	9.6	32	525	17	144	343
19	11	15	21	83	18	16	9.5	22	316	16	448	365
20	11	16	21	106	17	17	9.2	15	242	15	340	393
21	11	16	19	71	17	17	9.0	11	194	15	121	311
22	10	21	18	44	17	21	9.0	9.7	158	13	73	267
23	10	27	17	34	17	23	9.0	8.4	130	13	56	195
24	10	17	15	30	17	20	11	9.9	107	60	49	159
25	11	17	15	28	17	20	12	8.5	91	106	47	133
26	11	18	15	27	17	17	14	6.6	77	114	123	115
27	12	17	15	25	16	17	15	5.6	66	258	51	101
28	12	16	16	24	16	17	13	4.3	56	490	41	90
29	12	15	17	23	---	15	10	3.7	49	490	35	78
30	12	14	16	23	---	14	8.7	4.2	43	603	32	71
31	12	---	16	23	---	13	---	4.0	---	555	31	---
TOTAL	516	536	480	1021	558	520	338.0	917.3	25694.9	3214	3469	5000
MEAN	16.6	17.9	15.5	32.9	19.9	16.8	11.3	29.6	856	104	112	167
MAX	63	29	21	106	26	23	15	300	4330	603	448	513
MIN	10	11	13	15	16	13	8.7	3.7	2.9	13	23	28
AC-FT	1020	1060	952	2030	1110	1030	670	1820	50970	6370	6880	9920

CAL YR 1990	TOTAL	37352.3	MEAN	102	MAX	7650	MIN	1.7	AC-FT	74090
WTR YR 1991	TOTAL	42264.2	MEAN	116	MAX	4330	MIN	2.9	AC-FT	83830

08084800 CALIFORNIA CREEK NEAR STAMFORD, TX

LOCATION.--Lat 32°55'51", long 99°38'32", Jones County, Hydrologic Unit 12060103, near right bank at downstream side of bridge on Farm Road 142, 9 mi east of Stamford, and 19.4 mi upstream from Paint Creek.

DRAINAGE AREA.--478 mi^2.

PERIOD OF RECORD.--October 1962 to current year.
Water-quality records.--Specific conductance: October 1962 to September 1979. Water temperature: October 1962 to September 1979.

REVISED RECORDS.--WSP 2122: 1965. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,470 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. There are three small diversions upstream from station.

AVERAGE DISCHARGE.--29 years, 35.7 ft^3/s (1.01 in/yr), 25,860 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft^3/s Aug. 4, 1978 (gage height, 31.00 ft, from floodmark), from rating curve extended above 21.0 ft on basis of field discharge estimates of peak flows; no flow at times.
Maximum stage since at least 1897, that of Aug. 4, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1962, reached a stage of 29.6 ft, from floodmark; flood of July 1961 (stage unknown) was third highest. Other large floods are reported to have occurred in June 1909, June 24, 1915, and May 1957; flood of September 1962 reached a stage of 28.1 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*).

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 4	0200	1,050	15.51	Aug. 11	2330	985	15.04
June 9	0500	*3,120	24.03	Aug. 14	0830	1,770	19.50
July 25	1400	604	12.35	Aug. 18	0130	2,540	22.88
July 29	0530	1,800	19.64				

Minimum discharge, 0.86 ft^3/s June 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	4.4	4.5	5.0	9.1	6.0	3.6	2.4	1.0	e9.0	46	8.6
2	13	4.3	4.3	5.0	8.9	7.5	3.3	2.5	4.1	e8.0	36	8.5
3	21	4.2	4.4	5.2	9.6	7.1	3.1	2.7	391	e7.5	27	8.2
4	16	6.0	4.2	e4.6	9.3	6.0	3.1	2.4	798	e7.0	20	8.0
5	14	6.5	4.1	4.7	9.3	5.4	3.1	62	778	e6.0	16	9.7
6	13	6.3	4.4	5.8	9.0	5.1	3.2	62	1090	e5.6	12	11
7	12	12	4.1	e5.0	8.5	5.4	3.3	28	1210	e5.0	14	12
8	13	13	4.4	5.5	8.0	5.7	3.2	37	1970	e4.8	16	8.8
9	11	11	4.2	13	7.8	5.2	2.9	49	2720	e4.5	10	8.2
10	9.3	9.2	4.2	41	7.8	4.8	2.6	37	1640	e4.4	8.6	9.8
11	14	12	4.5	53	7.4	4.5	2.6	33	616	e4.2	358	8.9
12	16	11	4.4	39	7.3	4.4	2.7	16	214	e4.0	811	7.5
13	15	8.6	4.4	24	7.2	4.4	2.9	9.2	103	e3.9	353	14
14	10	7.2	4.4	17	8.5	4.4	2.7	6.4	57	e3.8	1280	120
15	8.8	6.4	4.4	13	7.8	4.3	3.1	8.6	50	3.8	192	203
16	7.6	6.0	5.6	12	6.9	4.2	3.1	8.8	41	3.3	74	91
17	6.3	5.6	6.1	10	6.4	4.4	2.9	11	38	3.2	1110	51
18	6.4	5.5	5.7	27	8.6	6.4	3.0	7.4	e36	3.2	1520	44
19	6.1	5.1	10	83	8.7	4.3	3.1	5.2	e35	2.9	184	38
20	5.0	5.0	10	83	7.0	5.2	2.9	23	e33	2.7	219	40
21	5.0	5.6	9.2	49	6.3	5.5	2.8	23	e30	2.3	70	39
22	6.0	6.0	e5.6	37	6.2	5.4	2.7	11	e25	2.0	e44	34
23	5.1	6.0	e4.5	28	5.8	4.9	2.8	7.1	e22	1.9	e32	28
24	5.0	5.6	e4.0	22	6.0	4.6	3.1	5.6	e20	2.2	e26	21
25	4.8	5.1	e4.6	17	6.6	4.4	3.5	4.3	e17	437	e22	19
26	4.9	5.0	5.0	15	6.3	4.4	5.4	3.7	e15	250	e19	15
27	5.1	4.6	5.0	14	5.7	4.3	3.9	3.2	e14	659	e17	12
28	5.0	4.5	4.7	13	5.7	4.0	3.0	2.3	e12	1480	e14	10
29	4.6	4.6	4.7	12	---	3.9	2.7	1.6	e11	1490	12	9.5
30	4.4	4.4	e4.5	11	---	4.0	2.6	1.4	e10	210	11	8.6
31	4.2	---	5.0	10	---	3.7	---	1.2	---	71	9.8	---
TOTAL	287.6	200.7	159.1	683.8	211.7	153.8	92.9	478.0	12001.1	4702.2	6583.4	906.3
MEAN	9.28	6.69	5.13	22.1	7.56	4.96	3.10	15.4	400	152	212	30.2
MAX	21	13	10	83	9.6	7.5	5.4	62	2720	1490	1520	203
MIN	4.2	4.2	4.0	4.6	5.7	3.7	2.6	1.2	1.0	1.9	8.6	7.5
AC-FT	570	398	316	1360	420	305	184	948	23800	9330	13060	1800
CFSM	.02	.01	.01	.05	.02	.01	.01	.03	.84	.32	.44	.06
IN.	.02	.02	.01	.05	.02	.01	.01	.04	.93	.37	.51	.07

CAL YR 1990 TOTAL 19791.06 MEAN 54.2 MAX 2170 MIN .16 AC-FT 39260 CFSM .11 IN. 1.54
WTR YR 1991 TOTAL 26460.6 MEAN 72.5 MAX 2720 MIN 1.0 AC-FT 52480 CFSM .15 IN. 2.06

e Estimated

08085500 CLEAR FORK BRAZOS RIVER AT FORT GRIFFIN, TX

LOCATION.--Lat 32°56'04", long 99°13'27", Shackelford County, Hydrologic Unit 12060104, on right bank just downstream from pier of bridge on old Fort Griffin-Throckmorton Road, 0.4 mi northeast of Fort Griffin, 1.0 mi upstream from bridge on U.S. Highway 283, 1.7 mi upstream from Mill Creek, and 74.6 mi upstream from mouth.

DRAINAGE AREA.--3,988 mi².

PERIOD OF RECORD.--December 1923 to current year.
Water-quality records.--Chemical analyses: November 1949 to September 1951, November 1967 to September 1979, October 1981 to September 1984. Specific Conductance: November 1949 to September 1951, November 1967 to September 1979, October 1981 to September 1984. Water Temperature: November 1949 to September 1951, November 1967 to September 1979, October 1981 to September 1984. Suspended-Sediment Discharge: November 1949 to September 1951.

REVISED RECORDS.--WSP 1392: 1949. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,174.09 ft above National Geodetic Vertical Datum of 1929. Prior to June 23, 1932, nonrecording gage at same site and datum.

REMARKS.--Records good. There are diversions upstream from station for irrigation, municipal supply, and for oil field operation that materially affect low flow. Gage-height telemeter at station.

AVERAGE DISCHARGE.--67 years (water years 1925-91), 227 ft³/s (164,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 149,000 ft³/s Aug. 4, 1978 (gage height, 38.88 ft, from floodmark), from rating curve extended above 33,600 ft³/s on basis of contracted-opening and flow-over-road measurement of peak flow; no flow at times.
Maximum stage since 1876, that of Aug. 4, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1900 reached a stage of 38.0 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,900 ft³/s and maximum (*).

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 3	1830	4,260	14.37	June 10	1530	*8,460	*24.24
June 3	0530	6,720	20.05				

Minimum discharge, 15 ft³/s June 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	318	46	55	53	109	101	47	30	16	100	659	81
2	274	48	53	51	112	101	44	27	46	93	359	82
3	248	48	50	50	104	92	44	2950	3990	86	184	80
4	243	52	44	49	108	93	44	2940	3270	82	142	76
5	216	59	66	49	106	86	43	2900	3130	76	114	72
6	194	70	48	53	107	104	45	1360	2900	74	96	70
7	171	66	43	53	107	93	41	422	3330	72	82	75
8	152	66	45	52	102	90	40	637	4080	69	72	90
9	140	81	47	60	103	87	40	287	6510	65	66	247
10	138	79	46	108	101	79	35	305	8170	60	68	204
11	132	90	46	110	99	77	35	220	7530	57	79	161
12	121	83	50	186	97	73	34	173	5480	53	1770	137
13	164	74	46	183	103	63	34	154	2860	47	1970	136
14	144	70	45	152	97	61	62	166	1570	43	1010	261
15	121	69	49	119	97	61	47	131	1090	44	1510	1270
16	106	65	52	102	91	57	37	111	1060	43	509	908
17	98	59	54	94	88	59	37	93	1050	42	438	629
18	87	61	56	118	90	59	34	83	862	40	1800	494
19	80	61	56	189	88	60	31	73	807	34	1720	584
20	74	59	58	249	94	60	29	69	613	29	559	527
21	62	60	56	346	100	61	28	66	459	25	681	470
22	57	61	e54	279	106	71	28	64	365	26	351	444
23	51	61	e50	216	113	58	25	66	309	30	214	379
24	51	61	58	174	111	53	27	67	263	31	164	302
25	53	59	58	154	106	66	28	53	223	130	127	246
26	58	77	58	138	100	61	32	41	196	308	125	207
27	55	65	52	128	94	62	26	35	183	370	117	180
28	57	60	50	124	93	57	22	34	154	1070	149	160
29	59	60	52	121	---	55	31	35	134	2080	113	148
30	56	59	53	117	---	52	37	27	108	1730	98	137
31	46	---	53	112	---	48	---	21	---	800	88	---
TOTAL	3826	1929	1603	3989	2826	2200	1087	13640	60758	7809	15434	8857
MEAN	123	64.3	51.7	129	101	71.0	36.2	440	2025	252	498	295
MAX	318	90	66	346	113	104	62	2950	8170	2080	1970	1270
MIN	46	46	43	49	88	48	22	21	16	25	66	70
AC-FT	7590	3830	3180	7910	5610	4360	2160	27050	120500	15490	30610	17570

CAL YR 1990 TOTAL 147107.4 MEAN 403 MAX 12600 MIN 6.1 AC-FT 291800
WTR YR 1991 TOTAL 123958 MEAN 340 MAX 8170 MIN 16 AC-FT 245900

e Estimated

08086212 HUBBARD CREEK BELOW ALBANY, TX

LOCATION.--Lat 32°43'58", long 99°08'25", Shackelford County, Hydrologic Unit 12060105, on left bank 0.5 mi downstream from Salt Prong Hubbard Creek, 2.8 mi upstream from Newcomb Creek, 4.5 mi upstream from U.S. Highway 180, 9.1 mi east of Albany, 22.6 mi upstream from Hubbard Creek Reservoir, and 35.2 mi upstream from mouth.

DRAINAGE AREA.--613 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,184.99 ft above National Geodetic Vertical Datum of 1929. Prior to June 12, 1968, water-stage recorder at site 2.1 mi downstream at datum 7.63 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--25 years, 61.4 ft³/s (1.36 in/yr), 44,480 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 330,000 ft³/s Aug. 4, 1978 (gage height, 41.41 ft, from floodmark), from rating curve extended above 110 ft³/s on basis of step-backwater method and computation of flow-through-culverts, contracted-openings, and flow-over-road determination of 330,000 ft³/s at site 4.5 mi downstream; no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 3	1700	4,430	13.78	Sept. 14	0500	*4,970	*14.53
Aug. 11	1530	3,070	11.57				

Minimum discharge, no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	3.0	1.7	1.3	4.2	1.4	1.9	2.5	.00	6.2	9.1	4.3
2	2.0	3.5	1.5	1.2	4.2	1.5	1.6	2.0	36	5.9	7.1	4.0
3	2.0	4.3	1.6	e1.2	4.1	1.6	1.0	1.2	2770	5.9	5.1	3.4
4	2.1	8.0	1.6	e1.3	4.1	1.6	1.1	.93	665	5.8	3.4	2.9
5	1.9	7.9	1.5	e1.3	4.1	1.6	1.2	.16	102	5.5	2.2	2.4
6	1.6	6.3	1.5	e1.3	4.1	1.5	1.4	.19	103	5.2	1.8	2.0
7	1.4	5.7	1.4	e1.3	3.8	1.5	1.6	.36	314	4.7	.98	2.6
8	1.5	8.6	1.4	e1.4	3.7	1.5	2.8	149	294	4.0	.81	42
9	2.0	11	1.4	e1.7	3.6	1.5	4.5	99	307	3.3	.68	48
10	2.0	11	1.4	e8.1	3.3	1.4	3.8	25	115	3.0	.71	22
11	2.1	9.3	1.4	e6.9	3.3	1.3	2.5	10	66	2.4	1080	14
12	2.2	9.6	1.4	6.8	3.2	1.2	1.8	5.9	52	2.2	670	9.5
13	2.1	9.8	1.4	5.0	3.1	1.2	2.1	5.8	38	2.3	330	122
14	1.8	7.9	1.4	e4.3	2.7	1.3	1.8	2.9	28	2.3	160	2350
15	1.6	5.6	1.4	3.7	2.7	1.3	2.0	1.7	128	1.9	134	196
16	1.6	4.3	1.7	3.5	3.2	1.3	2.1	1.2	77	2.0	59	94
17	1.4	4.2	1.9	3.5	3.2	1.7	1.4	.78	54	2.0	36	97
18	1.3	3.7	2.0	4.8	3.2	2.1	1.1	.44	59	1.8	49	118
19	1.3	3.5	2.6	10	3.3	2.2	1.0	.19	41	1.8	34	135
20	1.2	3.5	2.5	18	3.2	2.1	.71	.02	32	1.8	21	293
21	1.3	3.5	1.9	19	3.1	1.9	.61	.00	23	1.8	14	105
22	1.3	4.0	e1.5	12	2.7	2.6	.61	.00	18	2.0	9.9	64
23	1.3	4.4	1.3	8.5	2.3	4.3	1.1	.00	15	2.2	8.2	42
24	1.3	4.9	1.3	7.3	2.3	4.3	1.2	88	12	3.5	7.0	29
25	1.4	4.4	1.4	6.1	2.2	2.4	1.2	21	11	4.6	13	23
26	1.5	5.4	1.3	5.3	2.2	2.1	.95	3.2	9.7	6.1	16	18
27	1.6	6.5	1.4	5.0	2.2	1.9	1.0	.81	8.9	6.3	10	13
28	1.8	5.8	1.4	4.6	1.7	2.0	1.6	.46	7.8	9.0	7.3	10
29	2.1	4.0	1.5	4.0	---	2.0	3.6	.21	6.9	6.2	5.8	9.0
30	2.2	2.6	e1.4	4.2	---	2.0	3.7	.02	6.4	7.0	5.1	8.2
31	2.4	---	1.3	4.1	---	1.9	---	.00	---	6.5	4.6	---
TOTAL	53.3	176.2	48.4	166.7	89.0	58.2	52.98	422.97	5399.70	125.2	2705.78	3883.3
MEAN	1.72	5.87	1.56	5.38	3.18	1.88	1.77	13.6	180	4.04	87.3	129
MAX	2.4	11	2.6	19	4.2	4.3	4.5	149	2770	9.0	1080	2350
MIN	1.2	2.6	1.3	1.2	1.7	1.2	.61	.00	.00	1.8	.68	2.0
AC-FT	106	349	96	331	177	115	105	839	10710	248	5370	7700
CFSM	.00	.01	.00	.01	.01	.00	.00	.02	.29	.01	.14	.21
IN.	.00	.01	.00	.01	.01	.00	.00	.03	.33	.01	.16	.24

CAL YR 1990	TOTAL	40764.53	MEAN	112	MAX	14100	MIN	.00	AC-FT	80860	CFSM	.18	IN.	2.47
WTR YR 1991	TOTAL	13181.73	MEAN	36.1	MAX	2770	MIN	.00	AC-FT	26150	CFSM	.06	IN.	.80

e Estimated

08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURE: October 1966 to current year.

INSTRUMENTATION.--Since December 1970, specific conductance is continuously recorded at this station. Since March 1982, specific conductance and water temperature are continuously recorded at this station.

REMARKS.--Estimated mean specific conductance values and interruptions in the mean temperature values were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 21,200 microsiemens Feb. 15, 21, 1978; minimum measured, 180 microsiemens Oct. 27, 1984, May 13, 1985 and Oct. 6, 1986; minimum estimated, 129 microsiemens Aug. 4, 1978.
WATER TEMPERATURE (1966-80, 1983-current year): Maximum, 37.5°C July 20, 1986; minimum, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 4,070 microsiemens Apr. 24; minimum, 280 microsiemens Sept. 14.
WATER TEMPERATURE: Maximum, 35.0°C July 17; minimum, 0.0°C Dec. 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT									
03...	1430	2.0	3400	25.0	750	610	180	72	430
DEC									
04...	1425	1.6	3320	8.0	730	560	180	67	400
JAN									
17...	1320	3.5	2600	8.5	550	370	140	48	290
APR									
24...	1445	1.1	3900	21.0	870	720	220	78	520
JUN									
04...	1650	278	420	22.5	120	47	38	6.6	31
AUG									
14...	1310	85	500	24.5	130	47	39	7.7	41

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT								
03...	7	6.1	140	290	840	<0.10	7.5	1910
DEC								
04...	6	4.7	170	230	1000	0.20	6.4	1990
JAN								
17...	5	4.5	180	200	590	0.20	5.3	1390
APR								
24...	8	5.7	150	280	1100	0.40	4.8	2300
JUN								
04...	1	6.1	75	17	65	0.30	7.4	216
AUG								
14...	2	4.6	82	16	86	0.20	8.7	252

08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1990 TO SEPTEMBER 1991

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.	1990	53.3	3610	2030	292	980	140	220	31	730
NOV.	1990	176.2	3270	1830	870	870	414	200	93	670
DEC.	1990	48.4	3350	1880	246	900	117	200	26	690
JAN.	1991	166.7	2520	1400	630	650	291	150	69	540
FEB.	1991	89.0	3060	1710	411	810	194	180	44	640
MAR.	1991	58.2	3510	1970	310	950	149	210	33	720
APR.	1991	52.98	3760	2120	303	1000	147	220	32	760
MAY	1991	422.97	2070	1150	1310	520	595	130	145	450
JUNE	1991	5399.70	790	431	6280	180	2690	49	719	180
JULY	1991	125.2	2460	1360	461	630	212	150	51	530
AUG.	1991	2705.78	886	485	3550	210	1540	55	402	200
SEPT	1991	3883.3	523	285	2990	120	1260	33	344	120
TOTAL		13181.73	**	**	17600	**	7750	**	1990	**
WTD.AVG.		36	903	496	**	220	**	56	**	210

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	3660	3410	3530	3910	3850	3890	3280	3130	3200	3300	3240	3270
2	3640	3450	3510	3950	3870	3900	3300	3280	3290	3300	3260	3280
3	3470	3380	3410	3970	3750	3920	3340	3280	3300	3380	3280	3330
4	3440	3400	3420	3950	3710	3800	3360	3300	3330	3380	3200	3250
5	3440	3400	3420	3730	3650	3690	3380	3340	3360	3380	3200	3290
6	3480	3400	3450	3730	3690	3710	3400	3360	3380	3340	3240	3280
7	3550	3450	3510	3750	3730	3740	3420	3360	3390	3340	3300	3320
8	3550	3370	3480	3780	3530	3660	3420	3380	3400	3340	3260	3300
9	3490	3430	3440	3570	3490	3540	3420	3380	3400	3300	3060	3190
10	3470	3410	3440	3510	2840	3230	3380	3320	3360	3140	2880	3100
11	3470	3410	3440	3150	2830	2920	3360	3320	3340	3040	2740	2950
12	3490	3430	3470	2970	2770	2850	3380	3340	3360	2860	1820	2200
13	3540	3470	3500	2850	2770	2800	3400	3380	3390	2040	1820	1930
14	3560	3500	3540	2930	2790	2850	3400	3380	3390	2520	2080	2340
15	3600	3420	3550	3030	2930	2960	3440	3380	3420	2780	2520	2630
16	3600	3520	3570	3100	3010	3060	3480	3380	3430	---	---	e2610
17	3660	3560	3630	3140	3050	3090	3400	3380	3390	---	---	2620
18	3680	3600	3650	3160	3080	3120	3400	3340	3370	2880	2740	2820
19	3710	3620	3660	3140	3060	3100	3360	3340	3340	2680	1780	2180
20	3730	3670	3700	3140	3100	3120	3360	3320	3350	2820	2360	2680
21	3790	3650	3720	3160	3100	3140	3440	3360	3400	2620	1860	2320
22	3790	3690	3720	3220	3160	3180	3520	3420	3460	1880	1640	1730
23	3790	3710	3760	3200	3140	3170	3580	3400	3540	2640	1900	2220
24	3830	3730	3790	3190	3140	3160	3600	3480	3550	2480	2300	2370
25	3810	3730	3780	3210	3170	3180	3540	3340	3440	2450	2120	2200
26	3820	3760	3800	3210	3150	3180	3320	3220	3270	2710	2490	2630
27	3860	3780	3820	3170	3070	3120	3220	3140	3190	2630	2530	2570
28	3860	3780	3820	3130	2880	3050	3480	3120	3220	2730	2650	2700
29	3880	3800	3840	3130	3070	3100	3300	3140	3190	2890	2730	2770
30	3900	3840	3860	3170	3130	3140	3300	3200	3250	2930	2830	2890
31	3910	3840	3880	---	---	---	3340	3280	3310	2950	2830	2900
MONTH	3910	3370	3620	3970	2770	3280	3600	3120	3360	3380	1640	2740

e Estimated

08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2850	2790	2830	3420	3340	3380	3660	3580	3630	3910	3870	3890
2	2870	2830	2850	3400	3360	3390	3680	3640	3660	3910	3790	3870
3	2910	2870	2900	3400	3380	3400	3740	3660	3690	3950	3870	3920
4	2930	2890	2920	3420	3360	3400	3840	3720	3780	4050	3820	3940
5	2980	2890	2940	3420	3380	3410	3840	3740	3780	4030	3910	3980
6	3000	2820	2960	3420	3380	3400	3860	3740	3800	3990	3880	3940
7	3060	3000	3020	3440	3400	3430	3800	3760	3780	4000	3470	3940
8	3060	3000	3040	3460	3380	3430	3920	3700	3830	3510	1120	1940
9	3080	3000	3050	3460	3420	3440	3720	3640	3680	2800	2000	2430
10	3060	3020	3040	3460	3420	3430	3700	3640	3660	2900	2760	2800
11	3080	3020	3050	3480	3420	3450	3720	3680	3700	2920	2350	2800
12	3080	3000	3040	3540	3440	3490	3760	3700	3730	2310	1880	2060
13	3080	3020	3060	3560	3500	3530	4060	3460	3780	1900	1750	1820
14	3100	3060	3080	3560	3540	3550	3820	3740	3770	1810	1710	1760
15	3120	3080	3110	3600	3520	3560	3820	3140	3560	2510	1790	1980
16	3120	3100	3110	3720	3580	3620	3320	3200	3250	2790	2510	2690
17	3150	3100	3120	3620	3520	3570	3860	3300	3530	2870	2730	2800
18	3130	3090	3110	3560	3520	3550	3980	3300	3630	3050	2890	2970
19	3170	3110	3140	3540	3520	3530	4000	3320	3750	3090	2970	3040
20	3190	3130	3160	3560	3520	3540	4060	3700	3920	3150	2970	3060
21	3190	3130	3160	3580	3500	3550	4040	3520	3820	---	---	---
22	3170	3110	3150	3760	3520	3580	4060	3620	3880	---	---	---
23	3210	3170	3190	3580	3480	3540	4060	3640	3940	---	---	---
24	3270	3190	3230	3500	3480	3490	4070	3880	3960	2780	467	1800
25	3310	3250	3280	3540	3500	3510	4020	3830	3980	995	792	900
26	3330	3290	3310	3560	3520	3530	4060	3940	4000	1180	995	1090
27	3330	3290	3320	3700	3520	3590	4060	4000	4020	1360	1200	1290
28	3360	3310	3340	3620	3560	3580	4040	3970	4000	1460	1380	1430
29	---	---	---	3600	3580	3590	3990	3930	3970	1560	1480	1520
30	---	---	---	3620	3580	3600	3950	3850	3890	1600	1560	1590
31	---	---	---	3640	3580	3610	---	---	---	---	---	---
MONTH	3360	2790	3090	3760	3340	3510	4070	3140	3780	4050	467	2560

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	2100	1940	2020	2360	2110	2290	1760	1560	1640
2	1610	1550	1580	2130	2030	2090	2160	2010	2080	1740	1660	1700
3	1610	322	775	2210	2120	2160	2120	2000	2070	1780	1600	1690
4	603	281	389	2310	2160	2240	2180	1980	2070	1840	1740	1810
5	570	437	496	2320	2220	2270	2220	2110	2150	1980	1840	1920
6	646	486	550	2340	2260	2290	2230	2100	2170	1940	1780	1870
7	1420	502	686	2390	2300	2340	2330	2140	2230	2060	1760	1840
8	1400	882	1020	2420	2330	2380	2390	2140	2270	1960	900	1630
9	862	783	822	2510	2360	2440	2520	2300	2420	820	620	709
10	891	836	866	2550	2460	2490	2510	2240	2370	1000	780	914
11	944	889	912	2620	2480	2550	2470	371	1430	1340	1000	1230
12	1100	903	938	2700	2490	2570	403	353	380	1540	1340	1430
13	1230	1120	1180	2730	2570	2640	452	403	429	1540	560	1350
14	1380	1150	1240	2780	2660	2700	500	320	434	580	280	397
15	1690	994	1230	2790	2650	2720	440	300	353	420	380	400
16	1440	1360	1420	2820	2640	2740	540	440	483	480	360	435
17	1400	1030	1170	2960	2730	2820	640	480	549	540	440	485
18	1110	969	1050	2870	2660	2760	1140	620	967	680	540	613
19	1030	949	991	2890	2690	2770	1120	1020	1070	760	540	705
20	1080	1000	1050	2950	2720	2800	1040	860	965	700	440	518
21	1190	1060	1150	2930	2640	2790	1220	1020	1120	720	500	587
22	1250	1150	1180	2930	2740	2840	1360	1160	1270	880	680	786
23	1420	1230	1320	2980	2820	2880	1360	1120	1250	920	780	857
24	1530	1360	1460	3250	2790	2920	1480	1140	1290	1160	820	950
25	1620	1490	1550	2880	2720	2790	1520	1120	1270	1060	782	914
26	1730	1620	1670	2800	2680	2730	1120	720	967	1240	862	1010
27	1760	1690	1720	2780	2600	2680	1200	940	1090	1060	844	932
28	1850	1740	1790	2610	2240	2530	1280	940	1130	1250	864	1050
29	1910	1820	1870	2310	1990	2180	1300	1160	1220	1370	946	1120
30	2030	1870	1930	2400	2220	2290	1560	1240	1370	1390	1010	1210
31	---	---	---	2410	2330	2370	1700	1460	1530	---	---	---
MONTH	2030	281	1170	3250	1940	2540	2520	300	1380	2060	280	1090

08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.5	24.0	26.0	20.5	18.0	19.5	12.5	10.5	11.5	5.5	4.0	4.5
2	26.5	25.0	25.5	20.5	18.5	19.5	12.0	11.0	11.5	8.0	5.0	6.0
3	26.5	24.0	25.0	20.0	18.0	19.5	11.5	9.0	10.5	6.0	3.5	4.5
4	29.5	24.5	26.5	17.0	13.5	15.5	10.0	7.5	8.5	4.0	3.0	3.5
5	27.0	24.0	25.5	15.0	11.5	13.5	10.0	7.0	8.5	6.5	3.5	4.5
6	27.0	25.0	26.5	16.0	13.5	14.5	10.0	8.0	8.5	6.0	4.5	5.5
7	28.0	25.5	26.5	15.0	11.5	13.0	10.5	6.5	8.0	5.0	4.0	4.5
8	25.5	21.5	23.5	11.5	10.5	11.0	9.0	6.5	8.0	6.0	4.5	5.0
9	21.0	18.0	20.0	14.0	10.5	12.0	9.0	7.0	8.5	6.0	5.5	6.0
10	20.0	16.0	18.0	13.0	10.0	11.5	9.5	7.5	9.0	5.5	5.0	5.5
11	19.5	17.0	18.5	14.5	11.0	12.5	11.5	8.5	9.5	7.5	5.0	6.0
12	22.0	17.5	19.5	15.0	12.0	13.5	12.0	10.0	10.5	7.5	3.5	5.5
13	20.5	17.5	19.0	15.0	12.0	13.5	11.0	10.0	10.5	8.0	4.5	6.5
14	23.5	18.5	20.5	15.0	12.5	14.0	11.5	10.0	10.5	8.0	6.0	7.0
15	22.0	19.0	20.5	16.0	14.0	15.0	12.0	11.0	11.5	10.0	6.5	8.0
16	22.5	20.5	21.5	15.5	14.5	15.0	11.0	10.5	10.5	---	---	---
17	25.5	21.5	23.0	15.5	14.0	15.0	11.0	10.5	11.0	---	---	---
18	22.0	19.0	20.5	16.5	15.0	16.0	12.0	9.5	11.0	8.5	8.5	8.5
19	20.0	17.5	19.0	17.5	15.5	16.5	11.5	9.0	10.5	10.0	7.0	8.5
20	20.5	17.0	18.5	18.5	17.0	18.0	13.5	10.0	11.5	9.0	7.5	8.5
21	19.0	16.5	18.0	19.5	18.5	19.0	10.0	4.0	7.0	8.0	6.5	7.5
22	17.5	15.0	16.5	19.5	17.0	18.5	4.0	.5	2.0	8.5	5.5	7.0
23	18.5	14.5	16.0	18.5	15.5	17.0	3.0	.0	1.5	8.5	6.5	7.5
24	19.5	15.0	17.0	17.0	14.5	16.0	4.0	1.0	2.5	10.0	7.0	8.5
25	18.0	15.0	16.5	17.5	16.0	16.5	5.0	4.0	4.5	10.0	6.5	8.0
26	18.0	15.5	17.0	18.5	17.0	18.0	4.5	3.0	3.5	8.0	7.0	7.5
27	19.5	16.0	17.5	19.0	16.5	18.0	4.5	3.0	4.0	10.5	7.0	8.5
28	19.5	17.5	18.5	17.0	14.0	15.5	6.5	3.5	5.0	10.5	7.0	8.5
29	19.5	17.5	18.5	15.0	12.0	13.5	9.0	6.0	7.0	9.5	7.0	8.5
30	19.0	17.0	18.5	13.0	11.0	12.0	5.5	3.0	4.5	8.5	5.5	6.5
31	19.5	17.0	18.5	---	---	---	4.5	1.5	3.0	8.5	5.0	7.0
MONTH	29.5	14.5	20.5	20.5	10.0	15.5	13.5	.0	8.0	10.5	3.0	6.5

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

08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	31.0	26.5	28.5	33.5	27.0	30.0	29.5	26.5	27.5
2	---	---	---	32.5	27.5	30.0	32.0	27.5	29.5	30.5	26.5	28.5
3	---	---	---	32.5	28.0	30.5	31.5	28.0	30.0	33.0	26.5	29.5
4	---	---	---	33.0	27.5	30.0	32.5	28.0	30.0	31.0	27.5	29.0
5	26.5	22.5	24.0	33.5	27.0	30.0	31.0	28.0	30.0	29.5	27.0	28.0
6	26.0	24.0	25.0	31.5	27.5	29.5	31.0	28.0	29.5	30.5	27.0	28.5
7	26.5	25.0	25.5	32.0	28.0	30.0	31.5	28.0	30.0	28.0	26.0	27.0
8	26.0	25.0	25.5	31.0	28.0	29.5	32.0	28.5	30.0	28.5	25.5	27.0
9	25.5	22.5	24.0	30.5	27.5	29.0	33.5	28.5	31.0	29.0	26.5	27.5
10	26.0	24.0	25.0	30.0	27.0	28.5	30.0	28.0	29.0	30.0	26.5	28.0
11	27.5	24.5	26.0	29.0	26.5	28.0	28.0	22.5	25.0	30.0	27.0	28.5
12	29.5	25.0	27.0	30.0	26.5	28.5	24.5	23.0	24.0	30.0	26.0	28.0
13	30.0	26.5	28.0	32.0	27.5	29.5	24.5	24.0	24.5	29.0	25.5	27.5
14	29.5	26.5	28.0	33.0	28.0	30.0	24.5	24.0	24.0	25.0	23.5	24.5
15	27.5	23.0	26.5	32.0	28.5	30.0	25.5	24.0	24.5	26.5	25.0	25.5
16	29.0	27.0	28.0	32.5	28.5	30.5	28.0	25.0	26.0	26.5	25.5	26.0
17	29.5	26.0	28.0	35.0	29.0	31.0	27.5	25.0	26.0	26.5	25.5	26.0
18	30.0	27.0	28.5	32.5	29.0	30.5	28.5	26.5	27.5	26.0	23.5	25.5
19	32.0	27.5	29.5	31.0	28.0	29.5	30.0	27.5	28.5	23.0	20.0	22.0
20	32.0	27.5	29.5	30.5	27.5	29.0	32.5	28.0	30.0	20.0	17.5	18.5
21	30.5	27.0	28.5	30.5	28.0	29.0	32.0	28.0	30.0	18.5	17.0	17.5
22	32.5	27.0	29.5	31.0	28.0	29.0	30.5	27.5	28.5	19.5	18.5	19.0
23	32.5	27.5	30.0	31.5	28.0	29.5	29.0	27.5	28.5	20.5	19.0	20.0
24	32.0	27.5	30.0	30.0	27.5	28.5	31.5	27.0	29.0	20.5	19.5	20.5
25	32.0	28.5	30.0	27.5	26.5	27.0	31.5	27.5	29.0	21.5	18.5	20.0
26	32.0	28.5	30.0	29.5	26.0	27.5	31.5	26.5	29.0	22.5	19.5	21.0
27	32.0	28.5	30.0	29.5	26.0	27.5	30.5	27.0	29.0	23.0	19.5	21.0
28	31.5	28.0	29.5	30.0	26.0	27.5	31.5	27.0	29.0	23.5	20.0	21.5
29	30.0	27.5	29.0	33.0	27.5	30.0	31.5	27.5	29.5	24.0	19.5	21.5
30	30.0	27.0	28.5	33.0	27.0	30.0	32.0	28.0	29.5	24.5	20.0	22.0
31	---	---	---	33.5	26.5	29.5	30.0	26.5	28.5	---	---	---
MONTH	32.5	22.5	28.0	35.0	26.0	29.5	33.5	22.5	28.5	33.0	17.0	24.5

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX

LOCATION.--Lat 32°38'54", long 99°00'15", Stephens County, Hydrologic Unit 12060105, on left bank 600 ft downstream from Battle Creek, 1.6 mi upstream from bridge on Farm Road 576, 9.8 mi southwest of Breckenridge, and about 14.6 mi upstream from Hubbard Creek Dam.

DRAINAGE AREA.--280 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1962 to current year. Prior to October 1975, published as "near Breckenridge."

REVISED RECORDS.--WDR TX-76-2: Drainage area at former site.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,185.83 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1975, at site 1.6 mi downstream at datum 7.41 ft lower.

REMARKS.--Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--29 years (water years 1963-91), 26.5 ft^3/s (1.29 in/yr), 19,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,000 ft^3/s Oct. 13, 1981 (gage height, 28.60 ft, from floodmark), from field estimate, based on 2-section slope-area determination of peak flow; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--According to information from State Department of Highways and Public Transportation, the floods of May 16, 1949, July 20, 1953, and Apr. 29, 1957, each reached a stage of 24.6 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug. 11	1600	*2,400	*13.60	No other peak greater than base discharge.			

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	e.07	e1.3	.21	.89	.45	.18	.07	.10	.09	.22	2.2
2	.03	e.13	e.52	.21	.78	.41	.18	.09	50	.07	.11	2.3
3	.05	e.21	e.29	.21	.69	.34	.18	.11	683	.05	.05	2.3
4	e.09	e2.8	.21	.21	.69	.33	.18	.34	369	.07	.00	2.3
5	e.07	20	.21	.21	.69	.28	.17	.33	48	.29	.00	2.4
6	e.04	e.94	.21	.35	.69	.27	.15	.18	121	.18	.00	2.9
7	e.03	e.52	.21	.39	.69	.25	.15	.28	221	.09	.00	6.3
8	.06	e2.9	.21	.30	.66	.25	.15	214	72	.04	.00	11
9	1.1	e6.9	.21	6.7	.60	.24	.14	251	25	.02	.00	11
10	e7.7	e8.3	.21	115	.60	.19	.13	37	13	.02	.02	15
11	e1.2	e.48	.21	36	.60	.15	.13	15	8.0	.04	921	9.9
12	e.09	e.21	.21	30	.60	.20	.13	6.5	4.3	.04	337	6.8
13	e.07	e.18	.21	15	.56	.21	1.7	2.9	1.6	.04	426	25
14	e.05	e.18	.21	8.2	.40	.20	7.6	1.3	.64	.02	370	248
15	e.04	e.15	.21	4.8	.34	.21	1.5	.75	1.9	.01	132	46
16	e.04	e.13	.47	2.9	.34	.26	.60	.48	.99	.00	28	18
17	e.03	e.13	.46	1.7	.34	.40	.33	.28	578	.00	11	11
18	e.02	e.13	.36	5.2	.34	.35	.26	.26	68	.00	5.5	7.5
19	e.02	e.11	.29	115	.34	.27	.21	.21	25	.00	2.9	34
20	e.02	e.09	.24	75	.30	.25	.16	.14	13	.00	1.7	152
21	e.10	e.09	.21	33	.27	.26	.12	.08	7.3	.00	1.1	43
22	e.02	e.07	.21	18	.45	.60	.11	.07	5.4	.00	.54	18
23	e.01	e.11	.21	11	.43	.25	.11	.09	3.8	.00	4.4	8.6
24	e.01	e.29	.21	7.4	.33	.21	.11	.37	2.3	.00	56	3.4
25	e.01	e.18	.21	4.7	.25	.21	.11	.28	1.2	.00	8.2	3.0
26	e.01	e.71	.21	2.9	.25	.21	.11	.15	.74	.00	2.7	1.9
27	e.01	e2.0	.21	2.0	.40	8.7	.10	.11	.21	.55	1.2	1.2
28	e.01	e1.6	.21	1.5	.45	1.7	.10	.10	.18	1.2	.58	.79
29	e.02	e1.0	.21	1.2	---	.49	.08	.11	.15	2.7	.95	.60
30	e.03	e1.4	.21	.89	---	.28	.07	.11	.13	2.7	2.3	.43
31	e.04	---	.21	.89	---	.21	---	.11	---	.69	2.2	---
TOTAL	11.04	52.01	8.76	501.07	13.97	18.63	15.25	532.80	2324.94	8.91	2315.67	696.82
MEAN	.36	1.73	.28	16.2	.50	.60	.51	17.2	77.5	.29	74.7	23.2
MAX	7.7	20	1.3	115	.89	8.7	7.6	251	683	2.7	921	248
MIN	.01	.07	.21	.21	.25	.15	.07	.07	.10	.00	.00	.43
AC-FT	22	103	17	994	28	37	30	1060	4610	18	4590	1380
CFSM	.00	.01	.00	.06	.00	.00	.00	.06	.28	.00	.27	.08
IN.	.00	.01	.00	.07	.00	.00	.00	.07	.31	.00	.31	.09

CAL YR 1990	TOTAL	13901.78	MEAN	38.1	MAX	3610	MIN	.00	AC-FT	27570	CFSM	.14	IN.	1.85
WTR YR 1991	TOTAL	6499.87	MEAN	17.8	MAX	921	MIN	.00	AC-FT	12890	CFSM	.06	IN.	.86

e Estimated

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1975 to current year.
WATER TEMPERATURE: November 1975 to current year.

INSTRUMENTATION.--Since December 1970, specific conductance is continuously recorded at this station. Since March 1982, specific conductance and water temperature are continuously recorded at this station.

REMARKS.--Estimated mean specific conductance values and interruptions in the mean temperature values were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request. Prior to November 1975, this station was published as 08086300 Big Sandy Creek near Breckenridge.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 28,700 microsiemens Apr. 5, 10, 1976; minimum, 59 microsiemens Nov. 21, 1963.
WATER TEMPERATURE: Maximum, 37.0°C Aug. 9, 1987, July 16, 1989; minimum, 0.0°C Jan. 9, 10, 1977, Dec. 2, 3, 1985.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 15,200 microsiemens May 3; minimum recorded, 260 microsiemens Aug. 15, minimum daily, 190 microsiemens Aug. 14.
WATER TEMPERATURE: Maximum, 34.0°C May 26-28; minimum, 2.5°C Dec. 21, 22, 31.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT									
03...	1015	0.06	9160	22.5	1400	1300	360	110	1500
DEC									
04...	1145	0.21	3520	5.5	630	490	190	38	450
JAN									
17...	1205	1.6	1880	8.5	360	230	110	21	230
APR									
24...	1220	0.11	10600	21.0	2000	1800	590	130	1700
JUN									
04...	1450	189	249	22.5	86	22	29	3.2	13
AUG									
14...	0855	285	160	23.5	64	7	22	2.1	6.9

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT								
03...	18	7.5	80	510	3000	0.60	7.7	5540
DEC								
04...	8	4.9	150	170	960	0.30	5.8	1910
JAN								
17...	5	5.7	130	100	460	0.10	6.5	1010
APR								
24...	17	6.6	180	660	3300	0.20	1.8	6490
JUN								
04...	0.6	5.7	64	13	24	0.20	7.2	134
AUG								
14...	0.4	4.0	57	8.2	11	0.20	9.0	98

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1990 TO SEPTEMBER 1991

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.	1990	11.04	1550	899	27	450	14	89	2.7	270
NOV.	1990	52.01	1390	796	112	390	55	81	11	240
DEC.	1990	8.76	5930	3480	82	1800	42	340	8.0	1000
JAN.	1991	501.07	1490	851	1150	420	570	87	117	260
FEB.	1991	13.97	5760	3380	127	1700	65	330	12	1000
MAR.	1991	18.63	10200	6140	309	3200	162	570	29	*
APR.	1991	15.25	10800	6520	268	3400	141	600	25	*
MAY	1991	532.80	3660	2110	3040	1100	1520	210	305	630
JUNE	1991	2324.94	818	468	2940	230	1460	48	300	140
JULY	1991	8.91	5300	3090	74	1600	38	300	7.3	920
AUG.	1991	2315.67	603	342	2140	170	1050	35	222	100
SEPT	1991	696.82	790	449	846	220	416	46	87	140
TOTAL		6499.87	**	**	11100	**	5530	**	1130	**
WTD.AVG.		18	1100	633	**	320	**	64	**	190

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9610	9220	9410	5330	4700	5010	3550	3420	3510	8820	8270	8530
2	9510	9200	9330	5670	5310	5450	3510	3470	3490	8760	8090	8470
3	---	---	9200	5790	5340	5670	3490	3400	3460	8620	8300	8470
4	9230	8940	9100	8810	361	2860	3660	3500	3550	8630	8420	8530
5	9230	8980	9120	1640	789	1070	4280	3620	3930	8690	8490	8580
6	9390	9170	9260	925	789	857	4780	4220	4390	8780	8150	8400
7	9460	9260	9370	1130	925	1030	5110	4760	4890	8110	7320	7690
8	9390	8320	9140	1690	384	1170	6530	5110	5810	7540	7320	7430
9	9130	1450	6410	565	497	539	6850	6450	6570	9400	4210	7580
10	939	447	552	565	497	510	6920	6540	6690	2720	529	1600
11	761	537	632	701	565	635	7200	6680	6920	4360	2320	3180
12	1010	761	871	859	723	792	7080	6780	6890	3460	1200	1900
13	1300	1010	1140	1040	882	955	7050	6850	6930	1160	917	1020
14	1610	1300	1450	1180	1040	1120	7940	6990	7540	1390	1120	1270
15	1810	1590	1690	1290	1180	1250	7900	7480	7690	1530	1370	1440
16	1970	1790	1890	1540	1290	1420	7700	6430	7160	1780	1530	1630
17	2080	1950	2010	1770	1540	1650	6350	4910	5490	2140	1800	1920
18	2170	2060	2130	2060	1770	1910	5670	5030	5350	2400	1660	2130
19	2260	2130	2190	2500	2060	2280	6320	5530	5800	1960	580	974
20	2380	2200	2290	2980	2500	2690	6450	6220	6330	3020	620	915
21	2490	2180	2310	3460	2980	3210	7020	6490	6720	841	641	749
22	2630	2420	2490	3870	3500	3690	8270	6970	7560	961	841	900
23	2780	2580	2660	4050	3780	3890	9080	8370	8810	1160	961	1050
24	2900	2760	2830	4120	3920	4020	9530	9050	9290	1380	1160	1250
25	3170	2900	3020	4260	4100	4190	8990	8040	8520	1640	1380	1480
26	3550	3190	3270	4290	3130	3670	8000	7500	7740	1920	1640	1750
27	3780	3550	3620	3220	3080	3130	8290	7580	7810	2340	1920	2070
28	3960	3750	3850	3590	3240	3440	8270	7670	8080	2640	2260	2380
29	4290	3960	4100	3660	3550	3610	7480	7120	7290	2900	2520	2690
30	4540	4270	4420	3640	3530	3580	7820	7450	7640	3040	2640	2910
31	4910	4520	4700	---	---	---	8650	7900	8410	3160	2800	2990
MONTH	9610	447	4340	8810	361	2510	9530	3400	6460	9400	529	3610

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3430	3080	3200	7840	7560	7680	9150	8740	8910	15000	14000	14300
2	3810	3390	3690	8580	7820	8210	8810	8240	8550	14800	14300	14500
3	4150	3890	4060	9320	8520	8820	9540	8370	8770	15200	14600	14900
4	4250	4130	4190	9360	8880	9140	11400	9520	10200	15100	13000	14700
5	4290	3850	4100	9330	9040	9140	11500	11000	11300	13500	8800	10400
6	4350	4030	4220	9710	9310	9450	11500	11200	11300	10500	9770	10100
7	4510	4130	4270	10500	9700	9970	11300	11100	11200	10800	8180	10600
8	5190	4230	4700	10400	10100	10200	11200	11100	11200	8940	1550	3670
9	5410	5110	5230	10500	10300	10400	11300	11000	11100	---	---	e3500
10	5730	5250	5390	10900	10400	10600	11500	10700	11200	---	---	e3700
11	5970	5510	5780	10900	10500	10700	11500	11300	11400	---	---	e4000
12	6090	5890	5980	11000	10500	10700	11500	11200	11400	---	---	e4400
13	6570	5830	6230	11600	11000	11200	11300	11000	11200	---	---	e4800
14	6570	5930	6310	12000	11400	11700	11200	11000	11100	---	---	e5100
15	7290	6470	6850	12000	11600	11800	11000	10300	10700	---	---	e5400
16	7470	6990	7250	11900	11300	11700	10300	9640	9960	---	---	e5600
17	7390	7130	7240	11500	8410	9920	9600	9190	9370	---	---	e5800
18	7270	6690	7060	9550	9110	9320	9210	8880	9000	---	---	e6000
19	8300	7090	7710	9850	9010	9300	9020	8520	8770	---	---	e6300
20	8740	8040	8360	10100	9880	9970	9630	8870	9150	---	---	e6600
21	8760	8300	8560	10500	9320	10200	10100	9570	9740	---	---	e6800
22	8620	6850	7970	9600	9240	9430	10200	10000	10100	---	---	e7000
23	7760	6990	7330	9450	9110	9310	10700	9830	10300	---	---	7220
24	7510	7250	7330	9460	8850	9210	11200	10500	10800	8720	5940	7650
25	8900	7570	8240	9530	8960	9240	11300	11200	11300	8370	7200	7890
26	9180	8340	8800	10200	9570	9810	12300	11300	11700	8780	7990	8330
27	9880	8700	9310	11000	10100	10700	12700	12100	12400	9040	8490	8710
28	8720	7760	8090	10700	10200	10500	13100	12400	12700	9310	8780	8990
29	---	---	---	10200	9790	9990	13600	13000	13200	9540	9040	9240
30	---	---	---	9870	9530	9690	14000	13500	13700	9680	9220	9450
31	---	---	---	9550	9050	9260	---	---	---	9960	9560	9690
MONTH	9880	3080	6340	12000	7560	9910	14000	8240	10700	15200	1550	7910

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10200	9830	9990	---	---	e2300	6540	6420	6470	---	---	e2200
2	10300	746	7970	---	---	e2400	6500	6180	6360	---	---	e2400
3	---	---	810	---	---	e2500	6160	5940	6090	---	---	e2500
4	---	---	460	---	---	e2600	---	---	---	---	---	e2600
5	---	---	380	---	---	e2700	---	---	---	---	---	e2700
6	---	---	455	---	---	e2830	---	---	---	---	---	e2600
7	---	---	470	---	---	e3040	---	---	---	---	---	e2500
8	---	---	510	---	---	e3250	---	---	---	---	---	e2400
9	---	---	590	---	---	e3460	---	---	---	---	---	e2500
10	---	---	655	---	---	e3680	---	---	e6000	---	---	e2400
11	---	---	715	---	---	e3890	---	---	e1000	---	---	e2600
12	---	---	790	---	---	e4100	---	---	e450	---	---	e2700
13	1230	839	994	---	---	e4210	---	---	e200	---	---	e1500
14	1640	1090	1190	---	---	e4420	---	---	190	---	---	e500
15	2830	1080	1510	---	---	e4690	500	260	328	---	---	e700
16	2030	1130	1290	---	---	---	---	---	410	---	---	e800
17	2150	520	757	---	---	---	---	---	e500	---	---	e900
18	640	560	602	---	---	---	---	---	e600	---	---	e1200
19	---	---	e700	---	---	---	---	---	e650	---	---	e800
20	---	---	e750	---	---	---	---	---	720	---	---	e400
21	---	---	e800	---	---	---	926	761	868	---	---	e500
22	---	---	e900	---	---	---	1910	1010	1370	---	---	e600
23	---	---	e1000	---	---	---	2430	1190	1900	---	---	e700
24	---	---	e1200	---	---	---	1190	1070	1120	---	---	820
25	---	---	e1500	---	---	---	---	---	1250	869	804	845
26	---	---	e1800	---	---	---	---	---	e1400	1110	870	975
27	---	---	e1900	5040	4900	4950	---	---	e1600	1280	953	1100
28	---	---	e2000	5260	5040	5130	---	---	e1800	1590	1260	1390
29	---	---	e2100	5780	5280	5480	---	---	e1900	2220	1590	1750
30	---	---	e2200	6080	5820	5960	---	---	e1800	2390	1940	2070
31	---	---	---	6400	6100	6240	---	---	e2000	---	---	---
MONTH	10300	520	1570	6400	4900	3890	6540	260	1880	2390	804	1590

e Estimated

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.5	4.5	6.5	19.0	13.0	15.5	19.0	11.0	15.5	26.0	18.5	22.0
2	9.0	5.5	7.5	19.0	13.0	15.5	19.5	15.5	17.5	23.5	20.0	22.0
3	10.5	7.0	9.0	18.0	10.0	13.5	22.0	16.0	19.0	26.0	21.5	23.5
4	13.0	10.5	11.5	19.5	10.0	14.0	23.5	17.5	20.5	24.5	21.5	23.0
5	12.5	11.5	12.0	18.5	11.5	15.0	23.5	18.0	21.0	25.0	18.0	21.5
6	15.5	10.5	12.5	19.5	14.0	16.5	22.5	18.0	20.5	24.5	16.0	20.5
7	15.0	7.5	11.0	15.0	11.5	13.5	23.0	19.0	21.0	23.5	18.5	21.5
8	15.0	8.0	11.0	18.5	8.0	12.5	26.0	20.0	23.0	22.0	19.0	20.5
9	13.0	7.5	10.5	19.0	9.0	13.5	23.5	18.5	21.5	---	---	---
10	15.0	8.5	11.5	15.5	9.5	12.5	22.0	15.5	19.5	---	---	---
11	14.0	10.0	12.0	17.5	12.0	15.0	22.5	20.0	21.5	---	---	---
12	17.0	12.5	14.5	21.0	14.5	17.5	24.5	21.0	22.5	---	---	---
13	19.5	14.0	16.0	19.0	12.5	15.5	24.0	20.0	22.5	---	---	---
14	16.5	10.5	13.5	18.0	11.5	14.5	23.5	20.0	21.5	---	---	---
15	13.5	8.0	11.0	15.5	11.5	13.5	24.0	17.0	20.5	---	---	---
16	11.0	8.5	9.5	13.0	12.0	12.5	25.5	18.0	22.0	---	---	---
17	15.0	10.5	12.0	19.0	11.0	15.0	25.5	22.0	23.5	---	---	---
18	19.0	11.5	14.5	18.0	10.0	14.0	27.0	21.0	24.0	---	---	---
19	15.5	10.0	12.5	16.0	13.0	14.5	24.5	21.5	23.0	---	---	---
20	16.0	6.0	10.5	16.5	14.5	15.5	24.5	19.0	22.0	---	---	---
21	11.0	8.0	9.5	20.5	16.0	18.0	22.5	18.5	20.5	---	---	---
22	17.0	9.0	13.0	20.0	16.0	18.0	21.5	17.5	20.0	---	---	---
23	15.0	10.0	13.0	20.5	13.5	16.5	22.5	15.5	19.5	---	---	---
24	13.5	10.5	12.5	20.0	12.5	16.5	21.0	19.0	20.0	31.5	24.5	27.0
25	14.5	8.0	11.0	19.0	15.0	17.0	25.0	18.0	21.5	32.5	23.0	27.0
26	14.5	6.0	10.5	20.5	18.5	19.5	26.5	22.0	24.5	34.0	25.5	29.0
27	13.5	7.0	10.5	20.5	18.5	19.5	25.0	20.5	23.0	34.0	27.0	30.0
28	15.0	10.5	13.0	21.5	17.0	18.5	23.0	18.5	21.0	34.0	26.5	30.0
29	---	---	---	19.5	14.5	16.5	23.5	16.0	20.0	33.5	27.0	30.0
30	---	---	---	16.0	12.0	13.5	23.0	17.5	20.5	31.5	27.5	29.0
31	---	---	---	17.0	9.0	13.5	---	---	---	30.0	27.0	28.0
MONTH	19.5	4.5	11.5	21.5	8.0	15.5	27.0	11.0	21.0	34.0	16.0	25.0

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	31.0	27.0	28.5	---	---	---	26.5	25.0	26.0	27.0	26.0	26.5
2	29.5	22.5	27.0	---	---	---	26.5	25.0	26.0	27.5	26.0	26.5
3	---	---	---	---	---	---	27.0	25.5	26.5	28.0	26.0	27.0
4	---	---	---	---	---	---	---	---	---	27.5	26.5	27.0
5	---	---	---	---	---	---	---	---	---	27.0	26.0	26.5
6	---	---	---	---	---	---	---	---	---	27.0	25.5	26.0
7	---	---	---	---	---	---	---	---	---	26.5	25.5	26.0
8	---	---	---	---	---	---	---	---	---	26.0	25.0	25.5
9	---	---	---	---	---	---	---	---	---	27.0	25.5	26.0
10	---	---	---	---	---	---	---	---	---	27.0	26.0	26.5
11	---	---	---	---	---	---	---	---	---	27.0	26.0	26.5
12	---	---	---	---	---	---	---	---	---	27.0	25.5	26.5
13	33.5	26.0	29.0	---	---	---	---	---	---	---	---	---
14	31.5	26.5	28.5	---	---	---	---	---	---	---	---	---
15	31.5	24.5	28.0	---	---	---	25.5	23.5	24.5	---	---	---
16	31.5	26.0	28.0	---	---	---	---	---	---	---	---	---
17	26.5	24.5	25.0	---	---	---	---	---	---	---	---	---
18	25.5	24.5	25.0	---	---	---	---	---	---	---	---	---
19	26.0	25.0	25.5	---	---	---	---	---	---	---	---	---
20	26.0	25.5	25.5	---	---	---	---	---	---	---	---	---
21	26.0	25.0	25.5	---	---	---	32.5	26.0	29.0	---	---	---
22	26.0	25.0	25.5	---	---	---	31.5	26.0	28.5	---	---	---
23	26.0	25.0	25.5	---	---	---	28.0	25.0	26.5	---	---	---
24	26.0	25.0	25.5	---	---	---	27.0	25.5	26.0	---	---	---
25	26.0	25.0	25.5	---	---	---	27.5	26.0	26.5	22.0	17.0	19.5
26	---	---	---	---	---	---	27.5	26.0	27.0	23.5	18.0	20.0
27	---	---	---	26.5	25.5	26.0	28.0	26.0	27.0	23.5	17.5	20.0
28	---	---	---	26.5	25.5	26.0	28.5	26.0	27.0	24.0	17.5	20.5
29	---	---	---	27.5	25.5	26.5	28.5	26.5	27.5	24.0	17.0	20.0
30	---	---	---	27.5	26.0	26.5	28.5	27.0	27.5	23.0	17.0	20.0
31	---	---	---	27.0	25.5	26.0	27.5	26.0	27.0	---	---	---
MONTH	33.5	22.5	26.5	27.5	25.5	26.0	32.5	23.5	27.0	28.0	17.0	24.5

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX

LOCATION.--Lat 32°49'53", long 98°58'03", Stephens County, Hydrologic Unit 12060105, on left bank just upstream from dam on Hubbard Creek, 1.4 mi upstream from U.S. Highway 183, 6.5 mi northwest of Breckenridge, and 12.6 mi upstream from mouth.

DRAINAGE AREA.--1,085 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rolled earthfill dam 5,630 ft long. There are two additional levees, the north and south, making an overall length of 3.5 mi. Storage began September 1962 and the dam was completed in December 1962. The emergency spillway is a 2,000-foot-wide cut through natural ground near the left end of dam. The service spillway is a partially controlled morning-glory type, with 12 lift gates designed to discharge 30,000 ft³/s with a 17.5-foot head through a 22.0-foot-diameter concrete conduit. The dam is the property of the West Central Texas Municipal Water District. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,208.0	-
Crest of emergency spillway	1,194.0	515,800
Top of gates	1,185.1	350,900
Top of conservation pool	1,183.0	317,800
Crest of spillway	1,176.6	230,100
Sill of gate	1,138.0	5,580
Lowest gated outlet (invert)	1,136.0	3,470

COOPERATION.--The diversions and capacity table were furnished by the West Central Texas Municipal Water District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 441,200 acre-ft Oct. 14, 1981, for several hours (elevation, 1,190.22 ft); minimum since normal operating level was reached in May 1969, 157,400 acre-ft Oct. 1, 1984 (elevation, 1,169.89 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 316,400 acre-ft Sept. 15, 16, 20, 21 (elevation, 1,182.91 ft); minimum, 282,900 acre-ft May 1, 2, 3 (elevation, 1,180.62 ft).

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

1,180.0	274,200	1,182.0	302,800
1,181.0	288,300	1,183.0	317,800

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	300200	294700	294700	290500	294700	292600	289000	282900	285200	311000	302500	306800
2	300200	294400	294400	290500	294700	292100	289000	282900	e285700	310400	302400	306700
3	300500	294100	294100	290300	295100	291900	288600	283500	e292600	309800	302500	306100
4	300200	294700	294000	290300	295100	292400	288600	283500	309700	309800	302500	305500
5	300200	294700	294000	290300	295100	292400	288700	283400	310600	309200	302700	305900
6	300000	294500	292800	290600	295100	291800	288000	283400	310900	309200	302500	305500
7	299200	294000	292800	290600	295000	291800	286900	283400	313000	308900	302200	307300
8	299200	295300	293100	290600	294800	292100	286700	286500	313400	308300	302100	306800
9	299200	295700	293100	292600	294800	291800	286300	e286300	314200	307700	301500	306700
10	299200	295800	293100	292800	294800	291900	286000	e286300	314500	307300	301500	306200
11	298700	295800	293200	292800	294800	291800	286200	e286300	314600	306800	305500	306100
12	298400	295800	293100	292900	295000	291600	286200	e286300	314000	305900	309100	305800
13	298400	295800	292200	293400	295000	290800	286700	e286100	314200	305900	310700	310400
14	298000	295800	292500	293400	294000	290600	286600	e286100	313700	305500	311300	315700
15	298000	296000	292500	293400	293800	290300	286600	e286100	314300	305300	311300	315700
16	298000	295700	292600	293200	294000	290200	286500	e286100	314300	304600	311200	315500
17	297300	295400	292600	292900	294100	290200	286300	e286100	315700	304600	310700	316000
18	297000	295500	292900	293800	294000	290200	286000	e286300	315200	304600	310700	314900
19	296900	295500	292900	294800	293400	290300	285600	e286300	315200	304100	310300	315500
20	295800	295700	292100	294400	293400	290500	285300	e286300	315400	303100	310300	316400
21	295500	295700	291200	294400	293400	290500	285100	e286300	314900	302800	309200	315200
22	295500	295700	290900	294800	293700	289600	284800	e286800	314600	302800	308800	314200
23	295500	295700	290900	294800	294000	289700	284600	286000	313900	302400	308800	314300
24	295400	295700	290900	294800	293400	290000	284500	286300	313900	301300	308800	314200
25	295300	295700	290900	294800	293100	290000	284900	286300	313400	301500	308500	314300
26	295300	296000	290900	294700	293100	290200	285200	286200	313000	302500	308500	314200
27	295300	295500	290900	295000	293100	290300	284500	285900	312700	302800	307700	313700
28	295000	295300	291300	295300	293100	289500	284000	285500	311900	303200	307400	313900
29	295000	295000	290800	294000	---	288900	283800	284800	311800	302900	307000	313700
30	294800	295000	290500	294500	---	288900	283100	284900	310900	302800	307000	313700
31	294700	---	290500	294700	---	289200	---	285200	---	302700	306800	---
MAX	300500	296000	294700	295300	295100	292600	289000	286800	315700	311000	311300	316400
MIN	294700	294000	290500	290300	293100	288900	283100	282900	285200	301300	301500	305500
(†)	1181.44	1181.46	1181.15	1181.44	1181.33	1181.06	1180.63	1180.78	1182.54	1181.99	1182.27	1182.73
(ϕ)	-5800	+300	-4500	+4200	-1600	-3900	-6100	+2100	+25700	-8200	+4100	+6900

CAL YR 1990 MAX 341600 MIN 215500 (ϕ) +74100
WTR YR 1991 MAX 316400 MIN 282900 (ϕ) +13200

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

e Estimated

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: September 1963 to current year.

324932098575101 - HUBBARD CR RES SITE P01

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	RESERVOIR STORAGE (AC-FT)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
FEB											
14...	0916	294000	1.00	875	8.3	9.5	2.62	9.7	89	210	100
14...	0918	--	10.0	875	8.2	9.5	--	9.8	90	--	--
14...	0920	--	20.0	875	8.2	9.5	--	9.8	90	--	--
14...	0922	--	30.0	875	8.2	9.5	--	9.7	89	--	--
14...	0924	--	40.0	875	8.2	9.0	--	9.7	88	--	--
14...	0926	--	50.0	870	8.2	7.5	--	9.4	82	--	--
14...	0928	--	60.0	870	8.2	7.5	--	9.3	81	--	--
14...	0930	--	66.0	870	8.2	8.0	--	9.9	88	210	100
JUL											
22...	1225	303000	1.00	894	8.3	30.5	1.80	6.2	87	220	110
22...	1227	--	10.0	893	8.3	30.0	--	6.2	86	--	--
22...	1229	--	20.0	895	8.2	29.0	--	5.8	79	--	--
22...	1231	--	30.0	895	8.2	28.0	--	5.3	71	--	--
22...	1233	--	35.0	895	7.8	28.0	--	3.0	40	--	--
22...	1235	--	40.0	894	7.5	27.0	--	1.0	13	--	--
22...	1237	--	50.0	897	7.4	24.0	--	0.1	1	--	--
22...	1238	--	63.0	901	7.4	24.0	--	0.2	2	220	95

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
FEB										
14...	60	15	84	3	7.4	110	42	190	0.10	4.1
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	60	15	84	3	7.8	110	41	190	0.20	4.4
JUL										
22...	60	16	86	3	7.5	100	41	180	0.30	5.1
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	63	15	82	2	7.2	120	34	180	0.30	7.3

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB										
14...	469	<0.010	<0.100	0.010	0.39	0.40	<0.010	<0.010	<3	1
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	<0.010	<0.100	<0.010	--	0.30	0.010	<0.010	<10	<10
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	467	<0.010	<0.100	0.030	0.47	0.50	0.030	<0.010	<3	3
JUL										
22...	459	<0.010	<0.050	0.060	0.34	0.40	<0.010	<0.010	7	3
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	<0.010	<0.050	0.070	0.33	0.40	<0.010	<0.010	70	20
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	465	<0.010	<0.050	0.320	0.48	0.80	0.030	<0.010	600	1100

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324649099000501 - HUBBARD CR RES SITE P09

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
FEB										
14...	0842	1.00	875	8.2	9.5	1.65	9.5	87	210	110
14...	0844	10.0	875	8.2	9.5	--	9.6	88	--	--
14...	0846	20.0	875	8.2	9.5	--	9.6	88	--	--
14...	0848	30.0	875	8.2	9.0	--	9.6	87	--	--
14...	0850	40.0	870	8.2	9.0	--	9.6	87	--	--
14...	0852	46.0	875	8.1	9.0	--	10.0	91	210	110
JUL										
22...	1122	1.00	891	8.1	29.0	1.00	5.7	78	210	110
22...	1124	10.0	891	8.1	28.5	--	5.5	74	--	--
22...	1126	20.0	891	8.1	28.5	--	5.4	73	--	--
22...	1128	30.0	891	7.6	27.5	--	2.1	28	--	--
22...	1130	35.0	891	7.5	27.5	--	0.8	11	--	--
22...	1132	40.0	898	7.5	26.0	--	0.1	1	--	--
22...	1134	46.0	901	7.5	25.0	--	0.2	3	220	91

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
FEB										
14...	61	15	85	3	7.3	110	41	190	0.20	4.1
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	61	15	85	3	7.9	100	38	180	0.20	4.2
JUL										
22...	61	15	83	2	7.5	110	40	180	0.30	5.4
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	62	15	81	2	7.2	130	35	180	0.30	7.1

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB										
14...	468	<0.010	<0.100	<0.010	--	0.40	<0.010	<0.010	<3	1
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	453	<0.010	<0.100	0.020	0.28	0.30	<0.010	<0.010	<3	6
JUL										
22...	458	<0.010	<0.050	0.030	0.47	0.50	<0.010	<0.010	7	570
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	466	<0.010	<0.050	0.310	0.39	0.70	<0.010	<0.010	100	2300

324606099000201 - HUBBARD CR RES SITE P10

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
14...	0820	1.00	881	8.0	10.5	9.3	87
14...	0822	10.0	882	8.0	10.5	9.3	87
14...	0824	20.0	880	7.9	10.0	9.4	87
14...	0826	30.0	875	7.8	9.5	9.6	88
14...	0828	36.0	874	7.5	9.5	9.8	90
JUL							
22...	1055	1.00	890	8.1	28.5	5.4	73
22...	1057	10.0	890	8.1	28.0	5.3	71
22...	1059	20.0	891	7.9	28.0	4.9	66
22...	1101	30.0	891	7.8	27.5	4.4	58
22...	1103	37.0	891	7.6	27.5	3.2	42

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324514099010201 - HUBBARD CR RES SITE P11

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
14...	1245	1.00	880	8.2	11.0	9.0	85
14...	1247	10.0	880	8.2	10.5	9.1	85
14...	1249	20.0	880	8.2	10.5	9.2	86
14...	1251	28.0	880	8.2	10.5	9.3	87
JUL							
22...	1620	1.00	892	8.1	29.5	5.8	80
22...	1622	10.0	891	8.0	28.0	5.1	68
22...	1624	20.0	893	7.8	27.5	3.6	48
22...	1626	28.0	893	7.6	27.5	2.0	27

324301099001701 - HUBBARD CR RES SITE P12

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
FEB										
14...	1258	1.00	970	8.1	13.0	0.43	8.1	81	230	120
14...	1300	14.0	970	8.1	12.5	--	8.0	79	230	120
JUL										
22...	1640	1.00	886	8.3	30.5	0.40	6.9	97	220	110
22...	1642	10.0	892	7.9	28.0	--	4.3	58	--	--
22...	1644	14.0	892	7.8	28.5	--	4.1	55	210	100

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
FEB										
14...	67	15	96	3	7.3	110	45	210	0.20	3.4
14...	69	15	93	3	6.8	110	43	210	0.20	3.4
JUL										
22...	64	15	83	2	7.5	110	38	180	0.30	5.9
22...	--	--	--	--	--	--	--	--	--	--
22...	61	15	80	2	7.4	110	39	180	0.30	5.8

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB										
14...	511	<0.010	<0.100	0.050	0.35	0.40	0.020	<0.010	<3	4
14...	508	<0.010	<0.100	0.020	0.58	0.60	0.040	<0.010	11	14
JUL										
22...	462	<0.010	<0.050	0.070	0.23	0.30	0.020	<0.010	240	120
22...	--	--	--	--	--	--	--	--	--	--
22...	456	0.010	<0.050	0.070	0.43	0.50	0.050	<0.010	3	92

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324949098594301 - HUBBARD CR RES SITE P13

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
14...	1000	1.00	875	8.3	10.0	9.7	90
14...	1002	10.0	875	8.3	10.0	9.6	89
14...	1004	20.0	875	8.2	9.5	9.6	88
14...	1006	30.0	875	8.2	9.5	9.6	88
14...	1008	40.0	875	8.2	9.0	9.5	86
14...	1010	50.0	875	8.2	8.5	9.3	83
14...	1012	59.0	870	8.2	8.5	9.2	82
JUL							
22...	1310	1.00	896	8.3	30.0	6.2	86
22...	1312	10.0	895	8.3	29.5	6.2	85
22...	1314	20.0	896	8.2	29.0	5.5	75
22...	1316	30.0	896	8.0	28.5	4.5	61
22...	1318	40.0	898	7.8	28.0	3.2	43
22...	1320	45.0	897	7.4	25.0	0.1	1
22...	1322	50.0	899	7.4	24.0	0.1	1
22...	1324	59.0	901	7.4	24.0	0.1	1

324802099021601 - HUBBARD CR RES SITE P15

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
14...	1033	1.00	885	8.2	10.0	9.4	87
14...	1035	10.0	885	8.2	10.0	9.4	87
14...	1037	20.0	880	8.2	9.5	9.5	87
14...	1039	30.0	880	8.2	9.5	9.5	87
14...	1041	38.0	880	8.3	9.5	9.7	89
JUL							
22...	1355	1.00	901	8.3	30.5	6.2	87
22...	1357	10.0	895	8.2	29.5	5.7	78
22...	1359	20.0	902	8.0	29.0	5.0	68
22...	1401	30.0	899	8.0	29.0	5.0	68
22...	1403	34.0	899	8.0	29.0	5.0	68

324653099032401 - HUBBARD CR RES SITE P16

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
FEB										
14...	1050	1.00	905	8.2	11.5	0.76	8.9	85	220	110
14...	1052	10.0	905	8.2	11.5	--	8.9	85	--	--
14...	1054	22.0	900	8.2	11.0	--	9.1	86	210	100
JUL										
22...	1420	1.00	903	8.2	31.0	0.50	5.9	83	210	100
22...	1422	10.0	900	8.1	29.0	--	5.1	70	--	--
22...	1424	22.0	900	8.0	28.5	--	4.8	65	210	100

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
FEB										
14...	62	16	87	3	7.3	110	42	190	0.20	3.9
14...	--	--	--	--	--	--	--	--	--	--
14...	61	15	86	3	7.5	110	42	190	0.20	4.0
JUL										
22...	60	15	83	2	7.7	110	41	180	0.30	5.6
22...	--	--	--	--	--	--	--	--	--	--
22...	58	15	84	3	7.5	110	40	190	0.30	5.5

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324653099032401 - HUBBARD CR RES SITE P16--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
FEB										
14...	474	<0.010	<0.100	<0.010	--	0.30	<0.010	<0.010	<3	2
14...	--	--	--	--	--	--	--	--	--	--
14...	472	<0.010	<0.100	<0.010	--	0.40	0.040	<0.010	<3	8
JUL										
22...	458	<0.010	<0.050	0.040	0.46	0.50	0.020	<0.010	5	3
22...	--	--	--	--	--	--	--	--	--	--
22...	464	<0.010	<0.050	0.060	0.44	0.50	0.030	<0.010	17	21

324608099042101 - HUBBARD CR RES SITE P17

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB							
14...	1130	1.00	1040	8.0	13.5	7.8	78
14...	1132	10.0	1010	8.0	13.0	7.6	76
14...	1134	22.0	1560	7.9	10.0	6.1	57
JUL							
22...	1456	1.00	968	8.1	30.0	5.9	82
22...	1458	10.0	923	7.6	28.5	2.8	38
22...	1500	15.0	922	7.5	28.0	2.1	28
22...	1502	21.0	965	7.4	28.0	0.8	11

324541099053601 - HUBBARD CR RES SITE P18

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
FEB										
14...	1155	1.00	1250	8.0	13.5	--	8.1	82	300	160
14...	1157	10.0	1410	7.9	12.5	--	7.9	78	--	--
14...	1159	19.0	1780	7.9	11.0	--	6.8	65	410	260
JUL										
22...	1516	1.00	1030	8.1	31.0	0.50	5.8	82	250	110
22...	1518	5.00	998	7.8	29.0	--	3.9	53	--	--
22...	1520	10.0	973	7.4	28.5	--	0.1	1	--	--
22...	1522	15.0	986	7.3	28.0	--	0.1	1	--	--
22...	1524	20.0	1000	7.3	27.5	--	0.1	1	240	90

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
FEB										
14...	82	22	130	3	6.9	130	70	270	0.20	2.1
14...	--	--	--	--	--	--	--	--	--	--
14...	110	33	190	4	5.6	150	52	420	0.20	3.3
JUL										
22...	72	17	95	3	6.8	140	39	190	0.30	9.6
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	68	17	90	3	6.1	150	31	200	0.30	11

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324541099053601 - HUBBARD CR RES SITE P18--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
FEB										
14...	662	<0.010	<0.100	0.020	0.48	0.50	0.020	<0.010	<3	5
14...	--	--	--	--	--	--	--	--	--	--
14...	903	<0.010	0.200	0.070	0.43	0.50	0.020	<0.010	<3	2
JUL										
22...	515	<0.010	<0.050	0.040	0.76	0.80	0.020	<0.010	8	40
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	517	0.010	<0.050	0.810	0.99	1.8	0.080	0.020	1900	1500

08088000 BRAZOS RIVER NEAR SOUTH BEND, TX

LOCATION.--Lat 33°01'27", long 98°38'37", Young County, Hydrologic Unit 12060201, on left bank 225 ft downstream from bridge on State Highway 67, 1.8 mi downstream from Clear Fork Brazos River, 2.0 mi northeast of South Bend, and at mile 758.2.

DRAINAGE AREA.--22,673 mi², of which 9,566 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1938 to current year.

REVISED RECORDS.--WRD TX-74-1: 1973. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,002.98 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 23, 1939, nonrecording gage at site 255 ft upstream; and Feb. 23, 1939, to Mar. 9, 1961, water-stage recorder at site 225 ft upstream at same datum.

REMARKS.--Records good. There are many small diversions upstream from station for municipal supply and oil field operation. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08080950. Gage-height telemeter at station.

AVERAGE DISCHARGE.--53 years, 833 ft³/s (603,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 87,400 ft³/s May 4, 1941 (gage height, 27.35 ft); maximum gage height, 41.50 ft Aug. 6, 1978, from floodmark; no flow at times.
Maximum stage since 1938, that of Aug. 6, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1876 reached a stage of 36.2 ft, from information by State Department of Highways and Public Transportation and U.S. Army Corps of Engineers. Flood of Sept. 24, 1900, reached a stage of 29.5 ft, and flood of June 16, 1930, reached a stage of 35.5 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft³/s and maximum(*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 5	0430	*16,800	*22.39	June 8	1700	16,300	22.14

Minimum discharge, 54 ft³/s Apr. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	663	157	154	146	358	165	119	61	241	566	953	346
2	567	154	149	129	343	150	121	66	250	538	804	338
3	528	146	136	120	336	140	108	1950	7520	518	605	322
4	481	191	133	146	330	141	108	9560	13500	468	434	300
5	464	210	133	149	318	144	103	5290	15600	444	366	285
6	445	192	120	143	313	133	107	2310	12900	438	324	318
7	406	176	126	145	308	130	107	1450	14300	398	289	528
8	372	231	131	148	299	131	106	4130	15900	382	261	649
9	357	342	124	166	291	130	94	2680	15700	367	246	413
10	356	298	118	514	278	136	95	1230	14300	352	252	427
11	358	290	121	582	269	135	102	889	11500	336	250	486
12	363	292	120	579	271	125	105	671	10500	325	765	472
13	347	287	112	573	260	120	100	561	9530	318	1680	400
14	361	264	111	590	247	117	99	469	5490	308	2960	1420
15	348	253	113	545	240	118	96	441	3150	302	2480	963
16	315	224	120	496	238	129	104	452	2580	282	2360	2070
17	285	225	124	443	230	132	110	387	2550	269	1990	2500
18	259	232	134	431	219	134	97	350	1990	262	1640	1230
19	248	216	142	518	205	137	89	324	1690	250	2410	1430
20	236	212	146	660	202	139	84	295	1550	243	2410	1780
21	215	200	131	638	199	151	83	268	1340	231	1810	5560
22	208	191	128	702	197	170	73	248	1170	221	1590	4090
23	197	190	90	663	195	179	71	235	1050	208	1070	2360
24	189	185	103	595	189	169	69	257	956	269	767	1850
25	181	174	124	532	177	148	81	233	917	296	616	1600
26	173	179	120	473	175	142	90	238	864	335	524	1300
27	169	182	121	437	176	146	98	240	778	584	464	1100
28	172	199	125	419	173	157	101	330	704	823	435	962
29	169	169	136	395	---	132	86	315	660	1160	420	843
30	164	160	134	386	---	124	78	284	623	2010	402	748
31	160	---	148	373	---	118	---	276	---	1800	368	---
TOTAL	9756	6421	3927	12836	7036	4322	2884	36490	169803	15303	31945	37090
MEAN	315	214	127	414	251	139	96.1	1177	5660	494	1030	1236
MAX	663	342	154	702	358	179	121	9560	15900	2010	2960	5560
MIN	160	146	90	120	173	117	69	61	241	208	246	285
AC-FT	19350	12740	7790	25460	13960	8570	5720	72380	336800	30350	63360	73570

CAL YR 1990 TOTAL 638519 MEAN 1749 MAX 43800 MIN 34 AC-FT 1267000
WTR YR 1991 TOTAL 337813 MEAN 926 MAX 15900 MIN 61 AC-FT 670100

08088000 BRAZOS RIVER NEAR SOUTH BEND, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1941 to March 1948, May 1965 to current year. Chemical and biochemical analyses: November 1977 to current year. Pesticide analyses: March 1968 to April 1982. Sediment analyses: May to September 1962, November 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1942 to March 1948, November 1977 to September 1981.
WATER TEMPERATURE: November 1977 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 14,000 microsiemens Dec. 4, 1979; minimum daily, 350 microsiemens Aug. 6, 1978.
WATER TEMPERATURE: Maximum daily, 36.0°C on several days during July and August 1981; minimum daily, 0.0°C Jan. 10, 11, 18, 21, Feb. 18, 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV												
08...	1100	277	6310	8.2	10.5	49	12.1	117	2.4	600	>1000	930
JAN												
18...	1030	439	7380	7.9	7.5	6.5	12.1	108	1.0	110	270	940
MAR												
21...	1010	142	9560	8.1	9.5	23	9.4	89	5.5	K57	130	1300
MAY												
09...	0915	3560	1150	8.0	19.5	500	6.7	76	2.7	>6000	>10000	160
JUL												
17...	1045	263	8850	7.9	30.5	10	7.6	107	1.8	K35	720	1200
AUG												
15...	1020	2400	7910	7.7	24.5	500	6.5	82	0.2	K1500	4700	870

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
NOV											
08...	800	240	80	1000	14	9.0	0	167	137	780	1700
JAN											
18...	740	240	82	1200	17	8.5	0	237	194	750	1900
MAR											
21...	1100	310	120	1500	18	11	0	228	187	1300	--
MAY											
09...	95	48	10	150	5	6.3	0	82	67	73	250
JUL											
17...	1000	320	97	1500	19	11	0	196	160	1000	2300
AUG											
15...	790	250	59	1300	19	11	0	95	78	710	2000

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
NOV											
08...	<0.10	5.0	3830	3900	--	--	0.020	<0.010	<0.100	<0.100	0.040
JAN											
18...	0.30	5.7	4590	4310	1.37	1.28	0.030	0.020	1.40	1.30	0.060
MAR											
21...	0.70	4.0	5900	--	--	--	<0.010	<0.010	<0.050	0.062	0.070
MAY											
09...	0.20	8.5	611	590	0.440	0.460	0.040	0.020	0.480	0.480	0.640
JUL											
17...	0.80	12	5400	5340	--	--	0.010	<0.010	<0.050	<0.050	0.100
AUG											
15...	0.60	7.7	4640	4390	0.580	0.600	0.030	0.020	0.610	0.620	0.050

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	SEDI-MENT, SUS-PENDED (MG/L)
NOV											
08...	0.020	0.36	--	--	0.40	0.030	0.010	<0.010	0.040	--	68
JAN											
18...	0.060	0.64	--	--	0.70	0.430	0.370	0.390	0.410	1.2	37
MAR											
21...	0.030	1.1	--	--	1.2	0.060	0.080	0.030	0.030	0.09	45
MAY											
09...	0.060	2.5	--	--	3.1	1.10	0.110	0.080	0.110	0.25	1370
JUL											
17...	0.070	0.70	0.53	0.60	0.80	0.080	<0.010	<0.010	<0.010	--	110
AUG											
15...	0.060	1.0	1.2	1.3	1.1	0.160	0.060	0.050	0.050	0.15	1540

08088000 BRAZOS RIVER NEAR SOUTH BEND, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
NOV											
08...	51	78	<10	2	100	<10	<1.0	<1	<1	3	40
JAN											
18...	44	93	--	--	--	--	--	--	--	--	--
MAR											
21...	17	85	10	<1	300	<10	<1.0	<1	<1	6	<10
MAY											
09...	13200	98	340	2	90	<0.5	<1.0	<1	<3	12	160
JUL											
17...	78	88	--	--	--	--	--	--	--	--	--
AUG											
15...	9980	100	30	4	200	<10	2.0	1	<1	2	30

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
NOV											
08...	1	70	40	<0.1	3	1	<1	<1.0	5100	19	<10
JAN											
18...	--	--	--	--	--	--	--	--	--	--	--
MAR											
21...	<1	110	90	0.4	4	3	<4	<1.0	6000	71	20
MAY											
09...	2	10	15	0.1	<10	3	<1	<1.0	840	<6	11
JUL											
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
15...	<1	40	<10	<0.1	3	<2	1	<1.0	4300	33	<10

08088400 LAKE GRAHAM NEAR GRAHAM, TX

LOCATION.--Lat 33°08'04", long 98°36'48", Young County, Hydrologic Unit 12060201, near left end of earthen dam on Salt Creek, 2.2 mi northwest of Graham, 5 mi downstream from Briar Creek, and 9.5 mi upstream from mouth.

DRAINAGE AREA.--221 mi².

PERIOD OF RECORD.--March 1958 to September 1963 (unpublished record), October 1963 to current year. Prior to October 1965, monthend contents only.
Water-quality records.--Chemical analyses: October 1969 to September 1984.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.30 ft above National Geodetic Vertical Datum of 1929. Prior to October 1963, nonrecording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 5,000 ft long. Lake Graham was connected with Lake Eddleman in 1959 by a cut channel at a gage height of 1,050.0 ft. Deliberate impoundment began Apr. 28, 1958, and dam was completed in July 1958. The uncontrolled emergency spillway is a 1,050-foot-wide cut at the right end of dam. The spillway is designed to discharge 136,500 ft³/s at a gage height of 1,087.5 ft. The dam is the property of the city of Graham and was built to impound water for municipal and industrial uses. In addition, water is used by the Texas Electric Service Co. for operation of their steam generating powerplant. The capacity table is based on an original survey of Lake Eddleman in 1928 and a Salt Creek survey of 1953. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	1,092.0	-
Crest of spillway	1,075.0	53,680
Bottom of interconnecting channel	1,050.0	8,670
Lowest gated outlet (invert)	1,050.0	8,670

COOPERATION.--Capacity table was provided by Freese, Nichols, and Endress, Consulting Engineers. Record of diversions provided by the city of Graham.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 63,280 acre-ft May 3, 1990 (gage height, 1,078.52 ft); minimum, 23,390 acre-ft May 1, 1980 (gage height, 1,061.23 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 51,140 acre-ft June 17 at 1100 hours (gage height, 1,074.00 ft); minimum, 44,300 acre-ft May 2 (gage height, 1,071.20 ft).

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

1,071.0	43,820	1,073.0	48,660
1,072.0	46,220	1,074.0	51,140

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48460	46950	46730	46270	47070	46560	45670	44400	46420	50170	48050	46610
2	48390	46850	46710	46240	47050	46540	45620	45280	47370	50100	47950	46610
3	48340	46930	46830	46220	47020	46510	45640	46830	49260	50020	47900	46590
4	48290	47030	46780	46240	47050	46460	45600	47320	50400	49920	47780	46760
5	48170	46980	46730	46320	47070	46460	45570	47290	50270	49850	47730	46730
6	48120	47000	46680	46460	47020	46440	45550	46950	50270	49780	47640	46680
7	48170	46930	46660	46410	47020	46370	45500	47370	50320	49680	47590	46780
8	48070	47220	46660	46340	47020	46190	45480	47390	50740	49550	47510	46730
9	47950	47220	46590	46610	47000	46150	45400	47730	50920	49450	47420	46630
10	47900	47240	46590	47000	47000	46100	45330	47730	50720	49350	47420	46630
11	47830	47220	46560	47050	47000	46050	45260	47440	50720	49260	47390	46880
12	47810	47200	46540	46950	47150	46050	45260	47440	50720	49130	47640	46460
13	47760	47200	46540	46900	47120	46000	45280	47390	50520	49080	47640	46660
14	47710	47170	46540	46880	47070	45930	45210	47370	50590	48980	47590	46780
15	47660	47120	46460	46930	47020	45880	45160	47290	50520	48880	47540	46810
16	47640	47120	46540	46930	46950	45960	45070	47240	51070	48830	47460	46810
17	47560	47100	46630	47020	46930	45960	45070	47420	51120	48710	47560	46810
18	47490	47100	46510	47150	46880	45930	45070	47420	51090	48610	47510	46630
19	47420	47050	46460	47170	46850	45880	45000	47370	51070	48510	47460	46610
20	47370	47070	46420	47220	46760	45840	44920	47340	50990	48370	47420	46560
21	47270	47100	46590	47240	46680	45880	44830	47240	50890	48370	47370	46460
22	47240	47170	46560	47240	46660	46000	45000	46930	50840	48200	47270	46420
23	47200	47170	46510	47220	46680	45980	44920	46880	50640	48070	47200	46390
24	47170	47150	46490	47200	46660	45960	44830	46900	50790	48030	47150	46320
25	47120	47100	46420	47200	46610	45930	44880	46880	50690	48030	47100	46320
26	47070	47150	46390	47170	46590	45980	44830	46830	50500	48070	47000	46220
27	47050	47150	46370	47150	46590	45930	44970	46730	50540	48320	46950	46220
28	47050	47100	46340	47120	46590	45880	44900	46930	50370	48340	46850	46150
29	46980	47050	46320	47150	---	45860	44800	46850	50320	48320	46780	46100
30	47030	46980	46320	47150	---	45760	44470	46810	50200	48270	46760	46100
31	46880	---	46290	47100	---	45720	---	46490	---	48120	46660	---
MAX	48460	47240	46830	47240	47150	46560	45670	47730	51120	50170	48050	46880
MIN	46880	46850	46290	46220	46590	45720	44470	44400	46420	48030	46660	46100
(†)	1072.27	1072.31	1072.03	1072.36	1072.15	1071.79	1071.27	1072.11	1073.62	1072.78	1072.18	1071.95
(ϕ)	-1630	+100	-690	+810	-510	-870	-1250	+2020	+3710	-2080	-1460	-560

CAL YR 1990 MAX 62100 MIN 46290 (ϕ) -810
WTR YR 1991 MAX 51120 MIN 44400 (ϕ) -2410

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

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX

LOCATION.--Lat 32°52'20", long 98°25'32", Palo Pinto County, Hydrologic Unit 12060201, at Morris Sheppard Dam on the Brazos River, 2.6 mi upstream from Loving Creek, 11.3 mi southwest of Graford, and at mile 687.5.

DRAINAGE AREA.--23,596 mi², approximately, of which 9,566 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1941 to current year. Prior to October 1977, published as Possum Kingdom Reservoir.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 0.10 ft National Geodetic Vertical Datum of 1929 (levels by Brazos River Authority). Prior to Mar. 19, 1968, mercury U-tube in powerhouse at present site and datum.

REMARKS.--The lake is formed by reinforced concrete dam, Ambursen-type, massive buttress with flat-slab deck, a controlled spillway, two bulkhead sections, and an earthen-dike section. Total length of dam is 2,740 ft long. The dam was completed and storage began Mar. 21, 1941. The spillway has nine roof-weir gates (modified bear-trap type) that are 73.66 by 13 ft each and are designed to discharge about 100,000 ft³/s at a gage height of 1,000.0 ft. The outlet works consist of one controlled 54-inch-diameter conduit. Water is used for power development, irrigation, municipal, industrial, and recreational purposes. Two generators located in the powerhouse at dam can produce 22,500 kilowatts at a 1,000-foot gage height. Eleven major reservoirs, with a combined capacity of 607,800 acre-ft, largely regulate the inflow. The capacity curve is based on recomputation of a survey made in 1974. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08080950. Gage-height telemeter at station since Jan. 13, 1981. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	1,024.0	-
Design flood (top of gates)	1,000.0	570,200
Crest of spillway	987.0	383,300
Invert of penstock	911.5	4,560
Lowest gated outlet (invert of 54-inch conduit)	874.8	0

COOPERATION.--Capacity table 3-C provided by the Brazos River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 743,700 acre-ft Oct. 5, 1941 (gage height, 1,001.0 ft); maximum gage height, 1,003.60 ft Oct. 13, 1981; minimum contents observed, 273,000 acre-ft Feb. 19 to Mar. 17, 1953 (gage height, 967.0 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 555,100 acre-ft May 9 at 1000 hours (gage height, 999.13 ft); minimum, 485,100 acre-ft May 3 (gage height, 994.75 ft).

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

994.5	481,400	996.5	511,900	998.5	544,400
995.0	488,800	997.0	519,800	999.0	552,800
995.5	496,400	997.5	527,900	999.5	561,500
996.0	504,000	998.0	536,000		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	543700	529700	531600	519300	529400	527100	501600	486400	529400	533100	523200	531800
2	543200	527400	532300	519800	529500	525600	499900	486000	533600	533200	523700	532100
3	542200	526100	530000	516300	530200	522700	500000	497500	533200	532900	523700	531800
4	540900	525100	529400	514100	530800	520600	499900	513500	517300	531800	523000	530800
5	541900	524800	530000	515400	530800	520600	499100	528200	511400	531500	521900	530000
6	540900	522700	528900	515500	531100	520000	499600	536000	507500	531000	521100	529000
7	540200	522400	528900	516000	531100	518500	497600	540000	504300	530300	520300	530000
8	541500	525600	529200	515200	531800	517900	495900	552500	505700	529000	519500	530200
9	538000	526300	529400	517300	532400	517900	494600	546600	508700	528400	518100	530500
10	537200	526900	529400	518900	532600	517900	494100	532900	508700	527300	518500	530800
11	537500	527100	527700	520100	532600	516800	494400	530800	514900	526600	518900	530300
12	538000	527600	528400	519800	532300	516000	494700	532300	524800	525800	523400	530000
13	537700	528400	527900	521300	532400	513800	495200	531600	540200	525300	525100	529800
14	536800	528500	528200	522100	533900	512200	494900	532300	545900	524300	530200	530200
15	536000	529200	528200	522900	529500	509700	494900	532600	536000	523000	532800	530700
16	536300	529400	528900	523700	526400	510000	494900	533100	523200	522100	533600	533600
17	534700	529200	529000	524700	526400	510300	496100	533200	522100	521300	534900	535700
18	534700	530200	529000	526600	526400	509700	496100	533700	526600	520100	535400	532600
19	534200	530200	529800	528200	524700	508600	495800	534100	529700	519000	535800	531500
20	535700	531000	529700	527400	524300	507200	494600	533100	532100	517400	538700	531100
21	534700	530800	527900	527300	524500	506500	493200	533400	534200	515800	539500	535200
22	533700	531500	524500	527400	524800	506800	492600	533700	533700	514600	539500	540400
23	532600	531500	522700	527700	525100	506500	491800	533600	533900	513600	539000	541400
24	531800	531900	521700	528200	525600	505900	490800	534100	533900	512800	537800	539400
25	530800	531800	522100	528700	525000	504000	491100	533900	534100	513300	536200	537700
26	530000	533100	522100	529000	525300	504300	490300	533100	534400	515500	535400	535000
27	530200	532100	521300	530000	526100	504600	489700	532800	534200	513500	534100	535000
28	530200	532100	521700	530700	526000	503800	489400	532300	534100	515800	532900	535500
29	530200	531500	521900	529500	---	503100	487600	531100	533900	516500	531800	536200
30	529800	531100	519000	528900	---	502500	487200	531100	533400	517900	532100	536300
31	530000	---	518700	529000	---	502000	---	530300	---	521600	532100	---
MAX	543700	533100	532300	530700	533900	527100	501600	552500	545900	533200	539500	541400
MIN	529800	522400	518700	514100	524300	502000	487200	486000	504300	512800	518100	529000
(†)	997.63	997.70	996.93	997.57	997.38	995.87	994.89	997.65	997.84	997.11	997.76	998.02
(ϕ)	-15200	+1100	-12400	+10300	-3000	-24000	-14800	+43100	+3100	-11800	+10500	+4200

CAL YR 1990 MAX 567600 MIN 487900 (ϕ) +27500
WTR YR 1991 MAX 552500 MIN 486000 (ϕ) -8900

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

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1962 to September 1977. Chemical and biochemical analyses: February 1978 to current year.

325208098254201 - POSSUM KINGDOM LK SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1335	1.00	2420	8.4	11.5	10.7	104
13...	1337	10.0	2420	8.3	11.0	10.4	100
13...	1339	20.0	2420	8.2	10.5	9.9	94
13...	1341	30.0	2410	8.2	10.0	9.7	91
13...	1343	40.0	2440	8.2	9.5	9.3	86
13...	1345	50.0	2440	8.2	9.0	8.8	81
13...	1347	62.0	2800	8.2	8.0	6.3	56
MAY							
15...	1149	1.00	2680	8.5	23.5	7.5	94
15...	1150	10.0	2670	8.5	23.0	7.6	94
15...	1152	20.0	2670	8.4	21.5	7.5	90
15...	1154	30.0	2700	8.3	21.0	6.7	80
15...	1156	40.0	2710	8.2	19.5	5.6	65
15...	1158	50.0	2750	7.9	16.5	4.7	51
15...	1200	62.0	2780	7.8	15.0	4.6	48
JUL							
23...	1315	1.00	1990	8.4	30.5	6.1	85
23...	1317	10.0	1980	8.1	29.0	4.9	66
23...	1319	20.0	1960	8.0	28.0	4.1	55
23...	1321	25.0	1960	7.8	28.5	3.5	47
23...	1323	30.0	2020	7.4	27.5	0.1	1
23...	1325	40.0	2070	7.4	26.5	0	0
23...	1327	50.0	2150	7.4	26.0	0	0
23...	1329	57.0	2250	7.5	25.5	0	0

325218098254101 - POSSUM KINGDOM LK SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	RESERVOIR STORAGE (AC-FT)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
FEB											
13...	1255	532000	1.00	2430	8.2	11.0	2.13	10.4	100	400	290
13...	1257	--	10.0	2410	8.2	10.5	--	9.9	94	--	--
13...	1259	--	20.0	2420	8.1	10.0	--	9.7	91	--	--
13...	1301	--	30.0	2420	8.1	10.0	--	9.7	91	--	--
13...	1303	--	40.0	2420	8.0	9.5	--	9.3	86	--	--
13...	1305	--	50.0	2440	7.9	9.0	--	8.8	81	--	--
13...	1308	--	60.0	2990	7.8	7.5	--	5.5	49	--	--
13...	1310	--	70.0	3180	7.8	7.0	--	5.8	51	--	--
13...	1312	--	80.0	3460	7.8	7.0	--	6.5	57	--	--
13...	1314	--	90.0	3900	7.8	7.0	--	5.6	49	--	--
13...	1316	--	102	4210	7.8	8.0	--	2.1	19	630	490
MAY											
15...	1125	533000	1.00	2670	8.5	23.0	2.40	6.9	85	430	320
15...	1127	--	10.0	2670	8.5	22.5	--	6.9	84	--	--
15...	1129	--	20.0	2670	8.4	21.0	--	6.7	80	--	--
15...	1131	--	30.0	2700	8.3	20.0	--	6.0	70	--	--
15...	1133	--	40.0	2720	8.2	19.0	--	5.5	63	--	--
15...	1135	--	50.0	2740	7.8	16.5	--	4.7	51	--	--
15...	1137	--	60.0	2770	7.8	15.0	--	4.5	47	--	--
15...	1139	--	70.0	2900	7.7	14.0	--	3.6	37	--	--
15...	1141	--	80.0	3150	7.6	13.0	--	1.7	17	--	--
15...	1143	--	90.0	3380	7.5	12.0	--	0.1	1	--	--
15...	1145	--	100	3440	7.6	11.5	--	0.2	2	560	420
JUL											
23...	1218	514000	1.00	1990	8.4	30.5	2.60	6.1	85	350	260
23...	1220	--	10.0	1990	8.2	29.5	--	5.4	74	--	--
23...	1222	--	20.0	1970	8.0	29.0	--	4.1	56	--	--
23...	1224	--	25.0	1980	7.7	28.5	--	2.8	38	--	--
23...	1226	--	30.0	2030	7.5	27.5	--	0.5	7	--	--
23...	1228	--	40.0	2090	7.4	26.0	--	0.1	1	--	--
23...	1230	--	50.0	2160	7.4	25.5	--	0	0	--	--
23...	1232	--	60.0	2410	7.4	24.5	--	0	0	--	--
23...	1234	--	70.0	2960	7.4	21.5	--	0	0	--	--
23...	1236	--	80.0	3100	7.4	20.0	--	0	0	--	--
23...	1238	--	90.0	3130	7.4	18.5	--	0	0	--	--
23...	1240	--	97.0	3120	7.4	18.0	--	0	0	480	330

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325218098254101 - POSSUM KINGDOM LK SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
FEB											
13...	110	30	340	7	7.3	110	310	550	0.30	7.0	1420
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	170	51	650	11	7.6	150	530	1000	0.40	7.0	2560
MAY											
15...	120	32	360	8	7.2	110	320	580	0.40	6.1	1490
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	150	45	490	9	7.5	140	390	800	0.30	7.7	1970
JUL											
23...	100	25	250	6	7.0	90	290	400	0.30	6.1	1130
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	130	37	430	9	7.1	150	340	720	0.40	8.8	1760

DATE	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB										
13...	--	<0.010	<0.100	<0.010	--	<0.20	0.020	<0.010	10	<10
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	<0.010	0.100	0.020	0.38	0.40	<0.010	<0.010	<10	10
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	<0.010	0.200	0.110	0.49	0.60	0.020	0.020	20	530
MAY										
15...	--	<0.010	<0.050	<0.010	--	0.40	0.010	<0.010	<10	<10
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	0.100	0.010	0.110	0.030	0.37	0.40	0.010	<0.010	<10	10
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	0.110	0.020	0.130	0.300	0.50	0.80	0.170	0.140	10	510
JUL										
23...	--	<0.010	<0.050	0.040	0.36	0.40	<0.010	<0.010	11	2
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	0.150	0.030	0.180	0.110	0.29	0.40	<0.010	<0.010	50	160
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	<0.010	<0.050	0.950	0.45	1.4	0.280	0.250	90	810

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325250098275301 - POSSUM KINGDOM LK SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1215	1.00	2400	8.5	11.0	11.1	107
13...	1217	10.0	2410	8.5	11.0	11.1	107
13...	1219	20.0	2410	8.4	11.0	10.9	105
13...	1221	30.0	2410	8.4	10.0	10.2	96
13...	1223	40.0	2440	8.3	9.0	9.5	87
13...	1225	50.0	2680	8.4	8.0	8.6	77
MAY							
15...	1050	1.00	2680	8.5	23.0	6.9	85
15...	1052	10.0	2690	8.5	22.5	7.0	86
15...	1054	20.0	2680	8.5	22.0	6.9	84
15...	1056	30.0	2860	8.2	20.0	5.5	64
15...	1058	40.0	2910	8.0	19.5	4.7	54
15...	1100	52.0	2980	7.7	17.0	3.3	36
JUL							
23...	1126	1.00	1970	8.5	30.5	6.4	89
23...	1128	10.0	1970	8.4	30.0	6.1	84
23...	1130	20.0	1970	8.1	29.0	4.8	65
23...	1132	25.0	1860	7.4	27.5	0.2	3
23...	1134	30.0	1850	7.4	26.0	0.1	1
23...	1136	40.0	1900	7.4	26.0	0	0
23...	1138	50.0	1950	7.4	25.0	0	0
23...	1140	54.0	2070	7.4	25.0	0	0

325256098275301 - POSSUM KINGDOM LK SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1145	1.00	2400	8.5	11.5	11.2	109
13...	1147	10.0	2410	8.4	11.0	11.0	106
13...	1149	20.0	2410	8.4	10.5	10.8	102
13...	1151	30.0	2420	8.2	10.0	10.5	98
13...	1153	40.0	2450	8.2	9.0	9.2	84
13...	1155	50.0	2850	8.2	7.5	8.2	73
13...	1157	60.0	3160	8.1	8.0	7.7	69
13...	1159	70.0	3350	8.1	8.0	7.0	63
13...	1201	80.0	3500	8.1	8.0	6.3	57
13...	1203	92.0	4030	8.1	8.0	3.0	27
MAY							
15...	1020	1.00	2690	8.5	23.5	6.6	82
15...	1022	10.0	2690	8.5	23.0	6.7	83
15...	1024	20.0	2690	8.4	22.0	6.6	80
15...	1026	30.0	2850	8.2	20.5	5.7	67
15...	1028	40.0	2890	8.0	19.5	4.8	55
15...	1030	50.0	2970	7.7	17.5	3.3	37
15...	1032	60.0	2930	7.7	15.5	3.6	38
15...	1034	70.0	3060	7.6	14.5	2.4	25
15...	1036	80.0	3210	7.6	13.5	1.3	13
15...	1038	92.0	3390	7.5	12.0	0.5	5
JUL							
23...	1042	1.00	1960	8.5	30.5	6.2	86
23...	1044	10.0	1970	8.3	29.0	5.7	77
23...	1046	20.0	1960	8.0	28.5	4.3	58
23...	1048	25.0	1850	7.4	28.0	0.1	1
23...	1050	30.0	1870	7.4	26.0	0.1	1
23...	1052	40.0	1940	7.4	25.5	0.1	1
23...	1054	50.0	2000	7.4	25.0	0	0
23...	1056	60.0	2270	7.4	24.0	0	0
23...	1058	70.0	2730	7.4	22.0	0	0
23...	1100	80.0	3030	7.4	20.0	0	0
23...	1102	89.0	3110	7.3	18.0	0	0

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325129098311801 - POSSUM KINGDOM LK SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1106	1.00	2360	8.3	9.5	10.0	93
13...	1108	10.0	2370	8.3	9.5	10.0	93
13...	1110	20.0	2370	8.3	10.0	10.0	94
13...	1112	30.0	2370	8.3	9.0	10.0	92
13...	1114	40.0	2380	8.4	9.0	9.8	90
13...	1116	50.0	2520	8.4	8.0	9.2	82
13...	1118	60.0	2960	8.4	8.0	8.4	75
13...	1120	70.0	3710	8.3	8.5	7.0	64
13...	1122	77.0	3910	8.2	8.5	5.9	54
MAY							
15...	0935	1.00	2750	8.4	22.5	6.8	83
15...	0937	10.0	2740	8.4	22.5	6.8	83
15...	0939	20.0	2730	8.2	21.5	5.8	70
15...	0941	30.0	2860	8.2	21.0	5.7	68
15...	0943	40.0	3180	8.1	20.5	4.9	58
15...	0945	50.0	3210	7.6	18.0	2.2	25
15...	0947	60.0	3160	7.5	16.0	1.5	16
15...	0949	70.0	3200	7.4	14.5	0.2	2
15...	0951	77.0	3240	7.4	14.5	0.6	6
JUL							
23...	0950	1.00	1890	8.4	28.5	6.0	81
23...	0952	10.0	1880	8.3	28.5	5.5	74
23...	0956	20.0	1900	8.1	28.5	4.8	64
23...	0958	30.0	1990	7.4	27.5	1.0	13
23...	1000	40.0	1930	7.4	25.0	0.1	1
23...	1002	50.0	1960	7.4	24.0	0	0
23...	1004	60.0	2520	7.3	23.5	0	0
23...	1006	70.0	3200	7.3	22.0	0	0
23...	1008	74.0	3350	7.3	21.5	0	0

325327098314001 - POSSUM KINGDOM LK SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)
FEB											
13...	0905	1.00	2310	8.4	11.0	2.62	10.6	102	390	280	110
13...	0907	10.0	2310	8.3	10.0	--	10.5	99	--	--	--
13...	0909	20.0	2320	8.3	9.5	--	10.4	96	--	--	--
13...	0911	30.0	2330	8.3	9.0	--	10.2	94	--	--	--
13...	0913	40.0	2430	8.2	8.5	--	9.5	86	--	--	--
13...	0915	50.0	2700	8.2	8.5	--	8.9	81	--	--	--
13...	0917	60.0	3470	8.1	9.0	--	7.5	69	--	--	--
13...	0919	70.0	3730	7.7	9.5	--	7.3	68	590	450	150
MAY											
15...	0850	1.00	2730	8.5	23.5	1.20	6.9	86	440	330	120
15...	0852	10.0	2720	8.5	23.0	--	6.9	85	--	--	--
15...	0854	20.0	2730	8.5	23.0	--	6.8	84	--	--	--
15...	0856	30.0	2920	8.1	21.0	--	5.1	61	--	--	--
15...	0858	40.0	3230	8.0	20.5	--	4.7	55	--	--	--
15...	0900	50.0	3280	7.6	18.5	--	2.1	24	--	--	--
15...	0902	60.0	3210	7.5	16.0	--	1.0	11	--	--	--
15...	0904	70.0	3220	7.4	15.0	--	0.4	4	510	390	140
JUL											
23...	0856	1.00	1850	8.5	29.5	1.20	6.1	83	370	280	110
23...	0858	10.0	1860	8.4	29.5	--	6.0	82	--	--	--
23...	0900	20.0	1900	8.0	28.5	--	4.4	59	--	--	--
23...	0902	25.0	2200	7.5	29.0	--	1.0	14	--	--	--
23...	0904	30.0	2510	7.4	28.0	--	0.1	1	--	--	--
23...	0906	40.0	2030	7.4	25.5	--	0	0	--	--	--
23...	0908	50.0	2030	7.4	25.0	--	0	0	--	--	--
23...	0910	60.0	2990	7.3	25.0	--	0	0	--	--	--
23...	0912	67.0	4440	7.3	25.5	--	0.1	1	660	510	180

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325327098314001 - POSSUM KINGDOM LK SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
FEB										
13...	29	330	7	6.8	110	280	540	0.30	6.6	1370
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	53	570	10	7.6	140	490	880	0.40	5.5	2240
MAY										
15...	34	370	8	7.1	110	320	610	0.30	5.1	1530
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	40	460	9	8.1	120	380	700	0.40	6.2	1810
JUL										
23...	24	230	5	7.3	91	310	340	0.30	8.1	1090
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	51	650	11	11	150	540	1000	0.50	13	2540

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
FEB										
13...	--	<0.010	<0.100	<0.010	--	0.40	<0.010	<0.010	30	<10
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	<0.010	<0.100	0.010	0.49	0.50	<0.010	<0.010	<10	<10
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	0.020	<0.100	0.080	0.32	0.40	0.070	0.040	20	40
MAY										
15...	--	0.010	<0.050	0.010	0.49	0.50	0.020	<0.010	10	<10
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	0.055	0.020	0.075	0.080	0.82	0.90	0.020	<0.010	<10	70
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	0.210	0.030	0.240	0.230	0.27	0.50	0.090	0.070	20	400
JUL										
23...	--	<0.010	<0.050	0.050	0.55	0.60	<0.010	<0.010	10	16
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	<0.010	<0.050	0.120	0.68	0.80	0.010	<0.010	120	180
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	<0.010	<0.050	1.50	0.0	1.4	0.280	0.250	280	610

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325347098265701 - POSSUM KINGDOM LK SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1527	1.00	2340	8.5	12.0	10.8	106
13...	1529	10.0	2340	8.5	11.0	10.5	101
13...	1531	20.0	2370	8.4	10.5	9.8	93
13...	1533	30.0	2380	8.4	10.5	9.7	92
13...	1535	40.0	2430	8.4	10.5	9.2	87
13...	1537	50.0	3340	8.3	10.0	7.8	73
MAY							
15...	1640	1.00	2460	8.3	23.5	7.2	90
15...	1642	10.0	2460	8.2	23.0	6.9	85
15...	1644	20.0	2790	7.9	22.0	5.1	62
15...	1646	30.0	3040	7.8	21.0	4.4	52
15...	1648	40.0	3290	7.8	21.0	3.5	42
15...	1650	50.0	3580	7.4	20.5	0.6	7
JUL							
23...	1610	1.00	2050	8.6	30.5	7.2	100
23...	1612	10.0	2060	8.4	29.0	5.8	79
23...	1614	20.0	2110	8.1	29.0	4.4	60
23...	1616	30.0	2210	7.9	29.0	3.2	44
23...	1618	40.0	3820	7.4	29.0	0.1	1
23...	1620	48.0	4490	7.3	29.0	0.2	3

325557098264401 - POSSUM KINGDOM LK SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
13...	1611	1.00	2410	8.6	12.0	10.0	98
13...	1613	10.0	2410	8.6	12.0	10.0	98
13...	1615	20.0	2410	8.5	12.0	9.8	96
13...	1617	30.0	3060	8.4	10.5	7.9	75
13...	1619	38.0	4440	8.4	11.0	7.5	73
MAY							
15...	1745	1.00	1680	8.3	24.5	7.6	97
15...	1747	10.0	1680	8.2	24.5	7.4	94
15...	1749	20.0	2180	7.9	22.5	5.2	64
15...	1751	30.0	2980	7.7	21.0	3.4	41
15...	1753	37.0	3200	7.4	21.0	0.9	11
JUL							
23...	1636	1.00	2090	8.6	30.5	7.2	101
23...	1638	10.0	2160	8.3	29.5	5.0	69
23...	1640	20.0	2270	8.1	29.5	4.0	55
23...	1642	30.0	2690	7.8	29.5	2.5	34
23...	1644	36.0	3110	7.6	29.5	1.2	17

325715098250501 - POSSUM KINGDOM LK SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)
FEB											
13...	1645	1.00	2450	8.4	12.5	0.82	10.1	100	420	310	120
13...	1647	10.0	2460	8.4	12.5	--	10.1	100	--	--	--
13...	1649	20.0	2510	8.3	12.5	--	9.9	98	--	--	--
13...	1651	26.0	2550	8.0	12.5	--	10.6	105	430	310	120
MAY											
15...	1715	1.00	1440	7.9	24.5	0.24	6.2	79	230	140	63
15...	1717	10.0	1440	7.7	23.5	--	5.3	66	--	--	--
15...	1719	20.0	1830	7.5	22.0	--	3.8	46	--	--	--
15...	1721	26.0	2480	7.5	21.5	--	3.2	38	410	310	110
JUL											
23...	1702	1.00	2310	8.6	30.0	0.50	7.0	97	420	330	120
23...	1704	10.0	2440	8.4	29.5	--	5.5	76	--	--	--
23...	1706	20.0	2680	8.1	29.5	--	4.1	57	--	--	--
23...	1708	24.0	4420	7.6	29.5	--	1.9	26	630	530	170

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325715098250501 - POSSUM KINGDOM LK SITE GC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
FEB										
13...	30	350	7	7.1	110	380	600	0.40	6.4	1560
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	31	370	8	7.2	120	350	600	0.30	6.3	1550
MAY										
15...	17	190	5	6.2	85	160	300	0.20	6.4	794
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	34	340	7	6.2	100	310	540	0.30	5.2	1410
JUL										
23...	29	300	6	7.7	88	360	480	0.40	9.2	1350
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	51	610	11	9.1	100	580	1000	0.50	11	2530

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
FEB										
13...	--	<0.010	<0.100	<0.010	--	0.60	0.020	<0.010	20	<10
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	0.020	<0.100	0.020	1.9	1.9	0.260	0.070	20	<10
MAY										
15...	0.250	0.070	0.320	0.100	0.50	0.60	0.090	0.070	29	6
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	0.180	0.040	0.220	0.240	0.46	0.70	0.070	0.040	20	<10
JUL										
23...	--	<0.010	<0.050	0.070	1.0	1.1	0.040	<0.010	70	10
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	0.010	<0.050	0.100	0.70	0.80	0.080	0.010	90	250

325047098291201 - POSSUM KINGDOM LK SITE P03

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB							
13...	1410	1.00	2400	8.2	10.0	9.1	85
13...	1412	10.0	2420	8.2	9.5	9.2	85
13...	1414	20.0	2410	8.2	9.5	9.1	84
13...	1416	30.0	2410	8.3	8.5	9.0	81
13...	1418	40.0	2430	8.2	8.5	8.9	81
13...	1420	50.0	2450	8.3	8.5	8.8	80
13...	1422	60.0	2640	8.3	8.5	8.0	72
MAY							
15...	1340	1.00	2730	8.5	23.0	7.7	95
15...	1342	10.0	2730	8.5	22.5	7.7	94
15...	1344	20.0	2720	8.2	21.5	5.8	70
15...	1346	30.0	2760	8.1	20.5	5.4	64
15...	1348	40.0	2860	8.0	19.5	4.7	54
15...	1350	50.0	2880	7.6	17.0	2.4	26
15...	1352	59.0	2890	7.6	16.5	1.9	21
JUL							
23...	1400	1.00	1870	8.1	30.0	5.6	77
23...	1402	10.0	1870	8.2	27.5	5.6	74
23...	1404	20.0	1860	7.8	28.5	3.8	51
23...	1406	30.0	1840	7.4	27.5	0.1	1
23...	1408	40.0	1880	7.4	25.5	0.1	1
23...	1410	50.0	2040	7.4	25.0	0.1	1
23...	1412	57.0	2110	7.4	24.0	0.1	1

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325125098323701 - POSSUM KINGDOM LK SITE P05

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB							
13...	1043	1.00	2370	8.2	8.5	9.5	86
13...	1045	10.0	2380	8.2	8.5	9.5	86
13...	1047	20.0	2380	8.2	8.5	9.4	85
13...	1049	26.0	2370	8.2	8.5	9.3	84
MAY							
15...	1455	1.00	2730	8.3	23.0	7.8	96
15...	1457	10.0	2730	8.3	23.0	7.8	96
15...	1459	20.0	2730	8.3	22.5	7.3	89
15...	1501	26.0	2730	8.2	22.5	6.9	84
JUL							
23...	1458	1.00	1860	8.3	30.0	6.5	90
23...	1500	10.0	1860	8.2	29.0	5.8	79
23...	1502	20.0	1860	7.9	29.0	4.3	58
23...	1504	24.0	1850	7.8	29.0	4.0	54

325301098342901 - POSSUM KINGDOM LK SITE P07

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB							
13...	0952	1.00	2290	8.2	10.0	9.9	93
13...	0954	10.0	2290	8.2	9.5	9.9	92
13...	0956	20.0	2300	8.1	9.0	9.9	91
13...	0958	30.0	2420	8.1	8.0	8.6	77
13...	1000	40.0	2450	8.1	8.0	8.3	74
13...	1002	50.0	2690	8.1	8.0	4.8	43
13...	1004	62.0	3150	8.1	8.0	1.6	14
MAY							
15...	1545	1.00	2250	8.5	25.5	8.3	107
15...	1547	10.0	2410	8.4	24.5	7.4	94
15...	1549	20.0	2630	8.4	23.5	7.1	88
15...	1551	25.0	2620	8.3	23.5	6.8	85
15...	1553	30.0	2440	8.0	22.0	5.6	68
15...	1555	35.0	2400	7.8	21.5	4.7	56
15...	1557	40.0	2790	7.8	20.5	4.0	47
15...	1559	50.0	2870	7.4	18.5	0.8	9
15...	1601	62.0	2960	7.4	16.5	0.1	1
JUL							
23...	1526	1.00	1770	8.5	31.0	6.3	89
23...	1528	10.0	1780	8.5	29.5	5.9	81
23...	1530	20.0	1780	8.4	29.5	5.1	70
23...	1532	25.0	1770	8.1	28.0	3.6	48
23...	1534	30.0	1830	7.4	27.0	0.1	1
23...	1536	40.0	1900	7.4	25.0	0.1	1
23...	1538	50.0	1920	7.3	24.5	0.1	1
23...	1540	57.0	1980	7.3	23.5	0.1	1

08088600 BRAZOS RIVER AT MORRIS SHEPPARD DAM NEAR GRAFORD, TX.

LOCATION.--Lat 32°51'45", long 98°26'00", Palo Pinto County, Hydrologic Unit 1206021, immediately below Morris Sheppard Dam (formerly Possum Kingdom Dam), 2.6 mi upstream from Loving Creek, 11.3 mi southwest of Graford, and 20 mi upstream from gaging station near Palo Pinto.

DRAINAGE AREA.--23,596 mi², approximately, of which 9,566 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder. Datum of gage is 800.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow totally regulated by Possum Kingdom Lake (station 08088500) since March 1941.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,000 ft³/s Apr. 26, 1990 (gage height, 89.79 ft); minimum daily, 23 ft³/s Dec. 18, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,400 ft³/s June 3 at 2130 hours (gage height, 80.94 ft); minimum daily, 28 ft³/s Feb. 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1090	63	37	41	190	46	417	288	582	701	419	638
2	1350	1590	39	41	152	625	420	287	593	681	412	61
3	1190	1500	646	1580	30	1720	418	292	9240	663	696	644
4	1250	854	188	1770	30	1340	404	303	19500	655	1060	659
5	177	281	37	41	265	726	412	939	18500	635	1090	811
6	945	1840	152	39	29	41	53	1780	18100	625	706	825
7	747	57	166	37	152	634	1010	554	17900	721	699	56
8	125	56	36	708	30	457	1340	2300	17800	636	683	787
9	1930	55	35	41	30	40	525	8480	18000	610	696	53
10	741	306	35	651	31	40	54	11800	18000	670	82	53
11	109	41	954	238	156	793	54	3160	14300	665	82	566
12	110	42	34	757	381	531	55	469	9330	776	85	574
13	394	45	36	40	146	1320	56	1070	3980	669	82	598
14	863	52	37	42	47	1070	56	80	7320	664	80	584
15	663	52	37	33	1640	1360	57	337	13300	673	2630	688
16	91	168	38	142	2310	46	57	327	13200	682	3190	1240
17	734	52	38	30	48	44	56	326	6780	653	2050	2900
18	85	51	37	258	706	546	281	63	483	669	1880	4000
19	237	51	39	33	372	604	53	66	486	687	2000	2430
20	77	50	39	972	286	882	416	903	503	917	1630	1740
21	76	49	993	924	304	1030	414	170	501	943	1970	1480
22	519	50	1420	670	289	184	416	169	1790	928	1940	4270
23	835	48	1240	704	31	46	400	112	1890	912	1960	4300
24	484	48	358	272	28	278	397	69	912	928	1810	4330
25	548	47	40	457	28	1340	477	494	753	77	1830	3560
26	581	245	291	34	31	48	397	513	755	882	1090	4330
27	68	507	426	34	42	286	265	502	726	1270	1100	1460
28	65	284	39	34	52	279	273	505	820	1160	1100	527
29	63	329	39	595	---	503	531	502	705	469	1090	530
30	62	252	1490	893	---	279	421	506	708	471	65	523
31	61	---	649	576	---	287	---	506	---	74	710	---
TOTAL	16270	9065	9645	12687	7836	17425	10185	37872	217457	21766	34917	45217
MEAN	525	302	311	409	280	562	339	1222	7249	702	1126	1507
MAX	1930	1840	1490	1770	2310	1720	1340	11800	19500	1270	3190	4330
MIN	61	41	34	30	28	40	53	63	483	74	65	53
AC-FT	32270	17980	19130	25160	15540	34560	20200	75120	431300	43170	69260	89690

CAL YR 1990 TOTAL 782031 MEAN 2143 MAX 43800 MIN 21 AC-FT 1551000
WTR YR 1991 TOTAL 440342 MEAN 1206 MAX 19500 MIN 28 AC-FT 873400

08088600 BRAZOS RIVER AT MORRIS SHEPPARD DAM NEAR GRAFORD, TX.--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1941 to January 1991 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1942 to January 1991.
WATER TEMPERATURE: October 1949 to September 1955, October 1965 to January 1991.

REMARKS.--Discharges are computed on the basis of releases from Possum Kingdom Lake. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,110 microsiemens Feb. 20, 1961; minimum daily, 494 microsiemens May 4, 1957.
WATER TEMPERATURE : Maximum daily, 32.0°C July 6, 1990; minimum daily, 6.5°C Jan. 20, 1978.

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2500	e2590	2520	e2490	---	---	---	---	---	---	---	---
2	2330	2510	2400	2480	---	---	---	---	---	---	---	---
3	3010	2460	2340	2450	---	---	---	---	---	---	---	---
4	3450	2240	2370	2460	---	---	---	---	---	---	---	---
5	3460	2310	2380	2500	---	---	---	---	---	---	---	---
6	e2200	2360	2550	2460	---	---	---	---	---	---	---	---
7	e2400	2380	2450	2440	---	---	---	---	---	---	---	---
8	e3200	2390	2380	2460	---	---	---	---	---	---	---	---
9	e2200	2380	2400	2460	---	---	---	---	---	---	---	---
10	2780	2400	e2400	2500	---	---	---	---	---	---	---	---
11	e3300	e2400	2430	2520	---	---	---	---	---	---	---	---
12	3400	2390	2380	e2550	---	---	---	---	---	---	---	---
13	e2200	2390	2400	e2570	---	---	---	---	---	---	---	---
14	2570	2380	2410	2590	---	---	---	---	---	---	---	---
15	2750	2370	e2410	2730	---	---	---	---	---	---	---	---
16	3260	2350	2400	e2800	---	---	---	---	---	---	---	---
17	e2200	e2200	2400	2950	---	---	---	---	---	---	---	---
18	e3200	e2210	2400	2970	---	---	---	---	---	---	---	---
19	e2400	2210	2410	e2980	---	---	---	---	---	---	---	---
20	2640	2120	2420	e2990	---	---	---	---	---	---	---	---
21	2640	e2220	e2200	e3000	---	---	---	---	---	---	---	---
22	2680	2220	2420	3020	---	---	---	---	---	---	---	---
23	2650	e2230	2430	3060	---	---	---	---	---	---	---	---
24	2650	e2230	2450	3180	---	---	---	---	---	---	---	---
25	2630	e2260	2470	3040	---	---	---	---	---	---	---	---
26	2610	2300	2470	e3100	---	---	---	---	---	---	---	---
27	2630	e2200	2470	e3200	---	---	---	---	---	---	---	---
28	2600	e2300	e2450	3340	---	---	---	---	---	---	---	---
29	2580	2300	2450	e3400	---	---	---	---	---	---	---	---
30	2590	e2350	2490	3490	---	---	---	---	---	---	---	---
31	2590	---	2510	3410	---	---	---	---	---	---	---	---
MEAN	2720	2320	2420	2830	---	---	---	---	---	---	---	---

e Estimated

08088600 BRAZOS RIVER AT MORRIS SHEPPARD DAM NEAR GRAFORD, TX.--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e27.0	e22.0	17.0	e12.0	---	---	---	---	---	---	---	---
2	27.0	22.0	17.0	11.0	---	---	---	---	---	---	---	---
3	27.0	22.0	18.0	10.0	---	---	---	---	---	---	---	---
4	25.0	22.5	18.0	10.0	---	---	---	---	---	---	---	---
5	25.0	21.5	18.0	8.0	---	---	---	---	---	---	---	---
6	e25.0	20.5	15.0	10.0	---	---	---	---	---	---	---	---
7	e25.0	21.0	15.0	11.0	---	---	---	---	---	---	---	---
8	e25.0	21.0	18.0	10.0	---	---	---	---	---	---	---	---
9	e25.0	18.0	18.0	10.0	---	---	---	---	---	---	---	---
10	25.0	19.0	e18.0	9.0	---	---	---	---	---	---	---	---
11	e25.0	e19.0	18.0	9.0	---	---	---	---	---	---	---	---
12	25.0	19.0	18.0	e9.0	---	---	---	---	---	---	---	---
13	e25.0	21.0	18.0	e9.0	---	---	---	---	---	---	---	---
14	24.0	21.0	16.0	9.0	---	---	---	---	---	---	---	---
15	24.0	19.5	e17.0	9.0	---	---	---	---	---	---	---	---
16	24.0	18.0	18.0	e8.5	---	---	---	---	---	---	---	---
17	e24.0	e19.0	18.0	8.0	---	---	---	---	---	---	---	---
18	e25.0	e20.0	18.0	8.0	---	---	---	---	---	---	---	---
19	e25.0	21.0	17.0	e8.0	---	---	---	---	---	---	---	---
20	25.0	21.0	18.0	e9.0	---	---	---	---	---	---	---	---
21	25.0	e20.0	e18.0	e10.0	---	---	---	---	---	---	---	---
22	22.0	17.0	18.0	11.0	---	---	---	---	---	---	---	---
23	25.0	e18.0	12.5	8.0	---	---	---	---	---	---	---	---
24	25.0	e19.0	14.0	15.0	---	---	---	---	---	---	---	---
25	24.0	e19.0	12.0	7.0	---	---	---	---	---	---	---	---
26	22.0	20.0	12.0	e7.0	---	---	---	---	---	---	---	---
27	24.0	e20.0	14.0	e7.0	---	---	---	---	---	---	---	---
28	22.0	e20.0	e12.0	7.0	---	---	---	---	---	---	---	---
29	24.0	19.0	12.0	e8.0	---	---	---	---	---	---	---	---
30	23.0	e19.0	11.5	9.0	---	---	---	---	---	---	---	---
31	22.0	---	13.0	7.0	---	---	---	---	---	---	---	---
MEAN	24.5	20.0	16.0	9.1	---	---	---	---	---	---	---	---

e Estimated

08089000 BRAZOS RIVER NEAR PALO PINTO, TX

LOCATION.--Lat 32°51'45", long 98°18'08", Palo Pinto County, Hydrologic Unit 12060201, on right bank 100 ft upstream from bridge on Farm Road 4, 300 ft downstream from Dark Valley Creek, 6.5 mi north of Palo Pinto, and at mile 667.3.

DRAINAGE AREA.--23,811 mi², of which 9,566 mi² probably is noncontributing.

PERIOD OF RECORD.--January 1924 to current year. Monthly discharge only for some periods, published in WSP 1312. Published as "near Mineral Wells" 1924-33.

REVISED RECORDS.--WSP 1512: 1924-25, 1929, 1932-34. WSP 1712: 1935-36, 1937-38(M), 1939, 1940(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 834.23 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 15, 1933, nonrecording gage at site 19 mi downstream at datum 38.19 ft lower. Nov. 15, 1933 to Apr. 10, 1989 at datum 3.00 ft higher.

REMARKS.--Records fair. Since 1941, flow largely regulated by Possum Kingdom Lake (station 08088500) 20 mi upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--16 years (water years 1925-40) prior to completion of Possum Kingdom Lake, 1,262 ft³/s (914,300 acre-ft/yr); 51 years (water years 1941-91) regulated, 943 ft³/s (683,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,600 ft³/s June 16, 1930, at site 19 mi downstream from Mineral Wells (gage height, 30 ft, present site and datum); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage occurred in 1876, from data by U.S. Army Corps of Engineers, and was several feet higher than the flood of June 16, 1930, which reached a stage of about 30 ft and was the highest since at least 1876.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,500 ft³/s June 8 at 2300 hours (gage height, 17.34 ft); minimum daily, 27 ft³/s Feb. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1080	66	186	304	307	41	296	424	414	1270	119	634
2	1160	183	99	92	212	50	419	302	551	1230	354	591
3	1300	1880	152	735	152	1360	439	307	2890	1170	400	143
4	904	1080	544	1670	76	1660	440	317	17500	1110	834	623
5	1040	974	209	1410	54	1460	412	340	16900	1080	886	677
6	146	803	92	166	229	493	434	1650	16400	1000	605	752
7	798	1260	160	98	103	98	142	1320	16100	954	575	741
8	614	202	152	416	155	902	1110	1370	17200	1000	563	113
9	690	189	73	382	75	248	1510	5960	17700	896	566	666
10	1650	183	53	172	49	76	542	12000	16300	842	471	144
11	301	257	630	795	44	539	133	5510	15700	905	117	102
12	104	109	323	776	194	332	84	1530	11600	884	947	610
13	138	83	84	285	452	1390	72	532	5670	961	248	657
14	247	75	58	94	213	1650	62	1150	6490	847	128	576
15	750	76	48	74	487	836	56	164	14100	825	1360	593
16	621	89	47	73	2640	1220	50	274	13400	805	3180	707
17	133	176	46	157	1560	122	52	298	9890	786	1990	1710
18	634	99	45	155	271	360	60	300	2430	742	1980	4050
19	161	81	45	249	993	662	191	136	1430	731	1970	3880
20	190	78	42	322	553	661	129	82	1320	712	1570	1320
21	93	79	40	1720	466	817	328	668	1280	889	1900	1400
22	290	87	1330	947	341	951	407	198	1330	869	1920	3900
23	532	91	1790	862	320	241	427	179	2960	855	1920	4020
24	806	84	716	441	103	96	418	141	2470	845	1900	4040
25	543	79	249	543	56	569	412	132	1760	821	1740	4040
26	578	81	99	287	41	1450	502	438	1490	860	1720	4030
27	262	276	326	97	33	131	589	438	1440	1000	1020	3170
28	103	580	301	74	27	245	270	427	1290	1210	1160	296
29	79	317	94	69	---	411	279	414	1470	1040	1020	621
30	70	253	247	1280	---	421	512	405	1300	505	998	645
31	66	---	1730	758	---	293	---	369	---	485	149	---
TOTAL	16083	9870	10010	15503	10206	19785	10777	37775	220775	28129	34310	45451
MEAN	519	329	323	500	364	638	359	1219	7359	907	1107	1515
MAX	1650	1880	1790	1720	2640	1660	1510	12000	17700	1270	3180	4050
MIN	66	66	40	69	27	41	50	82	414	485	117	102
AC-FT	31900	19580	19850	30750	20240	39240	21380	74930	437900	55790	68050	90150

CAL YR 1990 TOTAL 807068 MEAN 2211 MAX 39700 MIN 23 AC-FT 1601000
WTR YR 1991 TOTAL 458674 MEAN 1257 MAX 17700 MIN 27 AC-FT 909800

08090800 BRAZOS RIVER NEAR DENNIS, TX

LOCATION.--Lat 32°36'56", long 97°55'32", Parker County, Hydrologic Unit 12060201, on right bank at downstream side of highway embankment of bridge on Farm Road 1189, 0.2 mi south of Dennis, 1.0 mi upstream from Patrick Creek, and at mile 589.98.

DRAINAGE AREA.--25,237 mi², of which 9,566 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1968 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is 697.67 ft above National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bench mark).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow is largely regulated by releases from Possum Kingdom Lake (station 08088500) 96 mi upstream on the Brazos River, and by Lake Palo Pinto on Palo Pinto Creek. Flow may be affected at times by discharge from the flood-detention pools of twelve floodwater-retarding structures with a combined detention capacity of 13,840 acre-ft. These structures control runoff from an 53.0 mi² area in the East Keechi and Pollard Creeks drainage basins. There are many diversions above the station for irrigation municipal supply, and for oil field operations. Gage-height telemeter (DCP) at station.

AVERAGE DISCHARGE.--23 years (water years 1969-91), 1,063 ft³/s (770,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 96,600 ft³/s Oct. 14, 1981 (gage height, 31.85 ft, from floodmarks); minimum, 0.87 ft³/s Aug. 2, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1930, 31.8 ft in May 1957, from floodmark, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,600 ft³/s June 8 at 2400 hours (gage height, 19.28 ft); minimum daily, 69.0 ft³/s Apr. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1420	150	347	384	640	151	316	161	314	1110	730	714
2	1310	135	322	816	528	135	220	256	339	1060	663	393
3	1110	129	271	390	359	127	209	248	794	1040	437	544
4	1340	414	202	231	264	124	259	218	4090	1080	434	576
5	1170	1470	163	513	221	783	282	2150	16300	996	547	461
6	1070	774	373	1340	199	1050	282	684	16300	942	790	572
7	618	748	315	616	161	795	274	493	12800	919	912	657
8	428	1280	201	303	144	455	273	1860	16100	882	775	696
9	750	829	160	218	193	259	235	1530	18400	882	691	636
10	541	533	187	283	165	460	849	4050	14800	858	671	343
11	1170	460	181	453	162	352	474	9810	12500	819	705	484
12	1010	307	146	547	143	213	392	3260	9160	799	1980	307
13	437	293	206	643	129	197	234	1800	4280	825	3060	226
14	270	232	350	629	117	333	150	713	4330	852	2140	320
15	208	189	207	390	192	813	116	888	11200	848	991	490
16	289	164	161	247	245	989	96	572	15300	817	709	534
17	589	149	141	195	644	861	85	304	13400	805	1340	576
18	520	142	128	176	1620	552	82	245	7710	798	2110	1300
19	277	135	121	179	608	274	81	278	3100	779	1600	2520
20	446	144	114	226	420	191	73	270	1780	754	1570	2890
21	273	152	106	487	558	415	69	235	1500	748	1530	1730
22	221	195	104	575	500	460	74	e169	1380	825	1320	1500
23	207	192	85	982	445	690	106	e268	1280	866	1500	1660
24	169	152	800	676	374	489	207	e234	1690	867	1490	2660
25	377	140	1240	636	304	279	239	441	2020	1400	1490	2670
26	662	135	710	400	268	197	234	302	1510	1520	1440	2670
27	490	135	395	402	201	520	231	171	1300	2400	1420	2670
28	512	131	227	346	171	507	257	216	1190	2760	985	2600
29	355	125	209	225	---	242	237	284	1130	1780	967	1300
30	222	426	346	181	---	165	177	290	1130	1320	1100	598
31	173	---	220	160	---	221	---	301	---	904	963	---
TOTAL	18634	10460	8738	13849	9975	13299	6813	32701	197127	33255	37060	35297
MEAN	601	349	282	447	356	429	227	1055	6571	1073	1195	1177
MAX	1420	1470	1240	1340	1620	1050	849	9810	18400	2760	3060	2890
MIN	169	125	85	160	117	124	69	161	314	748	434	226
AC-FT	36960	20750	17330	27470	19790	26380	13510	64860	391000	65960	73510	70010

CAL YR 1990 TOTAL 1087393 MEAN 2979 MAX 79500 MIN 85 AC-FT 2157000
WTR YR 1991 TOTAL 417208 MEAN 1143 MAX 18400 MIN 69 AC-FT 827500

e Estimated

08090800 BRAZOS RIVER NEAR DENNIS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1970 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1970 to current year.
WATER TEMPERTURE: October 1970 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,410 microsiemens Apr. 18, 1984; minimum daily, 200 microsiemens Oct. 13, 1981.
WATER TEMPERATURE: Maximum daily, 38.5°C July 26, 1976; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,300 microsiemens Mar. 7, Apr. 10; minimum daily, 680 microsiemens May 6.
WATER TEMPERATURE: Maximum daily, 33.0°C July 2, 7, 8, Aug. 5; minimum daily, 0.5°C Dec. 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
DEC									
03...	1315	270	1870	8.1	12.0	350	220	100	25
JAN									
17...	1308	194	1960	7.5	14.0	340	210	98	23
FEB									
22...	1135	531	3060	8.1	12.0	470	340	130	36
APR									
22...	1430	65	2780	7.8	18.0	450	300	120	37
JUN									
06...	1115	16400	2750	7.8	24.0	300	190	85	21
AUG									
06...	1235	682	2060	8.1	31.0	400	280	110	31

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
DEC									
03...	250	6	5.4	140	250	390	0.30	5.6	1110
JAN									
17...	240	6	5.6	130	220	400	0.30	4.7	1070
FEB									
22...	450	9	6.5	130	370	710	0.40	4.2	1790
APR									
22...	380	8	7.4	160	310	610	0.40	4.9	1560
JUN									
06...	380	10	6.7	110	330	610	0.40	6.1	1510
AUG									
06...	320	7	6.6	120	310	560	0.50	7.2	1420

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1990 TO SEPTEMBER 1991

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.	1990	18634	2300	1360	68500	500	25300	310	15500	430
NOV.	1990	10460	2170	1290	36300	470	13400	290	8250	410
DEC.	1990	8738	1810	1080	25400	390	9230	250	5820	350
JAN.	1991	13849	2110	1250	46800	460	17200	280	10600	400
FEB.	1991	9975	2700	1600	43000	600	16200	360	9660	490
MAR.	1991	13299	3070	1810	65100	700	25000	400	14500	540
APR.	1991	6813	3140	1850	34100	710	13100	410	7580	550
MAY	1991	32701	2120	1260	111000	460	41000	280	25100	390
JUNE	1991	197127	2440	1450	771000	540	287700	330	174000	450
JULY	1991	33255	2440	1450	130000	540	48500	330	29300	450
AUG.	1991	37060	1950	1160	116000	430	42600	260	26400	370
SEPT	1991	35297	2260	1340	127000	490	47100	300	28900	420
TOTAL		417208	**	**	1574000	**	586000	**	356000	**
WTD.AVG.		1143	2360	1400	**	520	**	320	**	440

08090800 BRAZOS RIVER NEAR DENNIS, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2300	2620	1610	2330	2150	2820	3120	3050	2920	2710	e1940	2220
2	2300	2600	1500	2370	2160	2800	3170	3010	2630	2720	2130	2230
3	2290	2540	1720	2410	2450	2790	3180	3040	e2490	2730	2190	2270
4	2300	2460	1610	2410	2460	2800	3200	1900	2520	2720	2230	2260
5	2300	2470	1000	2220	2540	2960	3220	720	2700	2640	2380	2240
6	2300	2480	1020	2100	2580	3200	3220	680	2730	2610	2350	2150
7	2300	2420	2200	2300	2590	3300	3210	1160	2770	2610	2450	2110
8	2290	2270	1970	2400	2550	3100	3190	1850	2760	2610	2570	2080
9	2290	2130	2200	2300	2580	3000	3150	1710	2480	2630	2550	2180
10	2300	2160	1810	2220	2590	3100	3300	1900	1710	e2620	2570	2160
11	2300	2190	1720	2090	2560	3040	e3250	2250	2580	2620	2160	2180
12	2310	2070	2200	2210	2530	3030	3120	2400	2560	2660	1520	2240
13	2300	2160	1980	2250	2520	3000	2910	2580	2560	2700	850	2230
14	2300	2090	2210	e2140	2530	3050	3040	2650	2500	2710	920	2240
15	2290	1780	1920	1890	2600	3100	3060	2770	2610	2720	740	2300
16	e2300	1650	e2260	1940	2750	e3200	3060	e2740	2000	2730	860	2280
17	2290	1690	1240	1910	2900	3150	3030	2710	2000	2730	1060	2210
18	2290	1730	1670	1860	2700	3040	3010	2730	e2140	2730	2040	2140
19	2300	1780	2210	1920	2800	3020	3010	2780	2180	2730	2330	2130
20	2290	1790	1520	1960	2900	3060	2990	2750	2210	2720	2360	2180
21	2300	1850	1710	1900	3060	3040	2930	2710	2330	2700	2370	2130
22	2290	e1690	2220	1820	2980	3050	e2800	2650	2360	2720	2360	2160
23	2270	1530	1650	1480	2970	3100	2750	2720	2490	2730	2380	2200
24	2270	1650	2230	1740	2960	3070	2860	2300	2600	2680	2360	2310
25	2270	1580	2100	2230	2970	3030	3100	1800	2710	2340	2360	2330
26	2280	1550	1620	2330	2920	2950	3110	1450	2760	2220	2360	2360
27	2290	1640	1400	2320	2910	3000	3170	2070	2790	2230	2360	2360
28	2280	1750	1740	2390	2860	2980	3210	2580	2780	2000	2330	2380
29	2290	1810	1520	2390	---	2960	3170	2800	2780	1850	2340	2450
30	2280	1790	1230	2300	---	2970	3120	2820	2780	e1400	2150	2410
31	2340	---	2240	2100	---	2940	---	2880	---	1860	2210	---
MEAN	2290	2000	1780	2140	2680	3020	3090	2330	2510	2530	2060	2240

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.5	21.0	13.0	3.5	9.5	19.0	18.5	25.0	29.0	32.0	---	29.0
2	23.5	23.0	11.0	5.0	9.0	17.0	17.5	24.0	27.0	33.0	27.5	28.0
3	25.0	21.5	10.5	3.0	10.0	15.0	21.0	24.5	---	31.0	28.5	30.0
4	27.0	14.0	11.0	3.0	12.0	19.0	21.5	24.0	26.0	31.0	32.0	29.0
5	28.0	15.5	11.0	5.0	13.0	19.0	22.0	20.0	24.0	32.5	33.0	28.5
6	27.5	16.5	10.0	6.0	14.0	17.0	23.0	22.0	22.5	28.5	32.0	28.5
7	28.0	14.5	9.5	5.0	15.0	15.0	23.5	21.0	22.0	33.0	29.0	27.0
8	25.5	13.0	10.0	7.0	15.0	15.0	25.5	22.0	23.0	33.0	29.5	29.0
9	19.0	14.0	18.0	5.0	14.0	15.0	22.0	25.0	23.0	28.0	30.0	31.0
10	19.0	15.0	12.0	7.0	15.0	16.0	22.0	21.0	22.0	---	28.5	28.0
11	18.0	15.0	14.0	7.0	16.0	19.0	---	20.0	25.0	27.0	28.0	30.5
12	20.0	16.0	15.5	7.0	18.0	19.0	25.0	23.0	25.5	27.5	24.0	28.0
13	23.0	16.5	12.0	9.0	18.5	16.0	24.0	25.5	26.5	28.0	24.5	30.0
14	24.0	17.0	12.5	---	17.0	16.0	23.0	24.0	28.0	32.5	24.5	28.0
15	24.0	19.0	12.0	10.5	14.0	14.0	25.5	26.0	25.0	29.0	25.0	28.0
16	---	18.0	---	11.0	10.0	---	26.0	---	25.0	29.0	28.0	28.0
17	22.0	17.0	13.0	11.0	14.0	15.0	23.0	25.0	23.5	29.0	26.5	28.0
18	21.0	18.0	12.0	10.0	15.0	15.0	26.0	24.5	---	28.0	30.0	24.0
19	20.0	20.0	14.0	10.0	14.0	16.5	26.0	25.0	26.0	28.0	30.0	21.0
20	19.0	21.0	10.5	9.0	14.0	18.0	23.0	27.0	31.5	28.0	30.5	20.0
21	17.0	20.0	6.0	8.0	11.0	21.0	20.0	29.0	31.0	32.0	29.0	20.5
22	18.0	---	2.0	8.0	15.0	18.0	---	29.0	30.0	28.0	29.5	24.0
23	17.5	18.5	.5	8.0	18.0	20.0	23.5	30.0	32.0	27.5	30.0	24.0
24	20.0	19.0	1.0	9.0	15.0	20.0	21.0	27.0	31.5	28.0	28.0	24.0
25	17.5	20.0	3.0	9.5	13.0	18.0	24.0	26.0	32.0	27.5	30.0	24.0
26	19.0	19.0	4.0	8.0	13.5	22.0	27.0	30.0	28.0	28.0	30.0	23.0
27	20.0	20.5	3.0	11.0	14.0	20.5	27.0	31.0	27.5	24.0	30.0	23.0
28	22.0	17.5	5.5	11.5	16.0	20.5	24.0	31.0	28.0	28.0	30.0	23.0
29	17.0	14.0	9.0	11.5	---	18.0	24.0	31.5	28.0	30.0	29.5	24.0
30	21.0	12.0	3.0	7.5	---	17.0	24.5	29.5	31.0	---	29.0	25.0
31	20.5	---	4.0	10.0	---	15.0	---	29.0	---	30.5	27.0	---
MEAN	21.6	17.4	9.1	7.9	14.0	17.5	23.3	25.7	26.9	29.4	28.8	26.3

08090900 LAKE GRANBURY NEAR GRANBURY, TX

LOCATION.--Lat 32°22'27", long 97°41'20", Hood County, Hydrologic Unit 12060201, at right end of spillway of DeCordova Bend Dam on Brazos River, 2.6 mi upstream from Fall Creek, 7.5 mi southeast of Granbury, and at mile 542.5.

DRAINAGE AREA.--25,679 mi², of which 9,566 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1968 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.11 ft below National Geodetic Vertical Datum of 1929 (levels by Brazos River Authority).

REMARKS.--The lake is formed by an Ambursen-type concrete and earthfill dam 2,256 ft long, including a 932-foot concrete spillway. The dam was completed on Aug. 30, 1969, and deliberate impoundment began Sept. 15, 1969. The spillway consists of sixteen 36- by 35-foot tainter gates and two 7- by 8-foot sluice gates. The outflow from the sluice gates discharges into a bay where it is then controlled by two 4- by 4.5-foot sluice gates with inverts at 625.8 ft. Flow is affected at times by discharge from the flood-detention pools of 12 floodwater-retarding structures with a combined detention capacity of 13,940 acre-ft. These structures control runoff from 53.9 mi² in the East Keechi, Kickapoo, and Ruckers Creeks drainage basins. The lake was built by the Brazos River Authority for the conservation of water for irrigation, municipal, and industrial uses. Water is diverted from the lake for municipal, domestic, irrigation, and industrial uses by several lakeside developers, or residents. Water is also diverted into Squaw Creek Reservoir. The city of Granbury returns sewage effluent into Lake Granbury. Stage telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	706.5	-
Top of tainter gates (design flood)	693.0	153,500
Crest of spillway	658.0	15,440
Lowest gated outlet (invert)	640.0	2,200

COOPERATION.--The capacity curve, based on data prepared by the Ambursen Engineering Corporation, was provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 158,800 acre-ft Mar. 27, 1977 (elevation, 693.60 ft); minimum since first filling in October 1969, 97,600 acre-ft Aug. 9, 1978 (elevation, 685.28 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 153,100 acre-ft July 26 at 1200 hours (elevation, 692.96 ft); minimum, 141,000 acre-ft June 4 (elevation, 691.51 ft).

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

691.5	140,900	692.5	149,200
692.0	145,000	693.0	153,500

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146300	149000	149400	149900	147200	149500	147800	149000	148800	148300	149400	149600
2	147200	149000	150200	151000	147400	149300	147200	149700	150400	148200	149900	149200
3	148200	150200	149700	149400	147500	148000	148000	149400	145500	148700	149300	148700
4	148700	148700	149100	148500	147700	147400	148500	148700	141300	148700	148400	148700
5	148800	148500	148300	148300	147700	147000	149000	149600	143000	148800	148300	148500
6	148800	148200	149200	150400	148200	148200	148900	148000	143700	148600	148600	148700
7	148900	148300	149200	150100	148700	149000	148500	146900	144700	148300	149300	149400
8	148600	150000	149500	149400	148800	149300	148500	149100	144700	148300	150000	148500
9	149000	148200	149700	149400	149400	149300	148100	147600	146000	148300	149700	149000
10	148300	148000	149700	148200	149900	148600	148200	147200	146700	148500	149000	149200
11	148000	148900	149400	148900	149600	148400	149600	148800	147300	148800	149200	149400
12	148600	149200	149700	148800	148600	148500	150600	148000	146900	149000	148200	149500
13	147700	149400	149100	148900	149100	148000	149400	148300	148100	148900	148300	148800
14	147700	149400	149000	149600	149300	148000	148300	148000	145600	148800	148300	148300
15	147800	149400	149700	149700	148900	148700	147800	146900	143300	148800	149600	148200
16	147900	149400	149900	149400	148500	149200	147800	147400	146600	148900	149400	148800
17	149300	149000	150000	149100	148500	149400	148900	147700	147500	148900	148900	147700
18	149400	148900	149100	148500	150200	149400	148100	148300	147800	148900	150300	149200
19	148900	149000	148300	148000	148400	148400	147700	149000	148900	148900	149500	149200
20	149200	148900	148800	147800	147300	148300	147600	149900	148800	148700	149100	149000
21	148500	149400	149200	147800	148700	148700	147500	150000	149600	148200	150000	148400
22	147900	149300	149000	148300	149400	149700	147700	149400	149700	148700	149300	149000
23	148000	149400	148600	149700	149400	149100	147700	149500	148800	149000	149600	148700
24	148200	149500	148800	149900	149400	148600	148300	150000	148500	150000	149900	149000
25	148200	149600	150500	150000	149000	148200	148800	150400	150000	151300	150200	148500
26	148700	149900	148900	149700	148600	148200	148700	150400	150600	150000	149700	148600
27	148900	149400	147300	149400	148500	149200	148500	150000	149900	148300	149000	148600
28	149200	149000	148000	148900	148700	149500	148300	149400	148700	148000	149000	148600
29	149200	148800	149200	149100	---	149700	148300	148800	148600	148000	149200	147700
30	149000	148700	149500	148100	---	148900	148700	148700	148300	148000	149900	147700
31	149000	---	149700	147200	---	148300	---	149000	---	148800	150100	---
MAX	149400	150200	150500	151000	150200	149700	150600	150400	150600	151300	150300	149600
MIN	146300	148000	147300	147200	147200	147000	147200	146900	141300	148000	148200	147700
(†)	692.48	692.44	692.56	692.27	692.44	692.39	692.44	692.48	692.39	692.45	692.61	692.32
(ϕ)	+1800	-300	+1000	-2500	+1500	-400	+400	+300	-700	+500	+1300	-2400

CAL YR 1990 MAX 151000 MIN 122900 (ϕ) +1100
WTR YR 1991 MAX 151300 MIN 141300 (ϕ) +500

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: September 1970 to current year.

322227097412101 - LAKE GRANBURY SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	RESER-VOIR STORAGE (AC-FT)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
MAR											
19...	1113	148000	1.00	2150	8.3	15.0	1.00	9.2	93	390	250
19...	1116	--	10.0	2150	8.2	14.5	--	8.6	86	--	--
19...	1120	--	20.0	2150	8.2	14.5	--	8.4	84	--	--
19...	1123	--	30.0	2140	8.2	14.5	--	8.4	84	--	--
19...	1127	--	40.0	2150	8.1	14.5	--	8.1	81	--	--
19...	1130	--	50.0	2140	8.0	14.5	--	7.4	74	--	--
19...	1134	--	63.0	2140	7.8	14.5	--	6.0	60	390	250
MAY											
28...	1324	149000	1.00	2440	8.3	28.0	1.20	8.0	105	410	280
28...	1328	--	10.0	2450	8.3	27.5	--	7.9	103	--	--
28...	1332	--	20.0	2470	7.8	25.0	--	4.0	50	--	--
28...	1336	--	30.0	2510	7.5	23.5	--	1.3	16	--	--
28...	1340	--	40.0	2650	7.4	22.5	--	0.6	--	--	--
28...	1345	--	50.0	2660	7.4	21.5	--	0	0	--	--
28...	1350	--	65.0	2590	7.4	20.0	--	0	0	440	290
AUG											
21...	1126	148000	1.00	2290	8.4	30.0	1.20	8.4	114	380	280
21...	1131	--	10.0	2320	8.3	29.5	--	7.4	99	--	--
21...	1141	--	20.0	2310	7.4	28.5	--	2.3	30	--	--
21...	1146	--	30.0	2340	7.3	28.0	--	0	0	--	--
21...	1151	--	40.0	2280	7.3	27.5	--	0	0	--	--
21...	1155	--	50.0	2460	7.2	26.5	--	0	0	--	--
21...	1159	--	65.0	2450	7.0	24.5	--	0	0	440	250

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAR											
19...	110	28	290	6	6.5	140	270	470	0.40	6.3	1270
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	110	28	290	6	6.6	140	260	440	0.40	6.6	1230
MAY											
28...	110	32	330	7	5.9	130	260	480	0.40	4.6	1300
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	120	34	350	7	6.8	150	270	560	0.40	6.6	1440
AUG											
21...	100	31	320	7	7.1	95	240	470	0.40	8.3	1230
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	120	33	340	7	5.5	180	250	560	0.40	13	1430

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322227097412101 - LAKE GRANBURY SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
19...	0.077	0.010	0.037	<0.010	--	0.50	0.020	<0.010	<10	<10
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	0.075	0.020	0.095	0.030	0.37	0.40	0.020	<0.010	<10	10
19...	0.070	0.030	0.100	0.050	0.45	0.50	0.020	<0.010	10	20
19...	0.060	0.050	0.110	0.110	0.39	0.50	0.070	0.010	30	220
MAY										
28...	--	0.010	<0.050	0.010	0.29	0.30	0.020	<0.010	<10	<10
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	<0.010	0.110	0.010	0.39	0.40	0.020	<0.010	10	90
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	0.022	0.030	0.052	0.420	0.48	0.90	0.090	0.040	200	1400
AUG										
21...	--	<0.010	<0.050	<0.010	--	0.60	0.020	<0.010	<10	<10
21...	--	<0.010	<0.050	0.020	0.38	0.40	0.030	<0.010	<10	30
21...	--	<0.010	<0.050	<0.010	--	0.40	0.020	<0.010	<10	<10
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	<0.010	<0.050	2.40	0.40	2.8	0.440	0.270	150	1400

322231097412001 - LAKE GRANBURY SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
19...	1140	1.00	2140	8.3	15.0	9.2	93
19...	1143	10.0	2150	8.2	14.5	8.8	88
19...	1145	20.0	2150	8.2	14.5	8.5	85
19...	1148	30.0	2150	8.2	14.5	8.3	83
19...	1151	40.0	2150	8.1	14.5	8.0	80
19...	1154	50.0	2150	8.1	14.5	7.7	77
19...	1157	56.0	2140	8.0	14.5	7.3	73
MAY							
28...	1358	1.00	2450	8.3	27.5	7.0	91
28...	1401	10.0	2450	8.3	27.5	7.9	103
28...	1404	20.0	2470	7.8	25.0	4.0	50
28...	1407	30.0	2530	7.5	23.5	1.2	14
28...	1410	40.0	2640	7.4	22.0	0.5	6
28...	1413	50.0	2650	7.4	21.5	0.1	1
28...	1416	55.0	2620	7.4	21.0	0.3	3
AUG							
21...	1203	1.00	2290	8.4	30.0	8.4	114
21...	1205	10.0	2320	8.2	29.5	7.6	102
21...	1207	20.0	2320	7.4	28.5	1.9	25
21...	1209	30.0	2360	7.3	28.0	0.9	12
21...	1211	40.0	2310	7.3	27.5	0	0
21...	1214	50.0	2460	7.2	26.5	0	0
21...	1216	55.0	2440	7.1	26.0	0	0

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322345097421901 - LAKE GRANBURY SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
19...	1335	1.00	2140	8.4	16.5	9.9	104
19...	1337	10.0	2140	8.4	16.0	9.8	102
19...	1339	20.0	2140	8.1	15.0	8.1	82
19...	1341	30.0	2140	8.2	14.5	8.3	83
19...	1344	42.0	2140	8.1	14.5	7.8	78
MAY							
28...	1456	1.00	2430	8.3	28.5	7.9	104
28...	1458	10.0	2430	8.3	28.5	7.8	103
28...	1501	20.0	2420	7.8	26.0	4.1	52
28...	1504	30.0	2460	7.4	24.0	1.5	18
28...	1507	42.0	2570	7.4	22.5	0.6	7
AUG							
21...	1251	1.00	2260	8.4	31.0	9.0	124
21...	1253	10.0	2250	8.0	29.5	5.9	79
21...	1255	20.0	2220	7.3	28.5	1.0	13
21...	1258	30.0	2230	7.3	28.5	0	0

322341097420601 - LAKE GRANBURY SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR								
19...	1210	1.00	2140	8.4	16.5	1.00	9.9	104
19...	1213	10.0	2140	8.4	16.0	--	9.8	102
19...	1216	20.0	2140	8.1	15.0	--	8.2	83
19...	1219	30.0	2140	8.2	14.5	--	8.2	82
19...	1222	40.0	2140	8.1	14.5	--	7.7	77
19...	1225	50.0	2150	8.0	14.5	--	6.7	67
19...	1229	59.0	2150	7.6	14.5	--	3.4	34
MAY								
28...	1425	1.00	2440	8.3	28.5	--	7.7	102
28...	1427	10.0	2420	8.1	26.5	--	5.7	73
28...	1430	20.0	2440	7.6	24.5	--	2.4	29
28...	1432	30.0	2500	7.4	23.0	--	0.7	8
28...	1434	40.0	2560	7.4	22.5	--	0.5	6
28...	1436	50.0	2660	7.4	21.5	--	0.1	1
28...	1439	61.0	2640	7.4	21.0	--	0.3	3
AUG								
21...	1228	1.00	2250	8.4	31.0	--	8.9	123
21...	1230	10.0	2260	8.2	30.0	--	6.9	94
21...	1233	20.0	2230	7.3	28.5	--	1.0	13
21...	1235	30.0	2220	7.3	28.0	--	0	0
21...	1239	40.0	1910	7.3	27.0	--	0	0
21...	1242	50.0	2360	7.2	27.0	--	0	0
21...	1245	60.0	2500	7.1	25.0	--	0	0

322537097414501 - LAKE GRANBURY SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
19...	1313	1.00	2130	8.4	17.0	9.8	104
19...	1316	10.0	2070	8.4	16.5	10.0	105
19...	1319	15.0	2070	8.3	16.0	9.1	94
MAY							
28...	1519	1.00	2360	8.3	30.5	7.2	98
28...	1522	14.0	2340	8.2	29.0	6.2	83
AUG							
21...	1319	1.00	2170	8.4	32.0	7.7	108
21...	1321	10.0	2050	8.1	30.5	6.1	83
21...	1324	15.0	1930	8.0	30.5	5.5	75

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322422097423901 - LAKE GRANBURY SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
19...	1339	1.00	2140	8.3	17.0	9.0	95
19...	1341	10.0	2140	8.3	16.5	8.6	90
19...	1344	20.0	2120	8.0	14.5	7.1	71
19...	1347	30.0	2130	8.0	14.5	6.9	69
19...	1350	40.0	2140	8.0	14.5	6.4	64
19...	1353	53.0	2130	7.8	14.5	5.0	50
MAY							
28...	1535	1.00	2410	8.3	29.0	7.4	99
28...	1538	10.0	2420	8.3	28.5	7.1	94
28...	1541	20.0	2450	7.5	25.0	1.7	21
28...	1544	30.0	2510	7.3	23.5	0.5	6
28...	1547	40.0	2570	7.3	22.5	0.2	2
28...	1550	54.0	2670	7.4	21.0	0.2	2
AUG							
21...	1345	1.00	2130	8.1	33.0	6.2	88
21...	1348	10.0	2210	8.0	29.5	5.6	75
21...	1351	20.0	1840	7.3	28.0	0	0
21...	1354	30.0	1710	7.3	27.5	0	0
21...	1357	40.0	1630	7.3	26.5	0	0
21...	1400	54.0	1630	7.3	26.5	0	0

322437097423901 - LAKE GRANBURY SITE DL

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
19...	1359	1.00	2130	8.3	17.0	9.1	96
19...	1401	10.0	2130	8.3	16.0	8.6	89
19...	1403	19.0	2130	8.1	15.0	7.3	74
MAY							
28...	1555	1.00	2410	8.3	29.5	7.4	100
28...	1558	10.0	2410	8.3	28.5	7.0	92
28...	1602	19.0	2440	7.6	27.0	2.4	31
AUG							
21...	1406	1.00	2160	8.0	34.0	4.9	71
21...	1409	10.0	2000	7.3	28.5	1.0	13
21...	1411	19.0	1860	7.3	28.0	0	0

322458097443101 - LAKE GRANBURY SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
19...	1412	1.00	2140	8.4	16.5	9.7	102
19...	1414	10.0	2140	8.4	16.5	9.4	99
19...	1416	20.0	2140	8.2	14.5	7.9	79
19...	1418	30.0	2190	8.2	14.5	7.6	76
19...	1420	40.0	2270	8.1	14.5	6.9	69
19...	1422	50.0	2310	8.0	14.5	6.7	67
MAY							
28...	1612	1.00	2410	8.4	29.5	7.6	102
28...	1614	10.0	2410	8.3	28.5	6.9	91
28...	1617	20.0	2440	7.7	26.0	2.9	37
28...	1620	30.0	2510	7.4	24.0	0.5	6
28...	1623	40.0	2560	7.3	23.0	0.2	2
28...	1626	50.0	2610	7.4	22.0	0.2	2
AUG							
21...	1434	1.00	2170	8.4	32.0	8.1	114
21...	1437	10.0	2170	8.3	31.0	7.0	97
21...	1439	20.0	1710	7.4	28.0	1.1	14
21...	1441	30.0	1610	7.3	27.0	0.6	8
21...	1444	40.0	1580	7.3	26.5	0	0
21...	1447	49.0	1590	7.3	26.5	0	0

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322619097463301 - LAKE GRANBURY SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)
MAR											
19...	1443	1.00	2200	8.4	15.5	--	9.8	101	400	250	110
19...	1447	10.0	2220	8.4	15.0	--	9.3	94	--	--	--
19...	1451	20.0	2550	8.2	14.0	--	7.7	77	--	--	--
19...	1455	30.0	2640	8.1	14.0	--	7.0	70	--	--	--
19...	1500	38.0	2630	8.1	14.0	--	7.0	70	470	330	130
MAY											
28...	1707	1.00	2370	8.4	29.5	0.90	7.8	105	400	280	110
28...	1711	10.0	2390	8.3	28.5	--	7.4	98	--	--	--
28...	1715	20.0	2470	7.9	27.0	--	4.0	51	--	--	--
28...	1719	30.0	2470	7.6	26.0	--	1.8	23	--	--	--
28...	1723	40.0	2580	7.4	23.0	--	0.2	2	430	310	120
AUG											
21...	1514	1.00	1770	8.6	31.5	--	10.1	140	290	210	76
21...	1524	10.0	1650	8.3	29.5	--	8.0	107	--	--	--
21...	1534	20.0	1420	7.4	27.5	--	1.6	21	--	--	--
21...	1544	30.0	1460	7.3	26.5	--	0	0	--	--	--
21...	1552	38.0	1480	7.3	26.5	--	0	0	260	160	74

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
MAR										
19...	30	300	7	6.2	150	280	480	0.40	4.8	1300
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	35	370	7	6.8	140	320	560	0.40	4.5	1510
MAY										
28...	30	320	7	6.3	120	260	460	0.40	5.9	1260
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	32	350	7	6.2	120	280	570	0.40	7.9	1440
AUG										
21...	24	240	6	7.7	82	210	400	0.40	8.3	1020
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	19	190	5	6.7	110	170	310	0.30	8.6	843

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
19...	--	<0.010	<0.050	<0.010	--	0.30	0.020	<0.010	<10	<10
19...	--	<0.010	<0.050	<0.010	--	0.40	0.020	<0.010	<10	<10
19...	--	<0.010	<0.050	0.020	0.38	0.40	0.020	<0.010	<10	10
19...	--	--	--	--	--	--	--	--	--	--
19...	--	0.010	<0.050	0.060	0.64	0.70	0.070	0.010	10	50
MAY										
28...	--	0.010	<0.050	0.020	0.48	0.50	0.020	<0.010	<10	<10
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	0.030	<0.050	0.100	0.60	0.70	0.040	0.010	<10	140
28...	0.130	0.070	0.200	0.200	0.40	0.60	0.030	0.030	60	1100
AUG										
21...	--	<0.010	<0.050	<0.010	--	0.60	0.040	<0.010	4	<1
21...	--	<0.010	<0.050	0.030	0.57	0.60	0.040	<0.010	<10	60
21...	--	0.020	<0.050	0.070	0.33	0.40	0.060	<0.010	<10	320
21...	--	--	--	--	--	--	--	--	--	--
21...	--	0.030	<0.050	0.430	0.47	0.90	0.090	0.010	100	630

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322703097451401 - LAKE GRANBURY SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
19...	1516	1.00	2220	8.3	15.5	9.2	94
19...	1518	14.0	2210	8.1	14.5	7.6	76
MAY							
28...	1740	1.00	2330	8.4	30.0	7.5	102
28...	1743	10.0	2370	8.3	28.5	7.2	95
28...	1746	15.0	2310	7.8	27.5	4.2	55
AUG							
21...	1609	1.00	1560	8.6	31.0	9.8	135
21...	1611	10.0	1590	8.3	29.5	7.8	105
21...	1614	23.0	1560	7.3	28.0	0	0

322834097470801 - LAKE GRANBURY SITE HC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
19...	1538	1.00	2620	8.4	15.0	9.7	99
19...	1541	10.0	2740	8.3	14.0	8.6	86
19...	1544	20.0	2780	8.2	14.0	7.6	76
19...	1548	30.0	2780	8.1	14.0	7.3	73
MAY							
28...	1759	1.00	2430	8.4	29.0	7.5	100
28...	1801	10.0	2520	8.1	28.5	5.2	69
28...	1804	20.0	2590	7.7	27.5	2.9	38
28...	1807	31.0	2590	7.4	26.5	0.3	4
AUG							
21...	1631	1.00	1080	8.8	30.5	10.3	140
21...	1634	10.0	1110	7.5	28.0	2.8	37
21...	1636	20.0	1150	7.4	27.5	1.4	18
21...	1640	32.0	1230	7.4	26.5	0	0

322819097483201 - LAKE GRANBURY SITE IC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
19...	1559	1.00	2760	8.3	14.5	8.8	89
19...	1603	10.0	2820	8.0	14.0	6.4	64
19...	1605	15.0	2820	7.9	14.0	6.0	60
MAY							
28...	1815	1.00	2440	8.4	30.0	7.5	102
28...	1817	10.0	2470	8.2	28.0	6.0	79
28...	1820	15.0	2420	7.5	27.5	2.0	26
AUG							
21...	1650	1.00	1050	8.4	30.0	7.6	103
21...	1653	10.0	1080	7.3	28.0	0.5	7
21...	1656	15.0	1240	7.2	27.5	0	0

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

323318097480101 - LAKE GRANBURY SITE JC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
19...	1627	1.00	3000	8.2	16.5	8.8	93
19...	1630	10.0	3030	8.3	14.5	9.0	91
19...	1633	21.0	3040	8.1	13.5	7.7	76
MAY							
28...	1847	1.00	2700	8.3	31.5	7.2	100
28...	1850	10.0	2680	8.2	29.5	6.7	90
28...	1853	22.0	2730	7.4	25.0	0.2	2
AUG							
21...	1733	1.00	2260	8.4	30.5	7.7	105
21...	1735	10.0	2280	8.3	30.0	6.8	92
21...	1738	21.0	2290	8.2	29.5	6.0	81

323435097492001 - LAKE GRANBURY SITE KC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
MAR										
19...	1646	1.00	2920	8.2	15.5	--	9.0	93	480	350
19...	1651	10.0	2920	8.2	15.0	--	8.8	90	--	--
19...	1657	20.0	2990	7.8	14.5	--	5.7	58	480	350
MAY										
28...	1908	1.00	2110	8.2	31.0	0.40	7.1	98	360	240
28...	1912	10.0	2100	8.2	30.5	--	6.8	93	--	--
28...	1915	15.0	2140	7.8	29.0	--	4.8	64	--	--
28...	1922	21.0	2730	7.4	25.5	--	0.2	3	470	310
AUG										
21...	1756	1.00	2340	8.4	30.0	--	6.6	90	430	310
21...	1803	10.0	2340	8.4	30.0	--	6.6	90	--	--
21...	1808	19.0	2340	8.4	30.0	--	6.6	90	400	290

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
MAR										
19...	130	37	420	8	7.0	130	350	650	0.40	4.8
19...	--	--	--	--	--	--	--	--	--	--
19...	130	38	440	9	7.0	130	360	670	0.50	4.9
MAY										
28...	98	29	280	6	6.2	130	230	440	0.30	5.1
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	130	35	380	8	6.7	160	290	590	0.40	9.3
AUG										
21...	120	31	320	7	6.0	120	290	490	0.50	8.1
21...	--	--	--	--	--	--	--	--	--	--
21...	110	31	320	7	6.6	120	300	530	0.50	8.6

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
19...	1680	<0.010	<0.050	<0.010	--	0.30	0.020	<0.010	10	10
19...	--	<0.010	<0.050	<0.010	--	0.50	0.020	<0.010	10	32
19...	1730	<0.010	<0.050	0.140	0.56	0.70	0.070	0.010	10	310
MAY										
28...	1160	0.010	<0.050	0.010	0.49	0.50	0.030	<0.010	10	40
28...	--	--	--	--	--	--	--	--	--	--
28...	--	0.020	<0.050	0.010	0.59	0.60	0.050	0.010	<10	820
28...	1540	0.030	<0.050	0.650	0.85	1.5	0.040	0.030	50	2500
AUG										
21...	1330	0.010	<0.050	<0.010	--	0.50	0.080	<0.010	<10	10
21...	--	0.020	<0.050	<0.010	--	0.40	0.080	<0.010	<10	10
21...	1380	0.020	<0.050	<0.010	--	0.40	0.110	0.010	<10	20

BRAZOS RIVER MAIN STEM

08091000 BRAZOS RIVER NEAR GLEN ROSE, TX

LOCATION.--Lat 32°16'18", long 97°39'48", Somervell County, Hydrologic Unit 12060201, at downstream side of bridge on U.S. Highway 67, 600 ft downstream from Georges Creek, 4.1 mi upstream from Paluxy River, 6 mi northeast of Glen Rose, and at mile 511.2.

DRAINAGE AREA.--25,818 mi², of which 9,566 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1923 to current year.
Water-quality records.--Chemical analyses: August to November 1946. Chemical and biochemical analyses: October 1980 to June 1987.

REVISED RECORDS.--WSP 1058: 1932. WSP 1512: 1946-47, 1949. WSP 1712: 1928(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 567.82 ft above National Geodetic Vertical Datum of 1929. Prior to May 7, 1931, nonrecording gage at site 2.5 mi downstream at same datum. May 7, 1931, to Sept. 30, 1957, water-stage recorder at site 2.4 mi downstream at same datum, used as supplementary gage Oct. 1, 1957, to Apr. 1, 1959. Apr. 27, 1950, to Sept. 30, 1957, water-stage recorder, present gage, used as supplementary gage.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since September 1969, flow largely regulated by Lake Granbury (station 08090900) 31 mi upstream. There are many diversions above station for irrigation, municipal supply, and for oil field operations.

AVERAGE DISCHARGE.--46 years (water years 1924-69) prior to regulation by Lake Granbury, 1,567 ft³/s (1,135,000 acre-ft/yr); 22 years (water years 1970-91) regulated, 1,126 ft³/s (815,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97,600 ft³/s May 18, 1935 (gage height, 23.68 ft, site then in use, from floodmarks); maximum gage height, 35.76 ft, present site, Apr. 28, 1990; no flow at times prior to construction of Morris Sheppard Dam (1941) on the Brazos River forming Possum Kingdom Lake, and on July 14, 1984.
Maximum stage since at least 1876, that of Apr. 28, 1990.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908 reached a stage of 27 ft, and flood in May 1922 reached a stage of 29.5 ft, each at site 2.4 mi downstream, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,300 ft³/s June 10 at 1600 hours (gage height, 19.17 ft); minimum daily, 8.1 ft³/s Dec. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1950	62	156	62	569	72	511	57	71	660	266	765
2	860	27	191	43	401	85	516	34	488	491	123	1200
3	671	20	197	1160	550	481	408	110	3360	495	134	779
4	692	20	373	1140	556	529	116	768	4190	500	450	750
5	1110	1000	478	592	556	339	73	1160	10700	471	466	503
6	979	1400	478	546	399	493	74	1750	20100	478	223	437
7	942	940	260	615	100	507	522	1450	18400	478	101	307
8	901	517	74	1280	51	514	546	1300	18500	478	126	969
9	906	1910	37	609	40	579	533	2590	18200	364	125	776
10	834	1520	28	1500	29	568	528	2610	25600	278	769	321
11	811	324	211	608	28	542	542	6570	21900	184	545	172
12	803	75	297	225	333	538	601	9820	18400	106	1910	143
13	783	57	127	591	532	e468	2830	2700	11800	256	6450	229
14	774	160	401	581	93	e487	1870	2250	7590	441	3620	403
15	221	192	345	581	46	e422	674	1740	5010	451	1290	410
16	46	191	104	588	57	e231	289	935	5920	281	454	425
17	16	173	45	388	452	e213	99	456	15200	292	1130	1490
18	15	195	191	938	487	e209	344	151	15000	291	1280	821
19	211	170	697	821	1730	e205	572	37	4780	289	1820	3020
20	284	71	234	597	1810	e303	384	19	2450	289	1940	2820
21	252	44	46	592	366	e490	101	16	540	433	1330	3120
22	694	46	22	252	110	e399	59	118	350	447	1390	1510
23	232	417	8.1	240	301	e319	50	270	965	219	1450	1440
24	43	165	33	641	608	e476	46	127	1020	106	1290	2010
25	17	77	46	775	614	e469	94	76	677	141	1270	3090
26	16	60	839	785	598	e227	128	283	479	579	1360	2660
27	219	56	2270	773	440	107	441	259	699	2760	1900	2640
28	332	565	390	767	127	224	658	247	1470	4090	1270	2630
29	342	288	87	621	---	522	617	243	699	2390	802	2640
30	347	71	54	566	---	515	227	233	675	1620	750	1620
31	249	---	63	575	---	497	---	80	---	685	738	---
TOTAL	16552	10813	8782.1	20052	11983	12030	14453	38459	235233	21043	36772	40100
MEAN	534	360	283	647	428	388	482	1241	7841	679	1186	1337
MAX	1950	1910	2270	1500	1810	579	2830	9820	25600	4090	6450	3120
MIN	15	20	8.1	43	28	72	46	16	71	106	101	143
AC-FT	32830	21450	17420	39770	23770	23860	28670	76280	466600	41740	72940	79540

CAL YR 1990 TOTAL 1201439.1 MEAN 3292 MAX 76800 MIN 8.1 AC-FT 2383000
WTR YR 1991 TOTAL 466272.1 MEAN 1277 MAX 25600 MIN 8.1 AC-FT 924900

e Estimated

08091500 PALUXY RIVER AT GLEN ROSE, TX

LOCATION.--Lat 32°13'53", long 97°46'37", Somervell County, Hydrologic Unit 12060202, on left bank at downstream side of remaining pier of dismantled highway bridge, 500 ft upstream from bridge on U.S. Highway 67, 1.0 mi upstream from Cross Branch, 1.2 mi southwest of Glen Rose, and 5.1 mi upstream from mouth.

DRAINAGE AREA.--410 mi^2.

PERIOD OF RECORD.--October 1923 to September 1925, May 1947 to current year. Prior to October 1965, published as Paluxy Creek at Glen Rose.

REVISED RECORDS.--WSP 1392: 1949, 1952. WSP 2122: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 609.66 ft National Geodetic Vertical Datum of 1929. Oct. 27, 1923, to Sept. 30, 1925, nonrecording gage at bridge 1.8 mi downstream at datum 13.62 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow is affected at times by discharge from the flood-detention pools of fourteen floodwater-retarding structures with a combined capacity of 20,100 acre-ft. These structures control runoff from 90.8 mi^2 above this station.

AVERAGE DISCHARGE.--45 years (water years 1925, 1948-91), 67.3 ft^3/s (2.23 in/yr), 48,760 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft^3/s Oct. 4, 1959 (gage height, 25.4 ft), from rating curve extended above 32,000 ft^3/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1877, 27.2 ft Apr. 17, 1908, present site and datum (discharge, 59,000 ft^3/s), from rating curve extended as explained above. Flood of May 21, 1922, reached a stage of 26.0 ft, present site and datum (discharge, 53,000 ft^3/s), from rating curve extended as explained above. Flood in November 1918 reached about the same stage as flood of May 21, 1922, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,820 ft^3/s June 2 at 2200 hours (gage height, 10.23 ft); minimum daily, 4.4 ft^3/s Aug. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	11	14	19	27	30	20	17	25	13	7.2	10
2	12	11	15	19	26	29	20	17	534	13	6.7	11
3	12	12	16	20	26	28	20	20	516	14	6.3	11
4	13	15	15	20	26	26	20	37	201	17	5.9	13
5	13	15	14	20	32	26	20	85	130	15	5.4	15
6	12	14	14	21	31	25	20	42	107	13	5.0	15
7	12	14	14	21	28	24	20	30	120	11	4.6	17
8	11	23	14	20	27	23	20	135	104	11	4.4	25
9	26	31	14	22	26	23	19	169	202	9.9	4.9	20
10	52	26	14	32	26	22	18	84	141	9.3	9.1	17
11	23	19	14	32	26	22	18	54	82	8.8	13	15
12	17	16	14	27	27	22	27	44	57	8.4	16	15
13	15	15	14	23	27	22	56	37	46	8.2	24	14
14	14	14	14	22	26	22	31	51	39	7.7	387	14
15	13	14	14	23	25	22	24	50	43	7.4	99	14
16	12	14	14	21	25	22	23	39	41	7.2	38	21
17	12	14	15	20	25	23	25	34	40	6.9	24	24
18	13	14	15	48	26	23	29	31	50	6.7	19	25
19	11	14	14	55	25	22	28	29	41	6.2	16	109
20	11	14	14	52	24	22	30	29	33	5.8	14	68
21	11	14	13	41	25	22	25	29	29	5.5	13	44
22	12	16	15	35	33	22	23	31	26	5.2	12	34
23	11	17	19	32	38	22	22	30	24	5.2	11	31
24	11	16	19	31	36	21	22	31	22	5.3	11	29
25	11	15	20	29	32	21	26	82	20	9.4	10	27
26	11	15	20	28	29	21	26	65	19	8.4	9.6	24
27	11	16	20	27	27	24	25	51	18	13	9.5	23
28	11	15	20	27	27	24	21	41	16	12	9.6	21
29	11	15	21	27	---	23	20	34	15	12	12	21
30	11	14	20	27	---	22	18	30	14	10	11	20
31	11	---	19	27	---	21	---	27	---	8.4	10	---
TOTAL	439	473	492	868	778	721	716	1485	2755	293.9	828.2	747
MEAN	14.2	15.8	15.9	28.0	27.8	23.3	23.9	47.9	91.8	9.48	26.7	24.9
MAX	52	31	21	55	38	30	56	169	534	17	387	109
MIN	11	11	13	19	24	21	18	17	14	5.2	4.4	10
AC-FT	871	938	976	1720	1540	1430	1420	2950	5460	583	1640	1480

CAL YR 1990	TOTAL	70445	MEAN	193	MAX	12000	MIN	11	AC-FT	139700
WTR YR 1991	TOTAL	10596.1	MEAN	29.0	MAX	534	MIN	4.4	AC-FT	21020

08091730 SQUAW CREEK RESERVOIR NEAR GLEN ROSE, TX

LOCATION.--Lat 32°18'00", long 97°47'12", Somervell County, Hydrologic Unit 12060202, on upstream side of intake structure near power house on Squaw Creek, 1.8 mi upstream from dam, 3.9 mi north of Glen Rose, and 6.1 mi upstream from mouth.

DRAINAGE AREA.--64.0 mi².

PERIOD OF RECORD.--February 1977 to current year.
Water-quality records.--Chemical analyses: October 1982 to September 1984.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rolled earthfill dam 4,360 ft long. Deliberate impoundment began in February 1977, and the dam was completed in June 1977. The flood-control outlet works consist of an ungated 100-foot-long concrete ogee spillway located at right end of dam. The low-flow outlet works consist of a concrete outlet tower with three 4- by 6-foot slide gates and a 6- by 6-foot slide gate, which feed into a 6-foot inside diameter concrete conduit that extends through the dam. During the year, water was diverted by pipeline from Lake Granbury into this reservoir. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	796.0	228,100
Crest of spillway	783.0	178,100
Crest of spillway (normal operating level)	775.0	151,100
Invert of slide gate (No. 1)	764.0	117,300
Invert of slide gate (No. 2)	715.0	24,670
Invert of slide gate (No. 3)	666.5	380
Lowest gated outlet (invert)	653.0	0

COOPERATION.--The capacity table, provided by Texas Utilities Services, Inc., was prepared by Freese and Nichols, Inc., Consulting Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 160,600 acre-ft May 3, 1990 (elevation, 777.91 ft); minimum since initial filling of reservoir on May 3, 1979, 142,700 acre-ft May 20, 1983 (elevation, 772.44 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 152,500 acre-ft June 3 at 1700 hours (elevation, 775.47 ft); minimum, 145,700 acre-ft Mar. 13 (elevation, 773.37 ft).

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

773.00	144,500	775.00	151,000
774.00	147,700	776.00	154,200

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148600	148600	149800	147600	147400	146400	146700	148900	150900	150100	147600	149500
2	148600	148700	149900	147600	147400	146500	146700	149100	152300	150100	147600	149500
3	148700	148800	149700	147600	147400	146300	146800	149000	152400	150200	147600	149500
4	148800	148800	149600	147600	147400	146300	146900	149500	152400	150000	147500	149500
5	148700	148800	149600	147500	147400	146200	147000	149400	151200	150000	147600	149500
6	148700	148800	149500	147600	147400	146200	147100	149400	152200	149900	147600	149500
7	148700	148900	149300	147500	147400	146000	147100	149300	152200	149700	147600	149700
8	148800	149500	149300	147500	147400	146000	147200	150200	152100	149600	147600	149600
9	148800	149400	149300	147600	147300	145900	147200	150300	152000	149500	147700	149600
10	148700	149500	149200	147700	147300	145800	147200	150300	151900	149300	147700	149600
11	148700	149500	149200	147600	147200	145800	147500	150300	151800	149100	148200	149600
12	148700	149600	149100	147600	147200	145700	148100	150300	151800	149000	148500	149600
13	148700	149600	149000	147600	147200	145700	148700	150300	151700	148800	149000	149600
14	148700	149700	148900	147600	147200	145700	148700	151100	151600	148700	149600	149500
15	148700	149700	148900	147500	147000	145700	148700	151100	151600	148600	149600	149500
16	148700	149800	148800	147500	146900	145800	148800	151100	151500	148600	149600	149800
17	148700	149800	148800	147500	147000	145800	149100	151100	151500	148400	149600	149900
18	148500	149900	148800	147900	147000	145900	149100	151100	151400	148300	149700	150500
19	148500	150000	148700	148000	146800	145900	149100	151100	151400	148200	149700	151000
20	148500	150000	148700	147900	146800	146000	149000	151100	151300	148000	149600	150900
21	148400	150100	148500	147800	146800	146100	149000	151100	151200	147800	149700	150800
22	148400	150200	148300	147700	146800	146100	148900	151100	151200	147700	149600	150700
23	148400	150200	148100	147700	146700	146100	148900	151100	151100	147600	149600	150600
24	148500	150300	148000	147700	146700	146100	149100	151200	150900	147500	149600	150500
25	148500	150200	148000	147700	146600	146200	149100	151300	150800	147400	149600	150400
26	148500	150200	148000	147600	146500	146400	149100	151300	150700	147500	149600	150300
27	148500	150200	147900	147600	146400	146500	149100	151200	150600	147400	149500	150200
28	148600	150000	147900	147600	146400	146500	149100	151200	150500	147500	149500	150100
29	148600	150000	148000	147500	---	146600	149000	151100	150400	147600	149500	150000
30	148600	149900	147800	147500	---	146500	148900	151100	150200	147600	149500	149900
31	148600	---	147700	147500	---	146600	---	151000	---	147600	149500	---
MAX	148800	150300	149900	148000	147400	146600	149100	151300	152400	150200	149700	151000
MIN	148400	148600	147700	147500	146400	145700	146700	148900	150200	147400	147500	149500
(†)	774.29	774.67	773.99	773.93	773.61	773.66	774.38	775.01	774.78	773.97	774.54	774.69
(ϕ)	-100	+1300	-2200	-200	-1100	+200	+2300	+2100	-800	-2600	+1900	+400

CAL YR 1990 MAX 159600 MIN 146100 (ϕ) +2000
WTR YR 1991 MAX 152400 MIN 145700 (ϕ) +1200

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08091750 SQUAW CREEK NEAR GLEN ROSE, TX

LOCATION.--Lat 32°16'12", long 97°43'56", Somervell County, Hydrologic Unit 12060202, on left bank at downstream side of highway embankment 25 ft left of left end of bridge on State Highway 144, 2.1 mi upstream from mouth, 2.5 mi downstream from Squaw Creek Dam, and 2.8 mi northeast of Glen Rose.

DRAINAGE AREA.--70.3 mi².

PERIOD OF RECORD.--October 1973 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 599.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known diversions between Squaw Creek Reservoir and this station. Flow has been regulated since Feb. 15, 1977, by Squaw Creek Reservoir. During the year, low flows were sustained by releases from a pipeline used to divert water from Lake Granbury (station 08090900), to Squaw Creek Reservoir (station 08091730). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years (water years 1977-91) 17.2 ft³/s (12,460 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,030 ft³/s Apr. 8, 1975 (gage height, 11.90 ft), from rating curve extended above 1,000 ft³/s on basis of velocity-area study); minimum, 0.02 ft³/s Aug. 28, 29, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1934, about 20.5 ft in May 1957, from information by State Department of Highways and Public Transportation (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,470 ft³/s Aug. 14 at 1630 hours (gage height, 6.52 ft), from rating curve extended above 1,000 ft³/s on basis of velocity-area study); minimum, 1.3 ft³/s Aug. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	3.1	3.7	e3.7	4.6	3.7	e3.0	2.6	4.3	3.2	3.0	2.6
2	3.6	3.1	3.9	e3.7	4.6	3.5	2.9	2.7	57	3.2	2.9	3.4
3	4.1	3.3	6.9	e3.6	4.6	3.3	e2.9	3.4	108	3.2	2.7	2.5
4	4.1	6.0	4.8	e3.7	5.2	3.4	e2.8	3.6	76	3.2	2.7	2.3
5	3.9	4.5	4.6	e3.6	5.2	3.4	e2.7	3.6	64	3.9	2.7	2.4
6	4.3	3.9	4.6	e3.7	5.2	3.2	e2.7	3.2	60	5.2	2.7	2.4
7	4.1	3.7	4.6	e3.7	5.1	3.1	e2.7	3.1	55	8.5	2.6	2.4
8	4.2	8.3	4.6	3.8	3.8	3.1	e2.5	18	50	5.6	2.6	2.8
9	6.9	4.9	4.6	4.8	3.7	3.2	e2.4	4.2	42	5.2	2.6	2.8
10	3.5	4.0	4.6	7.0	3.7	3.3	e2.4	3.5	37	4.8	2.6	2.2
11	3.3	3.8	4.3	4.0	3.7	3.2	e2.6	3.6	33	4.8	3.9	1.9
12	3.2	3.6	4.1	3.9	3.7	3.1	2.9	3.6	29	4.6	5.0	1.8
13	3.1	3.6	4.1	3.7	3.7	3.3	33	3.5	25	4.2	6.5	1.6
14	3.1	3.5	4.1	3.7	3.7	3.3	5.3	4.8	20	2.8	223	1.6
15	3.1	3.5	4.1	3.7	3.7	e3.3	e3.3	6.1	16	2.6	4.5	1.6
16	3.0	3.5	4.1	3.7	3.7	e3.3	3.0	3.7	19	2.5	1.4	1.6
17	2.9	3.5	4.1	3.7	3.7	e2.9	2.7	3.7	16	3.2	1.4	3.6
18	43	3.5	4.1	10	3.7	e3.1	2.8	3.6	15	4.3	1.4	3.0
19	3.9	3.5	4.1	5.4	3.7	e3.2	2.4	3.9	11	4.6	1.5	6.9
20	3.1	4.0	4.1	3.7	3.7	3.4	2.4	3.8	8.5	4.4	1.7	29
21	3.4	3.9	4.2	3.6	4.0	e3.3	2.4	3.8	6.6	4.3	2.1	2.8
22	3.4	4.7	4.4	3.8	4.6	e3.2	2.4	3.8	5.2	4.0	2.5	2.0
23	3.3	4.9	4.6	3.9	4.8	e3.2	3.1	3.9	4.3	3.1	2.7	1.9
24	3.1	3.8	4.4	3.9	4.6	e3.4	2.6	4.2	4.0	2.9	2.9	1.9
25	3.1	3.7	4.4	3.9	3.9	e3.4	3.5	8.1	3.9	2.9	2.9	3.8
26	3.1	3.7	4.4	3.9	3.9	e3.3	3.7	4.6	3.8	2.9	2.9	3.1
27	3.1	3.9	3.8	3.9	3.8	e3.1	2.9	4.1	3.7	2.9	2.5	2.9
28	3.1	3.8	3.7	3.9	3.7	2.9	2.8	3.8	3.5	3.7	1.6	2.9
29	3.1	3.7	3.6	3.9	---	e2.9	2.9	3.7	3.5	3.6	1.4	2.9
30	3.1	3.7	e3.6	4.3	---	e3.0	2.7	4.4	3.3	3.3	1.6	2.9
31	3.1	---	e3.7	4.6	---	e3.0	---	3.9	---	3.2	2.1	---
TOTAL	148.8	120.6	132.9	130.4	116.0	100.0	116.4	136.5	787.6	120.8	302.6	105.5
MEAN	4.80	4.02	4.29	4.21	4.14	3.23	3.88	4.40	26.3	3.90	9.76	3.52
MAX	43	8.3	6.9	10	5.2	3.7	33	18	108	8.5	223	29
MIN	2.9	3.1	3.6	3.6	3.7	2.9	2.4	2.6	3.3	2.5	1.4	1.6
AC-FT	295	239	264	259	230	198	231	271	1560	240	600	209

CAL YR 1990 TOTAL 18991.4 MEAN 52.0 MAX 3060 MIN 2.9 AC-FT 37670
WTR YR 1991 TOTAL 2318.1 MEAN 6.35 MAX 223 MIN 1.4 AC-FT 4600

e Estimated

08092000 NOLAN RIVER AT BLUM, TX
(Flood-hydrograph Partial-record Station)

LOCATION.--Lat 32°09'02", long 97°24'09", Hill County, Hydrologic Unit 12060202, on right bank 60 ft upstream from bridge on Farm Road 933, 0.6 mi northwest of Blum 2.8 mi downstream from Mustang Creek, 3.0 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.2 mi upstream from Rock Creek, and 8.5 mi upstream from mouth.

DRAINAGE AREA.--282 mi^2.

PERIOD OF RECORD.--July 1924 to September 1925. November 1947 to September 1985. Annual maximums, 1986 to current year.

REVISED RECORDS.--WSP 1312: 1925(M). WRD TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 551.48 ft above National Geodetic Vertical Datum of 1929. July 29, 1924, to Sept. 30, 1925, and Nov. 14, 1947, to May 28, 1949, nonrecording gage at railway bridge (now abandoned) 0.5 mi upstream at datum 5.00 ft higher. May 29 to July 7, 1949, nonrecording gage at present site and datum then in use (5.00 ft higher than present datum).

REMARKS.--Records fair. Since August 1984, flow from 100 mi^2 above this station has been affected by storage in Lake Pat Cleburne (station 08091900) located 13 mi upstream. The city of Cleburne diverts water from Lake Pat Cleburne and returns sewage effluent to a tributary upstream from the station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--18 years (water years 1925, 1949-64) prior to regulation by Lake Pat Cleburne, 66.1 ft^3/s (47,890 acre-ft/yr); 21 years (water years 1965-85) regulated, 81.2 ft^3/s (58,830 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 62,200 ft^3/s May 7, 1969 (gage height, 31.23 ft), from rating curve extended above 22,200 ft^3/s on basis of contracted-opening measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1887, 35.0 ft May 8, 1922, present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak gage heights (and discharges) greater than base gage height of 5.00 ft:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 13	0315	7,510	11.69	May 25	1000	2,170	6.18
Apr. 13	1545	*16,900	*18.70	June 3	0245	1,910	5.87
May 18	2015	1,760	5.70	Aug. 14	0615	8,200	12.28

Minimum discharge, not determined.

08092500 LAKE WHITNEY NEAR WHITNEY, TX

LOCATION.--Lat 31°51'55", long 97°22'18", Bosque County, Hydrologic Unit 12060202, on State Highway 22, in intake structure of Whitney Dam on Brazos River, 2.4 mi upstream from Coon Creek, 3.5 mi upstream from Iron Creek, 7.4 mi southwest of Whitney, and at mile 442.4.

DRAINAGE AREA.--27,189 mi², approximately, of which 9,566 mi² probably is noncontributing.

PERIOD OF RECORD.--December 1951 to current year. Prior to October 1970, published as Whitney Reservoir. Prior to October 1980, published as Whitney Lake.
Water-quality records.--Chemical analyses: March 1960 to September 1987. Chemical and biochemical analyses: September 1970 to August 1987.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--The lake is formed by a concrete-gravity and rolled earthfill dam 17,695 ft long, including spillway. The dam was completed in April 1951, and deliberate impoundment began Dec. 10, 1951. Concrete spillway is 680 ft long and includes 17 tainter gates 38.0 by 40.0 ft each. Outlet works are comprised of 16 gate-operated conduits that are 5.0- by 9.0 ft each. The space between elevations 522.0 and 571.0 ft is reserved for flood-control storage. At maximum design elevation of 573.0 ft the spillway is designed to discharge 684,000 ft³/s. The capacity table is based on a survey made in April and May 1959. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	584.0	-
Design flood	573.0	2,100,000
Top of gates	571.0	1,999,500
Crest of spillway (sill of gates)	533.0	627,100
Top of conservation pool (top of designated power storage)	522.0	411,100
Lowest controlled outlet (invert)	448.83	4,270

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,980,000 acre-ft May 29, 1957 (elevation, 570.25 ft); minimum daily since power pool elevation first reached in April 1954, 250,200 acre-ft Nov. 1, 1956 (elevation 509.52 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 679,200 acre-ft Jun. 11 (elevation, 535.14 ft); minimum daily, 605,500 acre-ft Jul. 26 (elevation, 532.06 ft).

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

532.0	604,100	535.0	675,700
533.0	627,300	536.0	700,900
534.0	651,200		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	643700	619700	623600	613600	629700	624100	623600	615300	623100	628000	620400	622700
2	642000	619200	623800	613400	630100	626200	622000	613900	623600	627800	618300	621800
3	641300	620600	622400	610100	630400	622700	622400	612700	636200	628000	616600	620800
4	638600	621800	620400	609400	631500	623100	621300	614300	640100	627100	615300	620600
5	638600	619900	619900	611300	632700	622700	619900	616600	648300	626200	614300	619700
6	638600	620400	621300	613400	633600	624100	617800	618000	668400	625500	613200	619000
7	639600	622000	619000	612500	632900	623100	614100	619700	676700	624500	611800	619900
8	641000	626600	619000	614300	631300	622700	610600	627100	673600	623800	609900	619400
9	641000	628000	619000	617800	630600	622700	609900	630800	670600	622700	609400	619900
10	638600	631100	617800	619400	630400	621500	608100	633400	675000	621300	608300	619200
11	637400	632500	616900	619200	628300	621800	609200	639800	679200	620100	611500	617600
12	636200	632700	617800	619700	625900	623100	610400	655900	675800	618000	611300	616200
13	635500	632700	618300	619900	626600	622900	638600	659100	669200	618000	629700	615300
14	634600	632500	618000	621800	625500	622700	645100	658600	656900	618300	648300	615900
15	633900	632200	619200	623400	622000	622700	640800	655400	652700	617300	646600	616400
16	632500	632500	619700	623800	620400	622700	634400	650500	645900	616200	639600	617300
17	633400	630400	619900	625000	621800	623100	632500	644200	652700	614100	638400	617800
18	629400	629700	618700	628500	622000	624500	630400	642500	663800	612000	637400	620600
19	628300	628700	619400	630400	623400	625000	626900	642500	660100	609900	637400	621300
20	626600	627100	621100	632900	626600	627300	623800	637400	653700	609900	637700	626200
21	626900	626600	622000	632200	625900	627300	621100	634600	648100	609900	636500	631800
22	625900	627300	621100	631800	625900	628300	617600	631500	642200	609200	635800	635500
23	625500	626400	619000	631800	626400	627600	616600	629000	639100	607800	633900	636700
24	625000	626900	617100	632700	628500	628000	615300	627100	636500	607800	632200	636200
25	623800	626400	617300	634800	626200	627600	614600	628700	634400	607100	630800	637200
26	621800	625700	619000	633200	625200	629200	614100	628300	631100	605500	629000	638400
27	620600	627100	620100	632700	623600	629400	613400	627800	629000	607400	628000	639300
28	619900	625200	620600	632000	623600	628500	615900	626900	628500	615700	626400	639600
29	619700	624800	622900	633200	---	627800	616600	625900	629000	619200	624300	640500
30	619700	622900	619900	631100	---	626400	616400	625200	628500	622000	622900	640300
31	619700	---	615700	630400	---	625000	---	624300	---	621800	623100	---
MAX	643700	632700	623800	634800	633600	629400	645100	659100	679200	628000	648300	640500
MIN	619700	619200	615700	609400	620400	621500	608100	612700	623100	605500	608300	615300
(†)	532.68	532.82	532.51	533.14	532.85	532.91	532.54	532.88	533.06	532.77	532.83	533.56
(ϕ)	-22000	+3200	-7200	+14700	-6800	+1400	-8600	+7900	+4200	-6700	+1300	+17200

CAL YR 1990 MAX 1711000 MIN 573500 (ϕ) +39500
WTR YR 1991 MAX 679200 MIN 605500 (ϕ) -1400

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08092600 BRAZOS RIVER AT WHITNEY DAM NEAR WHITNEY, TX

LOCATION.--Lat 31°52'00", long 97°22'00", Hill County, Hydrologic Unit 12060202, immediately below Whitney Dam, 3.4 mi upstream from gaging station near Whitney, 4.0 mi upstream from Iron Creek, and 7.4 mi southwest of Whitney.

DRAINAGE AREA.--27,189 mi², of which 9,566 mi² probably is noncontributing.

PERIOD OF RECORD.--Chemical analyses: August 1946 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1947 to current year.
WATER TEMPERATURE: October 1947 to current year.

INSTRUMENTATION.--From July 1953 to September 1966, water temperature was continuously recorded at this station.

REMARKS.--Records of discharge are given for gaging station 08093100. No appreciable inflow between dam and gaging station except during periods of heavy local rains. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,620 microsiemens Aug. 24, 1978; minimum daily, 203 microsiemens May 23, 1952.
WATER TEMPERATURES: Maximum daily, 33.5°C July 3, 1973; minimum daily, 0.0°C Jan. 28, 29, 1948.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,210 microsiemens June 25-27; minimum daily, 877 microsiemens Oct. 2.
WATER TEMPERATURE: Maximum daily, 27.0°C Aug. 10, 15, 16, 31; minimum daily, 7.5°C Jan.7.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
NOV									
28...	0750	25	972	8.0	12.0	220	90	64	15
JAN									
09...	0850	25	1030	8.1	10.0	220	100	64	15
MAR									
06...	0757	2000	1040	8.1	19.0	230	100	67	16
MAY									
01...	1102	25	1140	8.1	20.0	240	120	69	16
JUN									
26...	1117	2000	1990	7.8	27.0	330	220	95	23
AUG									
21...	1226	25	1860	8.0	27.0	330	210	89	25

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV									
28...	110	3	5.4	130	100	160	0.30	13	547
JAN									
09...	110	3	5.6	120	100	180	0.30	6.8	553
MAR									
06...	110	3	5.2	130	110	190	0.20	5.9	582
MAY									
01...	130	4	5.1	120	110	210	0.20	6.2	620
JUN									
26...	270	6	6.8	110	210	360	0.30	6.3	1040
AUG									
21...	240	6	6.0	110	210	380	0.30	7.6	1030

08092600 BRAZOS RIVER AT WHITNEY DAM NEAR WHITNEY, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1990 TO SEPTEMBER 1991

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.	1990	26956	896	496	36100	160	11600	110	7970	200
NOV.	1990	12288	989	549	18200	180	5930	120	4020	220
DEC.	1990	11912	995	552	17800	180	5780	120	3920	220
JAN.	1991	17374	999	554	26000	180	8470	120	5730	220
FEB.	1991	16924	1050	584	26700	190	8740	130	5880	230
MAR.	1991	11040	1060	591	17600	190	5780	130	3880	230
APR.	1991	46081	1140	635	79000	210	26200	140	17400	250
MAY	1991	53672	1190	667	96700	220	32200	150	21300	260
JUNE	1991	216437	1480	837	489000	290	169300	180	107000	300
JULY	1991	19811	2040	1170	62400	430	22800	250	13600	370
AUG.	1991	43406	1830	1040	122000	370	43700	230	26600	350
SEPT	1991	27791	1840	1050	78600	370	28100	230	17100	350
TOTAL		503692	**	**	1070000	**	369000	**	234000	**
WTD.AVG.		1380	1400	787	**	270	**	170	**	280

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	878	978	977	995	1020	1040	1120	1150	1210	2110	1950	1830
2	877	991	984	997	1010	1060	1120	1160	1210	2120	1990	1840
3	881	990	988	996	1010	1040	1110	1160	1210	2110	1960	1840
4	e880	970	995	997	1020	1040	1120	1160	1260	2060	1950	1840
5	880	951	990	994	1020	1050	1120	1170	1260	2080	1970	1830
6	887	954	987	992	1020	1050	1120	1180	1260	2090	1940	1850
7	886	952	990	995	1020	1050	1120	1170	1260	2090	1910	1860
8	887	946	991	993	1020	1050	1120	1140	1280	2080	1920	1850
9	880	948	992	996	1030	1050	1120	1170	1280	2070	1860	1850
10	887	947	990	980	1050	1050	1130	1180	1280	2060	1870	1860
11	887	945	991	993	1050	1050	1130	1180	1280	2070	1890	1840
12	890	946	990	994	1080	1050	1130	1190	1290	2040	1900	1830
13	890	947	990	994	1120	1050	1140	1200	1370	2030	1890	1840
14	889	945	991	996	1070	1060	1140	1210	1630	2050	1840	1850
15	891	945	991	996	1030	1060	1140	1200	1720	2050	1850	1850
16	913	948	992	995	1080	1060	1140	1200	1720	2040	1850	1830
17	915	954	993	994	1070	1060	1140	1200	1660	2040	1730	1830
18	899	962	992	981	1100	1060	1150	1200	1760	2040	1760	1830
19	906	971	994	993	1050	1060	1150	1200	1740	2030	1740	1830
20	904	1010	995	998	1060	1060	1150	1200	1760	2030	1780	1830
21	898	1050	994	996	1060	1060	1150	1200	1830	2020	1770	1840
22	906	1020	997	997	e1040	1070	1150	1200	2010	2010	1740	1840
23	907	998	997	998	1030	1070	1150	1200	2110	2010	1810	1830
24	908	1020	999	996	1040	1070	1150	1210	2200	2010	1780	1840
25	908	1030	e1000	998	1040	1070	1150	1200	2210	1930	1800	1830
26	909	1060	1000	1000	1040	1070	1150	1210	2210	1980	1810	1840
27	911	1100	1000	1000	1050	1080	1150	1200	2210	2000	1830	1840
28	919	983	1000	1010	1060	1080	1150	1200	2190	1880	1840	1840
29	954	977	996	1010	---	1080	1150	1200	2200	1930	1860	1840
30	969	1010	1010	1010	---	1080	1150	1200	2150	1950	1820	1850
31	981	---	1000	1000	---	1080	---	1200	---	1960	1800	---
MEAN	902	982	993	996	1050	1060	1140	1190	1660	2030	1850	1840

e Estimated

08092600 BRAZOS RIVER AT WHITNEY DAM NEAR WHITNEY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.5	19.0	16.5	8.5	8.0	11.5	14.5	17.0	21.0	26.0	26.0	26.5
2	25.0	19.0	16.0	8.5	9.0	12.0	15.0	18.0	21.0	26.0	26.0	26.5
3	25.5	19.5	15.0	8.0	8.5	11.5	15.0	18.5	20.0	26.0	26.0	26.5
4	---	18.0	14.5	8.0	9.0	11.5	16.0	18.5	22.0	26.0	26.0	26.5
5	24.5	18.0	14.5	8.0	9.0	12.0	15.0	17.5	22.5	26.0	26.0	26.5
6	24.5	18.0	14.5	8.0	9.0	12.0	15.5	18.0	23.0	26.0	26.0	26.0
7	26.5	17.5	14.0	7.5	9.0	12.0	16.0	18.0	23.0	26.0	26.0	26.5
8	26.0	17.0	14.0	8.0	9.0	12.0	16.0	18.0	24.5	26.0	26.0	26.5
9	23.0	17.0	14.0	8.0	9.5	13.0	16.0	18.0	24.5	26.0	26.0	26.5
10	22.0	17.0	13.5	8.5	9.5	13.0	16.0	19.0	25.0	26.0	27.0	26.5
11	22.5	17.0	13.0	8.0	10.0	12.0	16.5	20.0	25.5	26.0	26.0	26.5
12	22.0	17.0	14.0	8.0	10.0	13.0	17.0	20.0	26.0	26.0	26.0	26.5
13	23.0	17.0	13.5	8.0	10.0	13.0	17.5	20.0	25.5	26.0	26.0	26.5
14	23.0	16.5	13.5	8.0	10.0	13.0	18.0	20.0	26.0	26.0	26.0	26.5
15	22.0	16.5	14.5	8.5	10.0	13.0	18.0	20.0	25.5	26.0	27.0	26.5
16	22.0	17.0	14.0	8.0	10.0	13.0	17.5	20.5	26.0	26.0	27.0	26.5
17	22.0	16.5	14.0	8.5	10.5	13.0	17.5	20.0	26.0	26.0	26.5	26.5
18	20.5	16.5	14.0	9.0	10.5	13.0	17.5	20.0	26.0	26.0	26.5	26.5
19	21.0	16.0	13.5	9.0	11.0	13.0	18.0	19.5	26.0	26.0	26.5	26.0
20	22.0	17.0	14.0	8.5	11.0	13.5	18.5	20.0	26.0	26.0	26.0	24.5
21	20.0	16.0	12.0	8.0	10.5	14.5	18.0	20.0	26.0	26.0	26.0	25.0
22	20.0	17.5	10.5	8.0	---	14.0	18.0	20.0	26.0	26.0	26.5	25.0
23	19.5	17.0	10.5	8.0	11.0	14.0	17.0	20.0	26.0	26.0	26.5	24.5
24	19.5	16.5	9.5	8.5	11.0	14.5	17.5	21.0	26.0	26.0	26.5	25.0
25	19.5	16.5	---	8.0	11.0	14.0	17.0	21.0	26.0	26.0	26.5	24.0
26	19.5	17.0	10.5	8.0	10.5	15.0	18.0	21.0	26.0	26.0	26.0	24.0
27	21.0	17.0	9.5	8.5	11.0	14.5	18.0	21.0	26.0	26.0	26.0	24.0
28	19.5	16.0	10.0	8.5	11.0	14.0	18.0	21.0	26.0	26.0	26.0	24.0
29	19.5	16.0	11.5	9.0	---	14.0	17.0	20.5	26.0	26.0	26.5	24.0
30	19.0	15.5	9.0	8.0	---	14.5	17.0	21.0	26.0	26.0	26.0	23.5
31	19.0	---	8.0	8.0	---	15.0	---	21.0	---	26.0	27.0	---
MEAN	22.0	17.0	13.0	8.0	10.0	13.0	17.0	19.5	25.0	26.0	26.5	25.5

08093100 BRAZOS RIVER NEAR AQUILLA, TX

LOCATION.--Lat 31°48'44", long 97°17'51", Bosque County, Hydrologic Unit 12060202, on right bank at downstream side of highway embankment near right end of bridge on Farm Road 2114, 2.0 mi downstream from Tener Creek, 4.9 mi downstream from Iron Creek, 5.4 mi southwest of Aquilla, 9.0 mi downstream from Whitney Dam, and at mile 434.0.

DRAINAGE AREA.--27,244 mi², of which 9,566 mi², probably is noncontributing.

PERIOD OF RECORD.--October 1938 to current year. Prior to October 1974, published as Brazos River near Whitney.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 404.29 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1948, nonrecording gage at site 13.9 mi upstream at datum 27.77 ft higher. Oct. 1, 1948, to Feb. 12, 1975, at site 5.6 mi upstream at datum 13.10 ft higher.

REMARKS.--No estimated daily discharges. Records good. Most of flow is releases from Lake Whitney (station 08092500) 9.0 mi upstream. The Brazos River at Whitney Dam (station 08092600) uses the discharge record at this station for publication of water-quality records. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--13 years (water years 1939-51) prior to regulation by Lake Whitney, 1,802 ft³/s (1,306,000 acre-ft/yr); 40 years (water-years 1952-91) regulated, unadjusted, 1,477 ft³/s (1,070,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,800 ft³/s May 18, 1949 (gage height, 31.03 ft), at site and datum then in use (Oct. 1, 1948, to Feb. 12, 1975); minimum daily, 0.4 ft³/s May 9, 1953. Maximum discharge since construction of Whitney Dam in 1951, 58,200 ft³/s May 28, 1957 (gage height, 27.34 ft), at site and datum in use Oct. 1, 1948, to Feb. 12, 1975).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1853, 45 ft May 9, 1922, at site and datum in use Oct. 1, 1948, to Feb. 12, 1975, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,900 ft³/s June 8 at 2015 hours (gage height, 19.21 ft); minimum daily, 23 ft³/s Dec. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	811	108	460	1460	892	70	400	791	864	711	834	524
2	1290	167	34	1070	398	41	830	852	874	700	879	1130
3	1850	58	277	1760	395	784	920	853	741	697	700	1310
4	1950	25	1430	1170	443	327	830	716	2950	704	657	891
5	1100	457	842	481	381	263	911	495	4170	681	680	883
6	696	808	563	46	110	264	853	564	5830	695	718	915
7	691	594	542	324	374	327	1990	636	12500	742	716	835
8	599	51	49	264	1060	566	2050	851	17800	638	704	606
9	702	395	23	43	578	506	1100	1330	17600	696	707	630
10	1210	48	559	263	390	345	835	1830	17700	705	691	655
11	1360	39	571	1250	724	290	859	2150	17700	704	236	773
12	1350	52	52	269	1000	280	865	2110	17600	807	481	774
13	1100	56	26	43	760	654	1100	2390	17600	255	664	654
14	1150	58	33	42	990	284	3020	4220	13500	35	2550	227
15	863	250	30	61	1140	259	3990	4280	8430	692	3730	35
16	689	438	30	411	1040	327	4000	4150	8390	894	3820	168
17	943	840	83	62	83	351	3210	4140	8400	1010	1920	360
18	1150	702	317	65	512	75	3040	2260	8410	1020	1630	619
19	681	874	82	85	535	28	3010	2090	8410	1040	1400	1110
20	554	874	35	78	787	24	1970	2240	6540	216	1300	241
21	875	879	319	561	679	59	1880	2090	4040	33	1610	47
22	790	922	328	579	80	199	2140	2080	3390	603	1900	345
23	440	614	69	484	45	89	780	2090	2210	789	2100	639
24	664	294	253	97	37	341	711	1600	2190	785	1620	1840
25	328	35	391	299	790	727	844	1160	2030	482	1570	1840
26	577	341	48	1060	921	367	855	1560	2020	744	1690	1840
27	730	424	862	1080	1000	274	701	735	1510	851	1720	1860
28	573	503	845	779	780	288	676	856	1190	209	1770	2180
29	647	584	269	958	---	619	822	826	1250	711	1760	1960
30	320	798	460	1140	---	842	889	859	598	266	1760	1900
31	273	---	2030	1090	---	1170	---	868	---	696	889	---
TOTAL	26956	12288	11912	17374	16924	11040	46081	53672	216437	19811	43406	27791
MEAN	870	410	384	560	604	356	1536	1731	7215	639	1400	926
MAX	1950	922	2030	1760	1140	1170	4000	4280	17800	1040	3820	2180
MIN	273	25	23	42	37	24	400	495	598	33	236	35
AC-FT	53470	24370	23630	34460	33570	21900	91400	106500	429300	39300	86100	55120

CAL YR 1990	TOTAL	1456440.6	MEAN	3990	MAX	26100	MIN	9.6	AC-FT	2889000
WTR YR 1991	TOTAL	503692	MEAN	1380	MAX	17800	MIN	23	AC-FT	999100

08093160 AQUILLA CREEK NEAR PEORIA, TX
(Reconnaissance Partial-record Station)

LOCATION.--Lat 31°58'40", long 97°14'44", Hill County, Hydrologic Unit 12060202, at bridge on State Highway 22 and 1.4 mi west of Peoria.

DRAINAGE AREA.--83.8 mi².

PERIOD OF RECORD.--Periodic discharge measurements: October 1983 to September 1984. Chemical and biochemical analyses: October 1984 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)
APR											
15...	1155	43	376	7.8	17.5	250	130	7.6	81	4.1	130
22...	1045	3.5	890	7.9	17.5	32	5.5	7.6	81	3.2	340
29...	1201	44	830	7.9	19.5	350	870	8.0	89	3.9	320
MAY											
20...	1037	63	265	7.7	23.5	130	150	8.8	105	4.5	100
JUN											
14...	1200	0.36	1220	8.4	25.5	25	5.9	6.0	74	0.5	470
25...	0907	0.01	1740	7.6	26.0	13	13	1.2	15	1.3	680
AUG											
14...	1208	1260	135	7.7	23.0	130	510	7.2	85	3.9	56
19...	1106	1.6	474	8.1	25.5	28	14	7.7	96	2.0	190

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
APR											
15...	33	46	3.5	19	0.7	6.7	97	51	15	0.30	7.8
22...	120	120	9.6	57	1	7.9	220	210	43	0.50	13
29...	150	110	9.7	53	1	8.6	170	160	58	0.40	12
MAY											
20...	21	37	2.8	8.8	0.4	5.8	83	25	12	0.30	6.5
JUN											
14...	190	160	18	81	2	6.0	280	260	80	0.50	12
25...	300	210	37	120	2	3.1	370	370	140	0.70	19
AUG											
14...	7	21	0.95	3.6	0.2	4.4	49	7.5	2.2	0.20	8.8
19...	45	67	5.5	22	0.7	6.3	150	74	19	0.40	9.4

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
APR											
15...	208	130	41	89	0.690	0.130	0.820	0.500	1.2	1.7	0.360
22...	593	143	34	109	1.20	0.200	1.40	0.140	0.76	0.90	0.270
29...	514	1890	350	1540	0.600	0.500	1.10	0.230	2.2	2.4	0.620
MAY											
20...	148	346	30	316	0.210	0.240	0.450	0.340	0.66	1.0	0.300
JUN											
14...	788	10	5	5	--	<0.010	0.200	0.020	0.68	0.70	0.020
25...	1130	42	7	35	--	<0.010	<0.050	0.110	0.79	0.90	0.100
AUG											
14...	78	58	58	0	1.88	0.020	1.90	0.020	1.3	1.3	0.420
19...	291	14	13	1	0.290	0.020	0.310	0.060	0.84	0.90	0.130

DATE	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
APR											
15...	0.260	15	3	43	<5	<1.0	<5	<3	<10	170	<10
22...	0.180	11	--	--	--	--	--	--	--	--	--
29...	0.480	52	3	100	<0.5	1.0	<5	<3	<10	12	<10
MAY											
20...	0.280	18	--	--	--	--	--	--	--	--	--
JUN											
14...	0.030	6.3	--	--	--	--	--	--	--	--	--
25...	0.090	7.0	5	120	0.6	<1.0	<5	5	<10	420	<10
AUG											
14...	0.050	21	4	21	<0.5	<1.0	<5	<3	<10	60	<10
19...	0.060	7.7	--	--	--	--	--	--	--	--	--

08093160 AQUILLA CREEK NEAR PEORIA, TX--Continued
(Reconnaissance Partial-record Station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
APR										
15...	6	5	<0.1	<10	<10	1	<1.0	200	8	5
22...	--	--	--	--	--	--	--	--	--	--
29...	21	<1	<0.1	20	<10	<1	<1.0	500	10	4
MAY										
20...	--	--	--	--	--	--	--	--	--	--
JUN										
14...	--	--	--	--	--	--	--	--	--	--
25...	86	1100	<0.1	10	<10	<1	<1.0	1200	<6	13
AUG										
14...	<4	2	<0.1	<10	<10	<1	<1.0	67	23	5
19...	--	--	--	--	--	--	--	--	--	--

08093250 HACKBERRY CREEK AT HILLSBORO, TX

LOCATION.--Lat 32°00'20", long 97°08'58", Hill County, Hydrologic Unit 12060202, 63 ft downstream from centerline of highway and 13 ft to right of right end of bridge on State Highway 22, 0.1 mi upstream from Little Hackberry Creek, and 1.2 mi west of county courthouse in Hillsboro.

DRAINAGE AREA.--57.9 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 546.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No known diversions above station. Crest-stage gage was removed Aug. 8, 1988.

AVERAGE DISCHARGE.--12 years (water years 1980-91), 24.9 ft³/s (18,040 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,050 ft³/s June 16, 1981 (gage height, 18.95 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1936, 18.3 ft in September 1936, from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 13	2200	*1,800	*14.22	May 14	2330	1,160	13.48
Apr. 19	0115	933	13.10	Aug. 14	1245	1,100	13.39

Minimum discharge, no flow for many days.

CORRECTIONS.--The maximum gage height published in WDR TX-88-2 was in error. The correct gage height is 16.27 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.12	3.0	5.7	1.1	.94	.63	.02	.00	.00
2	.00	.00	.00	.13	2.6	5.2	1.0	.69	.46	.00	.00	.00
3	.00	.00	.00	.13	2.8	4.1	1.2	.59	.63	.00	.00	1.2
4	.00	.00	.00	.12	36	3.7	.99	2.9	.94	.76	.00	.09
5	.00	.00	.00	.18	104	3.2	.88	4.2	.78	.47	.00	5.3
6	.00	.00	.00	1.1	33	3.1	1.0	1.8	.75	.24	.00	2.6
7	.00	.00	.00	.63	16	2.6	1.4	.94	.50	.14	.00	.58
8	.00	4.2	.00	.34	10	2.4	1.7	56	1.2	.03	.00	5.3
9	.00	2.6	.00	4.5	9.1	2.2	1.3	18	.94	.28	.00	1.4
10	.00	.07	.00	28	7.4	2.1	.69	4.5	.51	.23	.00	.35
11	.00	.00	.00	7.6	6.6	2.1	.87	2.8	.43	.05	.00	.28
12	.00	.00	.00	1.9	6.2	2.4	2.3	2.6	.39	.00	.47	.12
13	.00	.00	.00	1.0	6.1	2.1	634	1.8	.30	.00	1.3	.04
14	.00	.00	.00	2.0	5.2	2.0	205	225	.20	.00	373	.01
15	.00	.00	.00	85	4.4	2.2	13	337	.98	.00	91	.00
16	.00	.00	.00	6.4	4.5	2.8	6.1	21	.75	.00	24	.00
17	.00	.00	.02	2.7	4.9	3.0	6.8	8.0	.58	.00	9.1	.00
18	.00	.00	.02	128	5.9	2.7	80	5.2	.31	.00	3.9	.00
19	.00	.00	.01	91	5.2	2.2	203	4.0	.23	.00	1.6	3.6
20	.00	.00	.02	14	4.1	2.5	11	4.1	.16	.00	.49	1.0
21	.00	.00	.02	6.1	4.2	2.3	4.4	4.4	.09	.00	.20	.34
22	.00	4.5	.00	4.1	22	2.3	3.3	4.1	.05	.00	.10	.16
23	.00	.96	.00	3.3	10	2.0	3.0	3.2	.01	.00	.02	166
24	.00	.12	.00	6.8	7.2	1.6	2.4	3.4	.00	.00	.00	17
25	.00	.05	.03	6.3	6.1	1.5	2.4	42	.00	.00	.00	4.3
26	.00	.02	.17	3.9	5.0	1.6	3.6	8.6	.00	.00	.00	1.9
27	.00	.03	.44	3.3	4.8	2.1	2.5	3.0	.00	.00	.00	1.1
28	.00	.01	.18	2.9	4.4	2.1	1.7	2.2	.76	.00	.00	.71
29	.00	.00	.19	2.9	---	1.8	1.7	1.7	.31	.00	.00	.55
30	.00	.00	.25	2.8	---	1.5	1.3	1.4	.37	.00	.00	.43
31	.00	---	.17	3.5	---	1.2	---	.81	---	.00	.00	---
TOTAL	0.00	12.56	1.52	420.75	340.7	78.3	1199.63	776.87	13.26	2.22	505.18	214.36
MEAN	.000	.42	.049	13.6	12.2	2.53	40.0	25.1	.44	.072	16.3	7.15
MAX	.00	4.5	.44	128	104	5.7	634	337	1.2	.76	373	166
MIN	.00	.00	.00	.12	2.6	1.2	.69	.59	.00	.00	.00	.00
AC-FT	.00	25	3.0	835	676	155	2380	1540	26	4.4	1000	425

CAL YR 1990 TOTAL 20652.39 MEAN 56.6 MAX 3160 MIN .00 AC-FT 40960
WTR YR 1991 TOTAL 3565.35 MEAN 9.77 MAX 634 MIN .00 AC-FT 7070

08093250 HACKBERRY CREEK AT HILLSBORO, TX--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV											
27...	0815	0.03	2300	7.8	21.0	17	3.4	7.4	86	0.9	980
JAN											
08...	1055	0.35	1230	7.8	5.5	22	13	12.4	99	2.2	480
MAR											
05...	1225	3.4	590	8.2	22.5	14	13	7.5	89	1.3	210
APR											
15...	1322	8.8	567	8.0	23.0	60	75	7.8	93	1.6	210
22...	1300	3.1	577	8.1	22.0	23	12	8.3	97	2.4	220
MAY											
20...	1425	4.1	730	8.2	30.0	23	33	11.2	151	2.1	250
AUG											
14...	1615	940	150	7.8	24.0	22	550	7.2	87	5.5	110
19...	1746	0.90	390	8.3	31.5	22	57	9.0	124	2.4	130

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV											
27...	880	370	13	160	2	5.9	97	950	110	0.60	6.9
JAN											
08...	330	180	6.9	97	2	5.2	150	440	53	0.30	6.2
MAR											
05...	98	80	3.3	40	1	2.8	120	120	24	0.50	8.0
APR											
15...	92	79	2.7	37	1	3.9	120	140	17	0.70	9.7
22...	87	84	3.2	31	0.9	4.9	140	140	15	0.50	8.3
MAY											
20...	120	96	3.6	49	1	3.8	130	160	28	0.70	8.3
AUG											
14...	39	40	1.3	17	0.7	4.1	67	52	7.4	0.50	10
19...	48	49	1.9	24	0.9	4.7	82	87	12	0.70	11

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
NOV											
27...	1680	11	9	2	14.9	0.090	15.0	0.130	1.1	1.2	0.050
JAN											
08...	878	84	28	56	4.62	0.080	4.70	2.10	3.3	5.4	0.970
MAR											
05...	348	21	3	18	2.16	0.040	2.20	<0.010	--	0.60	0.060
APR											
15...	361	278	38	240	2.73	0.170	2.90	0.150	0.75	0.90	0.100
22...	368	156	36	120	1.42	0.180	1.60	0.160	0.74	0.90	0.180
MAY											
20...	430	88	20	68	4.70	0.100	4.80	0.070	1.8	1.9	0.110
AUG											
14...	173	51	51	0	0.470	0.020	0.490	0.030	1.3	1.3	0.500
19...	239	41	21	20	0.160	0.020	0.180	0.110	1.7	1.8	0.110

DATE	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
NOV											
27...	--	7.9	4	89	2	6.0	<20	<9	<30	17	<30
JAN											
08...	0.940	9.1	3	51	<0.5	<1.0	<5	<3	<10	8	<10
MAR											
05...	0.010	5.1	--	--	--	--	--	--	--	--	--
APR											
15...	0.090	9.9	6	59	<0.5	<1.0	<5	<3	<10	16	<10
22...	0.110	7.4	--	--	--	--	--	--	--	--	--
MAY											
20...	0.040	7.1	--	--	--	--	--	--	--	--	--
AUG											
14...	0.100	17	6	30	<0.5	<1.0	<5	<3	<10	40	<10
19...	<0.010	7.6	--	--	--	--	--	--	--	--	--

08093250 HACKBERRY CREEK AT HILLSBORO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV										
27...	53	4	0.1	<30	<30	1	<3.0	2700	<18	20
JAN										
08...	28	9	0.1	<10	<10	<1	<1.0	1400	<6	9
MAR										
05...	--	--	--	--	--	--	--	--	--	--
APR										
15...	10	5	<0.1	10	<10	1	<1.0	600	15	9
22...	--	--	--	--	--	--	--	--	--	--
MAY										
20...	--	--	--	--	--	--	--	--	--	--
AUG										
14...	5	2	<0.1	10	<10	<1	<1.0	250	23	<3
19...	--	--	--	--	--	--	--	--	--	--

08093260 HACKBERRY CREEK BELOW HILLSBORO, TX
(Low-flow partial-record station)

LOCATION.--Lat 31°59'43", long 97°08'38", Hill County, Hydrologic Unit 12060202, at abandoned steel truss bridge on county road, 0.7 mi downstream from Little Hackberry Creek, 0.8 mi downstream from State Highway 22, and 1.4 mi southwest of county courthouse in Hillsboro.

DRAINAGE AREA.--86.8 mi².

PERIOD OF RECORD.--Periodic discharge measurements: October 1979 to current year. Chemical and biochemical analyses: October 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV											
26...	1235	1.6	706	7.4	22.5	6	3.6	4.7	56	1.7	170
JAN											
08...	1400	1.8	720	7.8	10.5	12	26	6.2	56	16	200
MAR											
05...	1534	3.3	600	8.2	22.5	12	30	10.4	124	1.8	220
APR											
30...	1110	3.1	880	7.8	20.0	60	33	8.3	93	8.2	270
MAY											
21...	0823	5.8	765	7.9	23.5	23	36	7.4	89	6.3	270
JUN											
25...	1358	1.3	890	7.7	28.0	25	10	5.2	67	5.3	180
AUG											
20...	0900	1.8	630	7.8	26.0	23	74	4.7	59	7.0	180

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV											
26...	20	63	4.0	69	2	14	150	100	67	0.60	9.4
JAN											
08...	74	73	4.5	64	2	12	130	110	55	0.40	8.5
MAR											
05...	110	81	3.4	43	1	3.1	110	130	24	0.60	6.0
APR											
30...	72	99	4.3	67	2	7.4	190	160	55	0.60	8.7
MAY											
21...	86	100	4.2	52	1	6.4	180	130	35	0.60	8.2
JUN											
25...	0	63	5.0	83	3	18	220	100	57	0.80	11
AUG											
20...	31	67	3.3	52	2	8.6	150	100	42	0.70	12

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
NOV											
26...	420	<1	<1	--	--	<0.010	<0.100	1.70	1.8	3.5	4.90
JAN											
08...	404	40	40	0	7.99	0.010	8.00	1.00	5.7	6.7	6.40
MAR											
05...	356	62	15	47	2.15	0.050	2.20	0.060	0.74	0.80	0.140
APR											
30...	519	63	18	45	0.620	0.150	0.770	5.30	1.3	6.6	1.70
MAY											
21...	445	81	19	62	2.47	0.130	2.60	1.80	1.6	3.4	1.20
JUN											
25...	468	15	12	3	0.011	0.040	0.051	17.0	4.0	21	8.30
AUG											
20...	376	122	35	87	0.190	0.120	0.310	4.00	3.0	7.0	3.20

08093260 HACKBERRY CREEK BELOW HILLSBORO, TX--Continued
(Low-flow partial-record station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
NOV											
26...	0.710	11	1	31	<0.5	2.0	<5	<3	10	14	<10
JAN											
08...	4.00	>32	2	29	<0.5	<1.0	<5	<3	<10	91	<10
MAR											
05...	0.050	6.5	--	--	--	--	--	--	--	--	--
APR											
30...	1.10	10	3	58	<0.5	<1.0	<5	<3	10	13	<10
MAY											
21...	1.20	7.9	--	--	--	--	--	--	--	--	--
JUN											
25...	7.10	38	2	25	0.5	<1.0	<5	<3	<10	26	<10
AUG											
20...	2.60	11	--	--	--	--	--	--	--	--	--

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV										
26...	10	53	0.1	<10	<10	<1	<1.0	390	<6	19
JAN										
08...	13	28	<0.1	<10	<10	<1	<1.0	430	<6	35
MAR										
05...	--	--	--	--	--	--	--	--	--	--
APR										
30...	18	85	<0.1	<10	<10	<1	<1.0	760	6	16
MAY										
21...	--	--	--	--	--	--	--	--	--	--
JUN										
25...	14	58	<0.1	<10	<10	<1	<1.0	380	<6	17
AUG										
20...	--	--	--	--	--	--	--	--	--	--

08093350 AQUILLA LAKE ABOVE AQUILLA, TX

LOCATION.--Lat 31°53'59", long 97°12'09", Hill County, Hydrologic Unit 12060202, 450 ft upstream from Farm Road 310 that runs along top of Aquilla Dam on Aquilla Creek, and 3.4 miles north-northeast of Aquilla.

DRAINAGE AREA.--255 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by an earthfill dam with a crest length of 11,890 ft and a top width of 38.0 ft. A reinforced concrete inlet structure, near center of dam, houses the flood-control gates and operating equipment. Closure of the dam began Mar. 20, 1982, and the dam was completed in January 1983. The dam was built and is owned by the U.S. Army Corps of Engineers. Deliberate impoundment began Apr. 29, 1983. The lake was built for water supply, flood control, and recreation purposes. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-ft)
Top of dam	582.5	-
Spillway crest (uncontrolled)	564.5	213,700
Top of flood-control pool	556.0	146,000
Top of conservation pool	537.5	52,400
Invert, lowest gated outlet	503.0	932

COOPERATION.--Area and capacity tables by the U.S. Army Corps of Engineers. Records of elevations and contents provided by the U.S. Army Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed contents, 105,500 acre-ft, May 8, 1990 (elevation, 549.60 ft); minimum observed, 4,600 acre-ft Oct. 6-10, 1983 (elevation, 511.31 ft Oct. 6, 7, 9, 10 and 511.30 ft Oct. 8).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 58,410 acre-ft Aug. 15 (elevation, 539.27 ft); minimum daily, 47,000 acre-ft Dec. 24-25 (elevation, 535.80 ft).

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

535.0	44,620	537.0	50,740	539.0	57,450
536.0	47,610	538.0	54,020	540.0	61,040

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48470	47270	47760	47120	49560	50870	50170	54930	54930	52260	50450	54900
2	48350	47210	47700	47210	49560	50960	50070	54800	54900	52200	50390	54730
3	48380	47210	47670	47210	49560	50800	50130	54800	54930	52300	50290	54590
4	48280	47430	47610	47180	49940	50800	50130	55070	54860	52230	50200	54590
5	48250	47300	47580	47180	50390	50770	50100	55000	54760	52160	50100	54490
6	48190	47300	47580	47330	50550	50800	50070	54900	54660	52070	50040	54420
7	48190	47300	47490	47300	50580	50770	50070	54860	54560	52000	49940	54390
8	48190	47640	47460	47270	50610	50710	50010	55580	54490	51900	49850	54260
9	48250	47640	47400	47610	50640	50640	50040	55650	54420	51810	49850	54120
10	48160	47610	47400	47880	50640	50610	49980	55510	54360	51710	49820	53950
11	48070	47580	47330	47920	50680	50480	50040	55270	54260	51610	50040	53820
12	48010	47580	47360	47920	50640	50580	50040	55040	54120	51480	50200	53690
13	47950	47550	47360	47850	50680	50520	52160	54830	53990	51450	50770	53580
14	47920	47520	47330	47980	50680	50480	54860	56340	53850	51350	57450	53420
15	47880	47520	47330	48280	50610	50520	54930	57100	53920	51320	58410	53350
16	47790	47520	47300	48320	50550	50480	54930	57000	53850	51290	58230	53250
17	47950	47460	47300	48350	50610	50520	55040	56790	53750	51220	58020	53190
18	47850	47460	47300	48910	50710	50480	55270	56620	53690	51090	57770	53120
19	47730	47460	47270	49310	50680	50420	55820	56790	53580	51030	57520	52860
20	47700	47430	47330	49470	50610	50420	55750	56680	53450	50900	57210	52690
21	47730	47460	47270	49440	50710	50450	55580	56480	53320	50800	56930	52560
22	47670	47980	47270	49410	50840	50450	55580	56270	53190	50740	56930	52530
23	47610	47950	47090	49470	50840	50450	55480	56060	53090	50680	56680	53150
24	47580	47950	47000	49500	50900	50420	55410	55860	52920	50800	56410	53220
25	47520	47880	47000	49560	50870	50320	55340	56370	52790	50800	56130	53050
26	47460	47880	47120	49530	50840	50320	55310	56300	52690	50740	55860	52950
27	47460	47950	47120	49560	50800	50420	55270	56100	52590	50680	55580	52820
28	47430	47880	47090	49560	50800	50420	55200	55820	52460	50710	55340	52720
29	47400	47820	47180	49560	---	50360	55140	55580	52390	50680	55170	52590
30	47360	47760	47210	49600	---	50290	55100	55240	52330	50610	55200	52530
31	47330	---	47150	49600	---	50230	---	55040	---	50550	55070	---
MAX	48470	47980	47760	49600	50900	50960	55820	57100	54930	52300	58410	54900
MIN	47330	47210	47000	47120	49560	50230	49980	54800	52330	50550	49820	52530
(†)	535.92	536.05	535.85	536.39	537.02	536.84	538.32	538.30	537.49	536.94	538.31	537.55
(ϕ)	-1200	+430	-610	+2450	+1200	-570	+4870	-60	-2710	-1780	+4520	-2540

CAL YR 1990 MAX 105500 MIN 47000 (ϕ) -950
WTR YR 1991 MAX 58410 MIN 47000 (ϕ) +4000

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

WATER-QUALITY RECORDS

LOCATION.--Lat 31°53'58", long 97°12'26", Hill County, Hydrologic Unit 12060202, at Aquilla Dam on Aquilla Creek at Farm Road 310 and 3.3 mi north-northeast of Aquilla.

PERIOD OF RECORD.--Chemical and biochemical analyses: February 1984 to current year.

315354097125701 - AQUILLA LAKE SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
14...	1509	1.00	377	8.4	14.5	9.6	96
14...	1511	10.0	374	8.3	14.5	9.0	90
14...	1514	20.0	375	8.3	14.5	8.9	89
14...	1517	34.0	376	8.3	14.5	9.0	90
MAY							
23...	1253	1.00	375	8.2	26.5	7.6	96
23...	1256	10.0	378	8.1	25.0	7.0	86
23...	1259	20.0	382	7.6	23.5	4.3	52
23...	1302	26.0	388	7.3	22.5	1.4	16
AUG							
23...	1105	1.00	349	8.2	29.0	7.3	96
23...	1108	10.0	349	8.1	28.5	6.6	86
23...	1110	20.0	316	7.3	26.5	0	0
23...	1113	34.0	271	7.3	25.5	0	0

315358097122601 - AQUILLA LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	RESERVOIR STORAGE (AC-FT)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
MAR												
14...	1412	50500	1.00	376	8.4	15.0	0.90	9.6	97	K5	K3	150
14...	1417	--	10.0	376	8.4	14.5	--	9.3	93	--	--	--
14...	1423	--	20.0	376	8.3	14.5	--	9.0	90	--	--	--
14...	1428	--	30.0	378	8.3	14.5	--	8.9	89	--	--	--
14...	1433	--	44.0	375	8.3	14.5	--	9.0	90	--	--	150
MAY												
23...	1136	56000	1.00	377	8.2	26.0	1.40	7.7	97	<1	<1	140
23...	1141	--	10.0	380	8.0	25.0	--	6.5	80	--	--	--
23...	1146	--	20.0	383	7.6	24.0	--	4.3	52	--	--	--
23...	1152	--	30.0	390	7.2	22.0	--	0.8	9	--	--	--
23...	1158	--	45.0	399	7.2	21.0	--	0.1	1	--	--	140
AUG												
23...	1012	56700	1.00	351	8.1	29.0	1.20	6.9	91	<1	K2	120
23...	1016	--	10.0	345	7.5	28.0	--	3.3	43	--	--	--
23...	1020	--	20.0	309	7.3	26.0	--	0	0	--	--	--
23...	1024	--	30.0	284	7.3	25.5	--	0	0	--	--	--
23...	1028	--	40.0	292	7.2	25.5	--	0	0	--	--	--
23...	1033	--	46.0	471	7.0	24.0	--	0	0	--	--	170

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
MAR											
14...	28	54	3.2	18	0.6	5.2	120	49	13	0.30	2.8
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	26	53	3.1	18	0.7	5.2	120	49	13	0.30	2.8
MAY											
23...	30	52	3.2	20	0.7	5.1	110	53	16	0.40	3.2
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	14	51	3.6	22	0.8	4.9	130	48	14	0.40	5.4
AUG											
23...	19	42	2.9	20	0.8	5.4	98	55	18	0.50	5.6
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	42	61	3.8	21	0.7	5.7	130	82	19	0.40	13

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315358097122601 - AQUILLA LAKE SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAR											
14...	217	0.310	0.010	0.320	0.010	0.59	0.60	0.030	<0.010	4	2
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	216	0.320	0.020	0.340	0.020	0.78	0.80	0.070	<0.010	<3	17
MAY											
23...	221	0.310	0.040	0.350	0.020	0.58	0.60	0.010	<0.010	4	<1
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	0.420	0.030	0.450	0.040	0.46	0.50	0.010	<0.010	10	<10
23...	--	--	--	--	--	--	--	--	--	--	--
23...	227	0.360	0.060	0.420	0.120	0.48	0.60	0.030	0.020	130	1100
AUG											
23...	208	--	<0.010	<0.050	0.110	0.49	0.60	0.030	<0.010	<3	4
23...	--	--	<0.010	0.051	0.020	0.48	0.50	0.030	<0.010	60	20
23...	--	0.220	0.080	0.300	0.120	0.48	0.60	0.050	<0.010	40	240
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	291	--	0.020	<0.050	2.70	1.3	4.0	0.200	0.040	2600	6500

315402097115401 - AQUILLA LAKE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
MAR							
14...	1447	1.00	378	8.4	14.5	9.6	96
14...	1449	10.0	376	8.4	14.5	9.4	94
14...	1452	20.0	374	8.3	14.5	9.1	91
14...	1455	34.0	376	8.3	14.5	9.0	90
MAY							
23...	1233	1.00	374	8.3	26.5	7.9	100
23...	1236	10.0	378	8.2	25.5	7.5	93
23...	1239	20.0	383	7.5	23.5	3.5	42
23...	1242	33.0	390	7.3	21.5	0.9	10
AUG							
23...	1042	1.00	350	8.1	29.0	7.0	92
23...	1047	10.0	350	7.7	28.0	4.5	58
23...	1050	20.0	317	7.3	26.5	0	0
23...	1054	32.0	295	7.3	26.0	0	0

315601097111501 - AQUILLA LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)
MAR											
14...	1527	1.00	378	8.4	14.5	0.70	9.5	94	--	--	--
14...	1530	10.0	375	8.3	14.5	--	9.0	89	--	--	--
14...	1534	20.0	376	8.3	14.5	--	8.9	88	--	--	--
14...	1537	30.0	380	8.3	14.0	--	8.7	85	--	--	--
14...	1540	35.0	378	8.3	14.0	--	8.7	85	--	--	--
MAY											
23...	1316	1.00	368	8.4	27.5	1.20	9.5	123	140	32	51
23...	1322	10.0	380	7.8	24.5	--	5.6	68	--	--	--
23...	1328	20.0	384	7.3	23.0	--	0.1	1	--	--	--
23...	1336	30.0	383	7.3	23.0	--	0.3	4	150	37	55
AUG											
23...	1127	1.00	349	8.1	28.5	1.00	6.5	85	120	19	42
23...	1131	10.0	349	7.9	28.0	--	5.9	76	--	--	--
23...	1136	20.0	340	7.2	27.0	--	0	0	--	--	--
23...	1142	35.0	320	7.3	26.0	--	0	0	110	15	42

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315601097111501 - AQUILLA LAKE SITE BC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAR										
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
MAY										
23...	3.0	20	0.7	4.9	110	53	15	0.40	3.5	216
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	2.8	21	0.7	4.9	110	52	13	0.40	6.7	223
AUG										
23...	2.9	20	0.8	5.3	98	55	17	0.50	5.3	207
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	2.1	15	0.6	4.8	99	44	13	0.40	7.4	188

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAR										
14...	0.340	0.010	0.350	0.060	0.44	0.50	0.020	<0.010	10	<10
14...	--	--	--	--	--	--	--	--	--	--
14...	0.340	0.010	0.350	0.050	0.55	0.60	0.030	<0.010	<10	<10
14...	--	--	--	--	--	--	--	--	--	--
14...	0.340	0.020	0.360	0.100	0.60	0.70	0.040	<0.010	10	20
MAY										
23...	0.430	0.040	0.470	0.020	0.48	0.50	<0.010	<0.010	9	31
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	0.960	0.140	1.10	0.330	0.57	0.90	0.050	0.040	140	290
AUG										
23...	--	<0.010	<0.050	0.110	0.29	0.40	0.030	<0.010	3	1
23...	0.160	0.050	0.210	0.080	0.62	0.70	0.050	<0.010	20	190
23...	--	<0.010	<0.050	<0.010	--	0.60	0.020	<0.010	40	30
23...	--	<0.010	<0.050	0.110	0.59	0.70	0.030	<0.010	38	330

315649097103701 - AQUILLA LAKE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
MAR											
14...	1034	1.00	420	8.2	15.0	0.50	8.4	84	K1	K41	160
14...	1039	10.0	438	8.3	14.5	--	8.7	86	--	--	--
14...	1044	23.0	450	8.3	14.5	--	8.6	85	--	--	170
MAY											
23...	1359	1.00	367	8.3	28.0	0.90	9.0	117	<2	<2	140
23...	1403	10.0	384	7.6	24.5	--	4.3	53	--	--	--
23...	1408	15.0	387	7.3	23.5	--	0.2	2	--	--	--
23...	1415	20.0	386	7.3	23.0	--	0	0	--	--	--
23...	1420	25.0	388	7.3	23.0	--	0	0	--	--	150
AUG											
23...	1208	1.00	346	8.1	29.5	0.61	6.3	84	K4	K3	120
23...	1212	10.0	356	7.2	27.5	--	0	0	--	--	--
23...	1216	20.0	351	7.2	26.5	--	0	0	--	--	--
23...	1221	26.0	351	7.3	26.5	--	0	0	--	--	130

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315649097103701 - AQUILLA LAKE SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
MAR											
14...	34	58	3.3	22	0.8	5.1	120	57	14	0.30	2.8
14...	--	--	--	--	--	--	--	--	--	--	--
14...	42	61	3.2	25	0.8	5.4	120	71	16	0.30	2.6
MAY											
23...	35	50	3.3	19	0.7	5.1	100	54	15	0.40	4.1
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	34	56	2.9	19	0.7	4.9	120	50	11	0.40	6.5
AUG											
23...	20	42	2.8	20	0.8	5.5	96	54	17	0.40	5.5
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	20	47	2.6	17	0.7	5.2	110	51	14	0.50	7.7

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR											
14...	237	0.940	0.020	0.960	0.060	0.74	0.80	0.020	<0.010	<3	4
14...	--	1.17	0.030	1.20	0.100	0.70	0.80	0.040	<0.010	10	<10
14...	259	1.27	0.030	1.30	0.110	0.79	0.90	0.050	<0.010	3	5
MAY											
23...	213	0.610	0.040	0.650	0.020	0.48	0.50	<0.010	<0.010	7	9
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	222	0.820	0.140	0.960	0.290	0.61	0.90	0.050	0.040	95	260
AUG											
23...	205	0.00	<0.010	<0.050	0.110	0.39	0.50	0.060	<0.010	<3	13
23...	--	0.070	0.030	0.100	0.250	0.55	0.80	0.040	<0.010	<10	220
23...	--	0.160	0.040	0.200	0.290	0.71	1.0	0.060	<0.010	20	280
23...	210	0.160	0.030	0.190	0.320	0.58	0.90	0.060	<0.010	7	280

315518097123401 - AQUILLA LAKE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)
MAR											
14...	1329	1.00	375	8.3	15.0	0.60	8.3	83	--	--	--
14...	1333	10.0	374	8.3	14.5	--	8.9	88	--	--	--
14...	1336	20.0	374	8.3	14.5	--	8.8	87	--	--	--
14...	1341	34.0	378	8.2	14.5	--	8.7	86	--	--	--
MAY											
23...	1448	1.00	372	8.3	28.0	1.00	7.8	102	140	31	51
23...	1453	10.0	375	8.1	25.5	--	6.8	85	--	--	--
23...	1458	20.0	385	7.4	23.5	--	1.7	20	--	--	--
23...	1502	30.0	402	7.3	22.0	--	0	0	--	--	--
23...	1506	35.0	412	7.3	22.0	--	0.4	5	160	31	59
AUG											
23...	1255	1.00	347	8.2	29.0	--	7.3	96	120	22	42
23...	1259	10.0	339	7.3	27.5	--	0	0	--	--	--
23...	1303	20.0	299	7.3	26.0	--	0	0	--	--	--
23...	1307	30.0	270	7.2	25.5	--	0	0	--	--	--
23...	1311	36.0	273	7.2	25.5	--	0	0	110	5	39

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315518097123401 - AQUILLA LAKE SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
MAR										
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
MAY										
23...	3.3	21	0.8	5.3	110	51	14	0.40	3.2	215
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	3.6	22	0.8	5.1	130	60	15	0.40	5.7	251
AUG										
23...	3.1	20	0.8	5.3	96	54	17	0.40	5.2	205
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	2.3	10	0.4	5.1	100	28	8.6	0.10	8.4	163

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
14...	0.280	0.010	0.290	<0.010	--	0.50	0.030	<0.010	<10	<10
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	0.270	0.010	0.280	0.040	0.66	0.70	0.050	<0.010	20	10
MAY										
23...	0.320	0.040	0.360	0.020	0.58	0.60	<0.010	<0.010	11	46
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	0.190	0.040	0.230	0.380	0.62	1.0	0.050	0.010	62	1100
AUG										
23...	--	<0.010	<0.050	<0.010	--	0.60	0.020	<0.010	<3	16
23...	--	0.010	<0.050	0.020	0.58	0.60	0.030	<0.010	40	150
23...	--	0.010	<0.050	0.240	0.46	0.70	0.060	<0.010	110	380
23...	--	--	--	--	--	--	--	--	--	--
23...	--	0.030	<0.050	0.430	0.67	1.1	0.170	0.030	360	440

315748097144901 - AQUILLA LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
MAR											
14...	1233	1.00	386	8.2	15.5	0.50	8.4	85	K3	K7	150
14...	1238	10.0	398	8.1	15.0	--	7.8	78	--	--	--
14...	1244	17.0	395	8.1	15.0	--	7.8	78	--	--	160
MAY											
23...	1548	1.00	348	8.5	29.5	0.60	10.6	142	<2	2	130
23...	1556	10.0	355	7.4	25.5	--	2.0	25	--	--	--
23...	1603	17.0	336	7.3	24.5	--	0.3	4	--	--	140
AUG											
23...	1341	1.00	338	8.2	31.0	0.48	6.8	93	32	K5	120
23...	1346	10.0	336	7.4	29.5	--	2.3	31	--	--	--
23...	1353	21.0	334	7.2	28.0	--	0	0	--	--	120

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315748097144901 - AQUILLA LAKE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
MAR											
14...	25	54	3.7	19	0.7	5.4	120	52	15	0.30	1.2
14...	--	--	--	--	--	--	--	--	--	--	--
14...	34	58	3.6	19	0.7	5.2	130	54	13	0.30	0.80
MAY											
23...	27	46	3.4	20	0.8	5.5	100	56	15	0.40	3.2
23...	--	--	--	--	--	--	--	--	--	--	--
23...	6	51	3.2	15	0.6	6.0	130	37	12	0.30	6.7
AUG											
23...	24	42	2.9	19	0.8	5.5	93	53	17	0.40	5.3
23...	--	--	--	--	--	--	--	--	--	--	--
23...	7	44	3.0	15	0.6	5.6	120	38	14	0.40	7.3

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR											
14...	226	0.140	0.010	0.150	<0.010	--	0.70	0.050	<0.010	<3	12
14...	--	--	--	--	--	--	--	--	--	--	--
14...	229	0.130	0.020	0.150	0.140	0.86	1.0	0.050	<0.010	8	21
MAY											
23...	211	0.060	0.040	0.100	0.020	0.58	0.60	0.040	<0.010	20	9
23...	--	0.180	0.120	0.300	0.210	0.59	0.80	0.060	0.050	120	100
23...	212	0.150	0.150	0.300	0.290	0.71	1.0	0.080	0.070	130	180
AUG											
23...	201	--	<0.010	<0.050	<0.010	--	0.70	0.050	<0.010	7	24
23...	--	--	<0.010	<0.050	0.080	0.62	0.70	0.040	<0.010	<10	170
23...	197	--	0.020	<0.050	0.260	0.84	1.1	0.060	<0.010	120	450

Aquilla Lake AC (315358097122601)

Phytoplankton Analyses October 1990 to September 1991

Date	3-14-91
Time	1413
TOTAL CELLS/mL	790,706
NUMBER OF SPECIES	32
DEPTH COLLECTED (ft.)	1.4

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Cyclotella meneghiniana	156
Cyclotella ocellata	311
Cyclotella operculata	156
Melosira granulata	2,100
Melosira italica	9,491
Stephanodiscus niagarae	856
Order Pennales	
Achnanthes minutissima	251
Gomphonema sp.	251
Gyrosigma acuminatum	251
Navicula laevissima	503
Nitzschia acicularis	1,508
Nitzschia palea	251
Synedra delicatissima	251
CHLOROPHYTA (Green algae)	
Ankistrodesmus falcatus	6,535
Chlamydomonas sp.	1,634
Chlorella ellipsiodea	11,436
Chlorococcum humicola	9,802
Chodatella quadriseta	1,634
Closterium sp.	1,634
Crucigena rectangularis	6,535
Oocystis lacustris	6,535
Pediastrum simplex	9,802
Selenastrum minutum	1,634
Scenedesmus dimorphus	6,535
Scenedesmus quadricauda var. *longispina*	19,604
CHRYSOPHYA (Golden-brown algae)	
Unknown flagellate	1,634
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	76,783
Aphanothece nidulans	596,295
Chroococcus multicoloratus	1,634
Chroococcus sp.	6,535
EUGLENOPHYTA (Euglenoids)	
Phacus sp.	6,353
CRYPTOPHYTA (Cryptomonads)	
Cryptomonas erosa	1,634

Aquilla Lake CC (315649097103701)

Phytoplankton Analyses October 1990 to September 1991

Date	3-14-91
Time	1035
TOTAL CELLS/mL	1,917,944
NUMBER OF SPECIES	26
DEPTH COLLECTED (ft.)	0.8

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Cyclotella meneghiniana	422
Cyclotella ocellata	211
Cyclotella operculata	422
Melosira granulata	1,686
Melosira italica	22,555
Stephanodiscus niagarae	843
Order Pennales	
Achnanthes minutissima	871
Navicula lanceolata	1,307
Nitzschia acicularis	2,614
Nitzschia palea	871
Synedra delicatissima	871
CHLOROPHYTA (Green algae)	
Ankistrodesmus falcatus	9,802
Chlorella ellipsoidea	6,535
Chlorococcum humicola	9,802
Chodatella quadriseta	11,436
Crucigena rectangularis	45,743
Selenastrum minutum	1,634
Scenedesmus adundans var. *brevicauda*	3,267
Scenedesmus quadricauda var. *longispina*	14,703
Tetraëdron caudatum	1,634
CHRYSOPHYTA (Golden-brown algae)	
Unknown flagellate	8,168
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	416,589
Aphanocapsa elachista	142,131
Aphanothece nidulans	1,204,025
Chroococcus sp.	8,168
EUGLENOPHYTA (Euglenoids)	
Phacus sp.	1,634

Aquilla Lake EC (315748097144901)

Phytoplankton Analyses October 1990 to September 1991

Date	3-14-91
Time	1234
TOTAL CELLS/mL	256,489
NUMBER OF SPECIES	16
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Melosira granulata	1,392
Melosira italica	17,097
Stephanodiscus niagarae	298
Order Pennales	
Navicula lanceolata	613
Nitzschia acicularis	1,225
Synedra delicatissima	613
CHLOROPHYTA (Green algae)	
Ankistrodesmus falcatus	3,267
Chamydomonas sp.	1,634
Chlorella ellipsiodea	1,634
Chlorococcum humicola	4,901
Scenedesmus quadricauda var. *longispina*	1,634
Tetraëdron caudatum	817
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	70,248
Aphanothece nidulans	142,947
Chroococcus sp.	7,352
CRYPTOPHYTA (Cryptomonads)	
Cryptomonas erosa	817

Aquilla Lake AC (315358097122601)

Phytoplankton Analyses October 1990 to September 1991

Date	5-23-91
Time	1138
TOTAL CELLS/mL	341,440
NUMBER OF SPECIES	14
DEPTH COLLECTED (ft.)	2.3

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Aulacoseira granulata	13,367
Aulacoseira italica	891
Cyclotella ocellata	891
Cyclotella operculata	891
Stephanodiscus sp.	297
Order Pennales	
Asterionella formosa	1,634
CHLOROPHYTA (Green algae)	
Chlamydomonas sp.	1,634
Chlorella ellipsoidea	6,535
Chorococcum humicola	1,634
Dictyosphaerium pulchellum	16,337
Oocystis pusilla	9,802
Selenastrum minutum	1,634
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	277,726
Chroococcus sp.	8,168

Aquilla Lake EC (315748097144901)

Phytoplankton Analyses October 1990 to September 1991

Date	5-23-91
Time	1550
TOTAL CELLS/mL	504,810
NUMBER OF SPECIES	25
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Aulacoseira granulata	13,147
Aulacoseira italica	5,104
Cyclotella meneghiniana	155
Cyclotella ocellata	2,784
Cyclotella operculata	4,795
Stephanodiscus sp.	155
Order Pennales	
Nitzschia acicularis	5,228
Nitzschia palea	1,307
CHLOROPHYTA (Green algae)	
Carteria sp.	1,634
Chamydomonas globosa	13,069
Chlorella ellipsoidea	8,168
Chlorococcum humicola	21,238
Dictyosphaerium pulchellum	4,901
Franceia ovalis	1,634
Oocystis pusilla	6,535
Selenastrum minutum	1,634
Tetraëdron caudatum	1,634
Tetraëdron minimum	1,634
CHRYSOPHYTA (Golden-brown algae)	
Mallomonas sp.	3,267
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	287,528
Aphanothece nidulans	81,684
Chroococcus limneticus	26,139
EUGLENOPHYTA (Euglenoids)	
Euglena sp.	4,901
CRYPTOPHYTA (Cryptomonads)	
Cryptomonas erosa	4,901
Rhodomonas minuta	1,634

Aquilla Lake AC (315358097122601)

Phytoplankton Analyses October 1990 to September 1991

Date	8-23-91
Time	1012
TOTAL CELLS/mL	165,277
NUMBER OF SPECIES	12
DEPTH COLLECTED (ft.)	1.9

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Cyclotella ocellata	331
CHLOROPHYTA (Green algae)	
Scenedesmus bijuga	661
CYANOPHYTA (Blue-green algae)	
Anabaena sp. 1	2,975
Anabaena sp. 2	2,644
Aphanocapsa elachista var. *planctonica*	101,810
Aphanothece nidulans	2,314
Chroococcus varius	2,314
Dactylococcopsis rhapidiodes	992
Lyngbya limnetica	19,172
Merismopedia elegans	14,544
Merismopedia minima	5,289
Raphidiopsis curvata	12,231

08093360 AQUILLA CREEK ABOVE AQUILLA, TX

LOCATION.--Lat 31°53'43", long 97°12'10", Hill County, Hydrologic Unit 12060202, on right bank of excavated outlet channel, 0.2 mi downstream from Aquilla Dam on Aquilla Creek and Farm Road 310 (on top of Aquilla Dam), and 3.3 mi north-northeast of Aquilla.

DRAINAGE AREA.--255 mi².

PERIOD OF RECORD.--April 1982 to current year (operated as low-water record only). Prior to Mar. 16, 1982, operated as a full range discharge station.

GAGE.--Water-stage recorder and concrete weir with sharp-crested, 90 degree v-notch weir section for low-flows. Datum of gage is 478.71 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Mar. 15, 1982, at site about 0.2 mi to left of current location at same datum.

REMARKS.--No estimated daily discharges. Records good. No daily discharges above 135 ft³/s occurred during the year. Flow is completely regulated by Aquilla Lake, 0.2 mi upstrem (station 08093350). Deliberate impoundment of water at Aquilla Lake began Apr. 19, 1983. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,100 ft³/s June 16, 1981 (gage height, 26.98 ft); no flow for many days in 1980-86.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 125 ft³/s May 14 at 1500 hours (gage height, 8.06 ft); minimum daily, 0.17 ft³/s on oct. 7, 8, 20, 23, July 9-15, 23, 30, and Aug. 3, 4, and 6-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	.19	.19	.23	.21	.27	.22	30	29	.18	.18	60
2	.18	.20	.19	.24	.21	.24	.22	30	29	.18	.18	60
3	.18	.20	.19	.24	.27	.22	.22	30	29	.19	.17	59
4	.18	.31	.19	.20	.51	.22	.22	30	29	.20	.17	58
5	.18	.21	.19	.20	.34	.21	.22	30	29	.18	.16	57
6	.18	.20	.20	.29	.25	.22	.26	30	29	.18	.17	58
7	.17	.21	.19	.20	.23	.22	.25	30	29	.18	.17	59
8	.17	.46	.19	.22	.22	.22	.22	30	29	.18	.17	58
9	.33	.30	.18	.50	.21	.22	.22	30	29	.17	.17	56
10	.20	.22	.18	.43	.21	.21	.21	82	29	.17	.23	56
11	.18	.20	.18	.23	.20	.22	.24	117	29	.17	.47	41
12	.19	.20	.18	.20	.22	.22	.26	113	29	.17	.26	28
13	.18	.20	.18	.20	.25	.22	.54	113	29	.17	.30	28
14	.18	.20	.18	.21	.36	.21	.27	115	32	.17	15	28
15	.18	.19	.19	.38	.30	.22	10	115	31	.17	67	28
16	.18	.19	.19	.39	.21	.23	29	117	29	.19	98	28
17	.21	.19	.19	.40	.23	.23	30	117	29	.19	98	28
18	.20	.19	.20	.58	.24	.22	30	117	29	1.4	98	27
19	.18	.19	.19	.28	.21	.21	29	117	15	.22	98	27
20	.17	.19	.18	.21	.21	.22	29	117	15	.18	99	27
21	.23	.19	.18	.19	.25	.22	29	117	27	.18	100	27
22	.19	.62	.20	.19	.33	.23	30	117	27	.19	100	27
23	.17	.23	.20	.20	.24	.21	30	117	27	.17	100	27
24	.18	.20	.21	.26	.22	.20	30	117	27	.21	99	27
25	.18	.19	.23	.22	.22	.22	30	117	27	.33	98	27
26	.18	.20	.32	.20	.22	.22	30	118	25	.23	98	27
27	.18	.20	.30	.21	.22	.23	30	121	12	.19	98	28
28	.18	.28	.31	.21	.23	.23	30	121	.22	.31	77	28
29	.18	.19	.27	.21	---	.22	30	118	.18	.21	60	28
30	.18	.19	.22	.24	---	.22	30	115	.18	.17	60	19
31	.18	---	.25	.21	---	.22	---	68	---	.18	60	---
TOTAL	5.83	6.93	6.44	8.17	7.02	6.87	459.57	2756	729.58	7.21	1525.80	1136
MEAN	.19	.23	.21	.26	.25	.22	15.3	88.9	24.3	.23	49.2	37.9
MAX	.33	.62	.32	.58	.51	.27	30	121	32	1.4	100	60
MIN	.17	.19	.18	.19	.20	.20	.21	30	.18	.17	.16	19
AC-FT	12	14	13	16	14	14	912	5470	1450	14	3030	2250

CAL YR 1990	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---		
WTR YR 1991	TOTAL	6655.42	MEAN	18.2	MAX	121	MIN	.16	AC-FT	13200		

08093500 AQUILLA CREEK NEAR AQUILLA, TX

LOCATION.--Lat 31°50'40", long 97°12'04", Hill County, Hydrologic Unit 12060202, at downstream side of highway embankment near left end of bridge on Farm Road 1304, 1.0 mi southeast of Aquilla, 1.2 mi downstream from Cobb Creek, 4.7 mi below Aquilla Dam, and 18.2 mi upstream from mouth.

DRAINAGE AREA.--308 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1938 to current year. Records of daily discharges for December 1924 to August 1925, published in WSP 608, are unreliable, and should not be used.

REVISED RECORDS.--WSP 1712: 1944(M), 1957-58. WDR TX-76-2: Drainage area. See PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 451.48 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since May 1983, flow from 252 mi² above this station has been regulated by Aquilla Lake, 4.7 mi upstream (on Aquilla Creek). Deliberate impoundment of water began Apr. 24, 1983.

AVERAGE DISCHARGE.--43 years (water years 1940-82), prior to regulation, 119 ft³/s (5.25 in/yr), 86,220 acre-ft/yr; 9 years (water years 1983-91), regulated, unadjusted, 72.8 ft³/s (52,740 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,300 ft³/s June 16, 1981 (gage height, 31.35 ft), from rating curve extended above 25,900 ft³/s on basis of slope-area measurement of 74,200 ft³/s, adjusted to gage site; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 31, 1887, reached a stage of 34 ft, from information by local resident. Flood of Sept. 27, 1936, was the highest since 1887 and reached a stage of 33 ft, from floodmark; discharge 84,500 ft³/s (by slope-area measurements at site 9 mi downstream) and 74,200 ft³/s (adjusted to gage site).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,600 ft³/s May 14 at 2345 hours (gage height, 21.55 ft); minimum daily, 0.15 ft³/s Oct. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.19	.17	.64	.73	6.4	8.7	11	29	28	1.3	1.2	57
2	.18	.17	.64	.72	5.9	11	10	29	28	1.3	1.2	58
3	.17	.19	.65	.73	6.5	6.8	9.4	29	30	1.2	1.2	58
4	.19	.17	.65	.72	46	5.5	8.6	65	29	1.2	1.1	66
5	.18	.25	.68	.70	127	5.3	7.5	88	29	1.1	1.2	64
6	.18	.25	.69	.73	42	4.6	8.8	30	29	1.2	1.2	60
7	.19	.25	.68	.91	22	4.4	9.3	27	29	1.1	1.2	65
8	.19	.46	.67	.94	16	4.2	10	261	29	1.2	1.2	67
9	.21	.47	.67	1.4	15	4.5	11	50	29	1.2	1.2	60
10	.21	.32	.66	76	13	4.3	12	80	30	1.2	1.3	59
11	.18	.26	.67	14	12	4.7	11	125	30	1.2	14	44
12	.17	.24	.67	5.6	11	5.0	12	122	30	1.2	17	29
13	.19	.24	.67	3.4	11	5.1	41	119	30	1.2	15	28
14	.20	.24	.67	2.9	10	6.5	17	716	30	1.2	1180	28
15	.20	.24	.68	10	8.2	5.7	6.4	574	31	1.2	83	28
16	.18	.24	.69	5.0	7.3	5.2	28	147	31	1.4	109	28
17	.25	.23	.70	2.3	8.5	5.8	47	131	31	2.7	106	28
18	.18	.24	.72	55	11	3.8	46	130	30	9.1	104	28
19	.16	.24	.72	86	9.9	3.6	33	135	22	8.3	104	28
20	.15	.24	.71	20	7.3	3.0	30	127	9.9	4.6	110	28
21	.16	.25	.72	9.9	7.4	2.4	28	123	27	2.8	121	28
22	.17	9.4	.72	7.9	18	3.2	28	123	27	2.2	121	28
23	.18	7.9	.73	7.3	13	5.1	28	123	27	1.6	121	29
24	.19	.74	.74	13	9.5	4.6	28	122	27	1.3	120	28
25	.18	.78	.75	12	8.1	5.7	28	139	27	11	120	29
26	.17	.64	.79	7.8	6.8	6.1	29	127	26	113	120	29
27	.16	.65	.84	7.1	6.3	7.3	30	122	19	2.3	120	29
28	.17	.64	.77	7.2	6.8	8.4	30	124	2.0	4.3	87	29
29	.18	.64	.76	6.9	---	9.5	30	122	1.4	4.6	59	29
30	.17	.63	.78	6.7	---	10	30	122	1.3	1.7	59	25
31	.17	---	.75	8.1	---	10	---	81	---	1.3	58	---
TOTAL	5.65	27.38	21.88	381.68	471.9	180.0	658.0	4342	749.6	190.2	2960.0	1194
MEAN	.18	.91	.71	12.3	16.9	5.81	21.9	140	25.0	6.14	95.5	39.8
MAX	.25	9.4	.84	86	127	11	47	716	31	113	1180	67
MIN	.15	.17	.64	.70	5.9	2.4	6.4	27	1.3	1.1	1.1	25
AC-FT	11	54	43	757	936	357	1310	8610	1490	377	5870	2370

CAL YR 1990	TOTAL	53911.90	MEAN	148	MAX	2100	MIN	.00	AC-FT 106900
WTR YR 1991	TOTAL	11182.29	MEAN	30.6	MAX	1180	MIN	.15	AC-FT 22180

08093500 AQUILLA CREEK NEAR AQUILLA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1960 to June 1966, October 1967 to current year. Chemical and biochemical analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1965 to June 1966, November 1967 to September 1982.
WATER TEMPERATURE: May 1965 to June 1966, November 1967 to September 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,080 microsiemens Dec. 31, 1975; minimum daily, 182 microsiemens Oct. 31, 1974.
WATER TEMPERATURE: Maximum daily, 31.0°C July 3, 1980; minimum daily, 0.0°C Jan. 8, 1976, Jan. 10, 1977.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV											
28...	1225	0.64	564	7.8	18.0	55	14	6.5	69	2.1	220
JAN											
10...	1053	130	690	7.9	8.0	60	260	12.3	105	6.2	190
MAR											
06...	1430	4.3	640	8.3	22.0	11	7.1	10.0	117	1.0	260
MAY											
01...	1514	29	400	7.8	22.0	40	35	9.0	104	1.8	150
21...	1343	122	420	8.0	24.5	13	16	9.3	113	1.1	150
JUN											
26...	1531	26	350	8.0	27.5	8	10	8.0	102	0.3	140
AUG											
20...	1518	102	325	7.9	29.5	14	45	7.4	99	1.9	120

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV											
28...	55	80	5.2	31	0.9	5.0	170	90	22	0.50	11
JAN											
10...	91	68	3.9	30	1	5.4	95	83	19	0.30	9.9
MAR											
06...	110	97	5.0	35	0.9	3.2	150	110	24	0.40	2.2
MAY											
01...	35	55	3.4	21	0.7	4.9	120	51	14	0.30	4.3
21...	38	56	3.2	21	0.7	4.6	120	53	16	0.40	3.9
JUN											
26...	34	52	3.4	20	0.7	4.6	110	56	16	0.40	5.2
AUG											
20...	26	45	2.5	17	0.7	5.1	97	46	16	0.40	6.4

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
NOV											
28...	346	18	<1	--	0.440	0.260	0.700	0.090	0.91	1.0	0.070
JAN											
10...	277	552	80	472	8.80	1.20	10.0	0.270	2.9	3.2	0.050
MAR											
06...	370	29	15	14	4.14	0.060	4.20	0.040	0.96	1.0	0.130
MAY											
01...	224	88	15	73	0.450	0.060	0.510	0.110	1.1	1.2	0.080
21...	227	45	11	34	0.610	0.030	0.640	0.070	0.83	0.90	0.040
JUN											
26...	224	21	2	19	0.220	0.010	0.230	0.080	0.92	1.0	0.140
AUG											
20...	197	84	26	58	0.210	0.050	0.260	0.110	0.99	1.1	0.100

DATE	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
NOV											
28...	0.040	8.3	3	70	0.6	2.0	<5	<3	20	38	10
JAN											
10...	0.070	18	4	53	<0.5	<1.0	<5	<3	<10	83	<10
MAR											
06...	0.030	3.5	--	--	--	--	--	--	--	--	--
MAY											
01...	0.050	6.3	2	56	<0.5	<1.0	<5	<3	<10	4	<10
21...	0.020	6.1	--	--	--	--	--	--	--	--	--
JUN											
26...	0.120	5.6	3	56	<0.5	1.0	<5	<3	<10	<3	<10
AUG											
20...	0.030	7.3	--	--	--	--	--	--	--	--	--

08093500 AQUILLA CREEK NEAR AQUILLA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV										
28...	19	210	0.2	<10	<10	<1	<1.0	570	<6	13
JAN										
10...	12	55	<0.1	<10	<10	<1	<1.0	410	<6	16
MAR										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	8	4	<0.1	<10	<10	<1	<1.0	330	<6	8
21...	--	--	--	--	--	--	--	--	--	--
JUN										
26...	7	7	<0.1	<10	<10	<1	<1.0	310	<6	11
AUG										
20...	--	--	--	--	--	--	--	--	--	--

08093695 NORTH BOSQUE RIVER ABOVE STEPHENVILLE, TX

LOCATION.--Lat 32°14'06", long 98°12'14", Erath County, Hydrologic Unit 12060204, on Farm to Market Road 108 bridge at center of upstream side of bridge 1 mile north of Stephenville.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--September 1991.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
SEP									
19...	1158	88	114	7.1	13.0	10.0	98	5.4	>24000
20...	1145	39	248	7.5	16.0	9.1	95	6.4	10000

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)
SEP									
19...	>24000	0.230	0.060	0.290	0.150	0.85	1.0	0.570	0.460
20...	K72000	0.130	0.040	0.170	0.110	1.4	1.5	0.410	0.290

08093800 NORTH BOSQUE RIVER BELOW STEPHENVILLE

LOCATION.--Lat 32°06'02", long 98°09'18", Erath County, Hydrologic Unit 12060204, on unnamed road over center of bridge 1 mi west of state highway 6, and 8.0 mi south of Stephenville.

DRAINAGE AREA.--Not determined.

PERIOD ON RECORD.--Chemical and biochemical analyses: September 1991.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
SEP									
04...	1230	5.0	850	8.0	24.5	6.3	79	2.6	K210000
19...	1243	780	206	7.6	13.0	10.1	99	7.9	--
20...	1225	565	238	7.8	16.0	9.2	96	6.4	2300

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)
SEP									
04...	K1900	2.35	0.050	2.40	0.030	0.87	0.90	0.810	0.660
19...	--	0.650	0.090	0.740	0.370	0.93	1.3	0.480	0.390
20...	>20000	0.520	0.060	0.580	0.250	0.85	1.1	0.490	0.420

08094800 NORTH BOSQUE RIVER AT HICO, TX

LOCATION.--Lat 31°58'41", long 98°02'04", Hamilton County, Hydrologic Unit 12060204, on left bank at downstream side of bridge on U.S. Highway 281 near south boundary of Hico, 2.6 mi downstream from Gilmore Creek, 5.0 mi upstream from Honey Creek, and 92.4 mi upstream from mouth.

DRAINAGE AREA.--359 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1962 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 982.46 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow affected at times by discharge from the flood-detention pools of 40 floodwater-retarding structures with a combined detention capacity of 65,720 acre-ft. These structures control runoff from 202 mi^2 in the North Bosque River and Green Creek drainage basins. The city of Stephenville discharges a small amount of sewage effluent into the river above this station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--11 years (water years 1963-73) prior to regulation, 50.5 ft^3/s (36,590 acre-ft/yr); 18 years (water years 1974-91) regulated, 45.9 ft^3/s (33,250 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,900 ft^3/s Apr. 30, 1977 (gage height, 22.27 ft), from rating curve extended above 9,000 ft^3/s; no flow at times in 1962-65, 1967-68, 1971, 1974, 1976, and 1978-86.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 27.6 ft May 23, 1952, from floodmarks (discharge, 87,800 ft^3/s, by contracted-opening measurement).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,390 ft^3/s Aug. 14 at 1300 hours (gage height, 13.03 ft); minimum daily, 3.1 ft^3/s Oct. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	4.2	7.1	8.3	7.9	7.1	4.6	6.5	14	13	7.9	14
2	4.5	4.3	7.0	8.3	7.6	7.2	4.7	7.1	68	12	6.7	49
3	4.5	4.5	7.2	8.5	7.3	6.4	4.8	7.4	206	14	5.7	72
4	4.9	4.7	7.2	8.5	7.0	5.7	4.9	9.5	60	13	4.9	30
5	6.0	5.4	7.6	8.7	7.7	5.3	5.0	21	39	10	6.0	21
6	4.7	6.6	7.3	8.8	8.4	5.1	5.0	9.8	27	9.4	6.5	22
7	4.6	7.6	7.2	8.8	6.8	5.0	4.9	7.8	27	9.5	6.5	166
8	4.4	5.8	7.1	8.8	6.0	5.0	4.8	382	25	9.2	6.6	223
9	5.0	5.1	7.0	8.5	5.8	5.2	4.7	333	31	9.2	6.9	65
10	5.7	8.2	7.0	22	5.8	5.3	4.2	105	24	9.1	7.6	33
11	6.8	16	7.0	20	5.7	5.1	3.9	60	18	9.0	488	25
12	7.4	8.6	7.1	10	5.6	5.2	4.1	44	15	8.8	554	22
13	6.3	7.1	7.4	8.8	5.5	5.1	8.5	35	13	7.5	403	20
14	5.5	6.6	7.4	8.8	5.4	5.1	6.9	29	13	7.4	2150	23
15	5.1	6.2	7.4	8.6	5.4	4.9	6.0	27	15	7.2	921	27
16	4.6	6.0	7.4	8.2	5.4	5.1	5.1	24	15	7.0	580	48
17	4.5	6.0	7.4	7.7	5.8	5.4	5.3	23	24	6.9	444	117
18	4.5	6.0	7.6	7.8	5.7	5.6	212	21	33	6.3	337	134
19	4.1	6.0	7.6	50	5.2	5.5	34	20	20	5.9	245	1240
20	3.3	6.0	7.6	21	4.8	5.2	15	18	20	5.6	174	608
21	3.1	6.0	7.7	11	5.9	5.3	11	36	17	5.3	118	304
22	3.4	6.1	7.6	8.5	5.9	5.1	9.3	48	13	5.2	81	197
23	4.1	6.3	7.6	8.0	5.7	5.0	8.3	34	12	5.3	61	156
24	4.7	6.8	7.5	7.6	5.6	5.2	7.7	23	11	5.5	49	133
25	4.9	7.2	7.4	7.1	5.5	5.1	8.4	18	9.9	5.4	43	110
26	4.6	7.2	7.4	6.9	6.8	5.0	13	40	11	5.6	37	81
27	4.1	7.0	7.6	6.5	7.7	5.1	8.1	86	11	7.1	30	64
28	4.2	6.8	7.7	6.0	7.7	5.4	7.2	26	12	7.8	27	54
29	4.2	6.9	7.8	6.1	---	5.5	6.9	20	13	9.3	23	46
30	4.2	7.1	8.0	6.6	---	4.8	6.4	17	13	9.3	19	41
31	4.2	---	8.3	7.4	---	4.7	---	15	---	9.2	15	---
TOTAL	146.5	198.3	230.2	331.8	175.6	165.7	434.7	1553.1	829.9	255.0	6864.3	4145
MEAN	4.73	6.61	7.43	10.7	6.27	5.35	14.5	50.1	27.7	8.23	221	138
MAX	7.4	16	8.3	50	8.4	7.2	212	382	206	14	2150	1240
MIN	3.1	4.2	7.0	6.0	4.8	4.7	3.9	6.5	9.9	5.2	4.9	14
AC-FT	291	393	457	658	348	329	862	3080	1650	506	13620	8220

CAL YR 1990	TOTAL	45386.2	MEAN	124	MAX	5450	MIN	3.1	AC-FT	90020
WTR YR 1991	TOTAL	15330.1	MEAN	42.0	MAX	2150	MIN	3.1	AC-FT	30410

08094800 NORTH BOSQUE RIVER AT HICO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: September 1991.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
SEP 19...	1335	2250	334	7.6	13.0	10.0	99	4.7	K54000

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)
SEP 19...	>24000	0.720	0.080	0.800	0.110	0.69	0.80	0.510	0.450

08095000 NORTH BOSQUE RIVER NEAR CLIFTON, TX

LOCATION.--Lat 31°47'09", long 97°34'04", Bosque County, Hydrologic Unit 12060204, near right bank at downstream side of bridge on Farm Road 219, 0.5 mi northeast of Clifton, 2.5 mi downstream from Meridian Creek, and 42.0 mi upstream from mouth.

DRAINAGE AREA.--968 mi².

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 788: 1924-26, 1928, 1930. WSP 1058: 1945(M). WSP 1512: 1924(M), 1927, 1928(M), 1929, 1930(M), 1931-33, 1934(M), 1935-37, 1939. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and data collection platform (DCP) and crest-stage gages. Datum of gage is 605.43 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1955, and from Apr. 23, 1957, to Mar. 26, 1958, nonrecording gage at site 1.1 mi upstream at datum 17.02 ft higher; Oct. 1, 1955, to Apr. 22, 1957, and Mar. 27, 1958, to Sept. 30, 1959, water-stage recorder destroyed by floods of Apr. 27, 1957, and Oct. 4, 1959); and Oct. 1, 1959, to Jan. 1, 1961, nonrecording gage at present site and datum.

REMARKS.--Records good. The city of Clifton diverts water from the river upstream from this station for municipal use. The cities of Clifton and Meridian discharge sewage effluent into the river upstream and downstream, respectively, from the station. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08094800. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter (DCP) at station.

AVERAGE DISCHARGE.--44 years (water years 1924-67) unregulated, 195 ft³/s (141,300 acre-ft/yr); 24 years (water years 1968-91) regulated, 173 ft³/s (125,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,800 ft³/s Oct. 4, 1959 (gage height, 34.88 ft), from rating curve extended above 34,000 ft³/s on basis of contracted-opening measurement of 92,800 ft³/s; no flow at times.
Maximum stage since at least 1854, that of Oct. 4, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 9, 1922, reached a stage of about 32 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,300 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 3	0630	* 6,440	*10.23				

Minimum daily discharge, 4.0 ft³/s Aug. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	11	13	18	28	28	20	74	70	36	6.9	27
2	14	11	13	18	27	30	19	56	65	32	6.2	25
3	15	12	13	19	27	31	18	50	2880	29	5.6	22
4	16	16	12	19	32	38	18	153	968	30	4.8	44
5	15	13	13	19	34	36	17	415	431	27	4.7	53
6	15	13	13	21	32	33	17	174	655	25	4.2	37
7	15	13	13	22	29	31	17	100	407	21	4.1	32
8	15	31	12	21	27	28	17	894	403	19	4.0	76
9	21	67	13	25	29	25	17	1150	262	18	4.9	178
10	18	49	14	41	27	23	16	379	255	17	4.2	89
11	17	35	14	52	24	22	15	231	220	15	4.1	55
12	18	38	14	56	23	22	17	169	172	14	314	39
13	18	27	14	65	23	21	1050	133	142	13	550	31
14	19	22	14	47	22	21	769	174	118	12	2240	26
15	23	19	15	39	21	21	158	290	133	12	1700	23
16	20	17	15	34	19	22	78	202	253	11	608	21
17	18	16	15	30	20	23	67	139	213	10	381	27
18	16	15	15	33	21	23	893	118	160	9.6	303	35
19	14	15	15	60	21	23	349	233	150	8.8	232	148
20	13	15	16	76	24	23	178	228	126	8.1	175	1170
21	15	14	16	104	25	23	130	161	101	7.7	139	384
22	15	22	15	76	31	23	113	176	86	7.3	110	240
23	14	50	14	60	40	22	91	154	74	6.6	89	211
24	14	28	14	54	45	21	77	124	66	6.3	76	150
25	13	22	15	47	35	20	69	533	58	11	62	124
26	12	19	16	41	35	18	57	428	53	12	50	111
27	11	17	17	37	31	18	53	273	49	10	43	87
28	11	15	17	33	28	17	170	177	43	10	37	72
29	11	14	19	31	---	18	580	127	40	11	32	62
30	12	14	20	30	---	22	139	99	39	10	29	54
31	11	---	19	29	---	21	---	81	---	8.0	27	---
TOTAL	474	670	458	1257	780	747	5229	7695	8692	467.4	7250.7	3653
MEAN	15.3	22.3	14.8	40.5	27.9	24.1	174	248	290	15.1	234	122
MAX	23	67	20	104	45	38	1050	1150	2880	36	2240	1170
MIN	11	11	12	18	19	17	15	50	39	6.3	4.0	21
AC-FT	940	1330	908	2490	1550	1480	10370	15260	17240	927	14380	7250

CAL YR 1990	TOTAL	136638	MEAN	374	MAX	32300	MIN	10	AC-FT	271000
WTR YR 1991	TOTAL	37373.1	MEAN	102	MAX	2880	MIN	4.0	AC-FT	74130

08095200 NORTH BOSQUE RIVER AT VALLEY MILLS, TX

LOCATION.--Lat 31°40'10", long 97°28'09", Bosque County, Hydrologic Unit 12060204, on right bank at downstream side of bridge on Farm Road 56, about 0.8 mi downstream from Thompson Hollow, 0.8 mi north of intersection of State Highway 6 and Farm Road 56 in Valley Mills, and 28.0 mi upstream from mouth.

DRAINAGE AREA.--1,146 mi².

PERIOD OF RECORD.--August 1959 to current year.
Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 524.55 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 29, 1959, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow is affected at times by discharge from the flood-detention pools of 42 floodwater-retarding structures with a combined detention capacity of 66,800 acre-ft. These structures control runoff from 207 mi². There are several small diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--8 years (water years 1960-67) unregulated, 263 ft³/s (190,500 acre-ft/yr); 24 years (water years 1968-91) regulated, 206 ft³/s (149,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 107,000 ft³/s Oct. 4, 1959 (gage height, 40.22 ft, from floodmarks), from rating curve extended above 28,200 ft³/s on basis of slope-area measurement of 107,000 ft³/s; no flow Oct. 5-12, 1965, many days in 1984, and Oct. 1-5, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1868, 43 ft in May 1908. Floods in September 1936 and April 1945 reached a stage of about 38 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 3	1030	*5,610	*14.02				

Minimum daily discharge, 5.9 ft³/s Aug. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	18	23	24	33	39	25	110	100	45	9.6	36
2	22	18	23	25	33	39	24	80	87	42	8.9	36
3	22	18	24	27	32	39	23	76	2380	39	8.2	33
4	23	22	24	26	42	44	23	77	959	43	7.6	29
5	23	25	24	26	42	45	22	572	518	35	7.1	71
6	22	21	24	31	38	42	22	238	597	33	6.5	52
7	23	21	24	40	35	40	21	142	423	29	6.2	45
8	21	30	24	40	33	37	20	713	482	25	5.9	44
9	29	77	24	45	34	34	19	1190	332	24	7.9	218
10	28	63	25	58	36	32	17	457	297	20	8.3	126
11	25	46	25	66	33	31	19	291	278	18	8.0	73
12	25	43	25	62	32	29	21	221	226	16	202	53
13	25	39	25	68	31	28	668	179	184	15	469	43
14	24	33	24	56	31	27	1010	206	157	13	1580	38
15	25	28	25	48	29	27	240	406	159	12	2020	31
16	26	26	25	43	27	29	134	262	243	12	637	28
17	24	25	25	40	28	29	114	186	314	12	450	34
18	22	24	25	47	31	29	740	157	202	12	360	43
19	20	24	24	62	30	27	439	286	181	11	288	51
20	19	24	25	76	30	27	235	258	160	10	219	964
21	21	23	25	109	33	26	171	212	133	9.5	172	457
22	21	35	25	85	37	26	153	201	116	8.8	139	309
23	19	49	24	63	43	24	127	189	101	8.8	113	379
24	20	42	24	55	51	24	109	162	86	8.6	95	216
25	19	35	24	49	45	22	103	425	76	17	77	164
26	18	32	25	44	42	23	85	471	67	13	62	144
27	18	31	27	41	41	22	71	325	62	12	54	118
28	17	27	25	39	37	21	76	219	55	16	50	95
29	17	24	25	37	---	20	583	164	51	15	44	77
30	18	24	24	34	---	21	196	134	49	12	43	67
31	18	---	25	34	---	27	---	115	---	11	38	---
TOTAL	677	947	760	1500	989	930	5510	8724	9075	597.7	7196.2	4074
MEAN	21.8	31.6	24.5	48.4	35.3	30.0	184	281	302	19.3	232	136
MAX	29	77	27	109	51	45	1010	1190	2380	45	2020	964
MIN	17	18	23	24	27	20	17	76	49	8.6	5.9	28
AC-FT	1340	1880	1510	2980	1960	1840	10930	17300	18000	1190	14270	8080

CAL YR 1990	TOTAL	145901	MEAN	400	MAX	28200	MIN	15	AC-FT	289400
WTR YR 1991	TOTAL	40979.9	MEAN	112	MAX	2380	MIN	5.9	AC-FT	81280

08095300 MIDDLE BOSQUE RIVER NEAR MCGREGOR, TX
(Flood-hydrograph partial-record station)

LOCATION (REVISED).--Lat 31°30'34", long 97°21'55", McLennan County, Hydrologic Unit 12060203, on left downstream side of bridge on Farm Road 3047, 1,100 ft downstream from Pecan Creek, 5.0 mi upstream from mouth, and 5.2 mi northeast of McGregor.

DRAINAGE AREA.--182 mi^2.

PERIOD OF RECORD.--August 1959 to September 1985. October 1985 to current year (peaks above base or annual maximum).

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 530.51 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 27, 1959, nonrecording gage at same site and datum.

REMARKS.--No estimated discharges. Records good. No known diversion above station. One observation of water temperature was made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--26 years (1959-1985), 78.4 ft^3/s (56,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,300 ft^3/s Oct. 31, 1974 (gage height, 24.62 ft); no flow at times in 1960-64, 1967, 1971, 1978-79, and 1981-84.

EXTREMES OUTSIDE PERIOD OF RECORD.--Historical flood information begins with a flood in 1889, which reached a stage of 28.5 ft. A flood in 1957 reached a stage of 28.2 ft; and floods in 1913 and 1942 or 1943 reached a stage of about 28 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 14	1100	*8,620	*10.98	No other peaks greater than base discharge.			

Minimum discharge, not determined.

08095400 HOG CREEK NEAR CRAWFORD, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°33'20", long 97°21'22", McLennan County, Hydrologic Unit 12060203, on downstream side of bridge on Farm Road 185, 5.6 mi east of Crawford, and 9.8 mi upstream from South Bosque River.

DRAINAGE AREA.--78.2 mi^2.

PERIOD OF RECORD.--August 1959 to September 1985, October 1985 to current year (peaks above base or annual maximum).

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 560.54 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 27, 1959, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow is affected at times by discharge from the flood-detention pools of two floodwater-retarding structures with a detention capacity of 9,600 acre-ft. These structure control runoff from 42.0 mi^2 in the Hog Creek drainage basin. One observation of water temperature made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--26 years (1959-1985), 32.3 ft^3/s (23,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,400 ft^3/s Oct. 4, 1959 (gage height, 14.31 ft); no flow at times in 1959, 1963-64, 1971, 1978-79, and 1983-85.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 17.5 ft Sept. 26, 1936. Flood in April or May 1957 reached a stage of 15.7 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sept. 23	0930	*1,220	*4.98				

Minimum discharge, not determined.

08095550 WACO LAKE NEAR WACO, TX

LOCATION.--Lat 31°34'46", long 97°11'51", McLennan County, Hydrologic Unit 12060203, in intake structure at Waco Dam on Bosque River, at northwest edge of city limits of Waco, and 4.6 mi upstream from mouth.

DRAINAGE AREA.--1,652 mi².

PERIOD OF RECORD.--February 1965 to current year. Prior to October 1970, published as Waco Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--The lake is formed by a rolled earthfill dam 24,618 ft long, including spillway. The lake was built for flood control and water conservation. From Oct. 1, 1964, to Feb. 26, 1965, the lake was operated as a detention basin only. On Feb. 26, 1965, old Lake Waco was breached and deliberate impoundment began. The spillway is controlled by fourteen 40.0- by 35.0-foot tainter gates. The outlet works consists of three gate-controlled outlets, 6.7 by 20.0 ft, opening into a 20.0-foot-diameter concrete conduit and two 54-inch concrete pipes. Low-flow releases are made through two 54-inch butterfly values. Flow into two wet wells is controlled by four 5.0- by 6.0-foot slide gates that are used to release water downstream for the city of Waco municipal water supply. Capacity table No. 2-C is based on a sedimentation survey completed in December 1970. Flow is affected at times by discharge from the flood-detention pools of 44 floodwater-retarding structures with a combined detention capacity of 76,460 acre-ft. These structures control runoff from 248 mi² in the Bosque River and Hog Creek drainage basins. An unknown amount of water was diverted for municipal and industrial uses. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	510.0	-
Design flood	505.0	824,400
Top of gates	500.0	722,500
Crest of spillway	465.0	229,900
Top of conservation pool	455.0	149,200
Lowest gated outlet (invert)	400.0	560

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 292,100 acre-ft May 15, 1968 (elevation, 470.86 ft); minimum since initial filling, 86,360 acre-ft Oct. 8, 1984 (elevation, 445.10 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 159,400 acre-ft May 15 (elevation, 456.39 ft); minimum daily, 126,100 acre-ft Oct. 8 (elevation, 451.70 ft).

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

451.0	121,400	453.0	135,000	456.0	156,500
452.0	128,100	455.0	149,200	457.0	163,900

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127400	127000	132600	133800	150600	151000	150100	150600	150600	149500	144900	150300
2	127200	126800	132600	134400	150900	151000	150100	150300	150800	149300	144600	150600
3	127000	126800	132500	134900	151200	150700	150100	151200	155600	150000	144300	150500
4	126800	127200	132500	135000	152300	150600	150100	151800	157200	150000	144100	150500
5	126700	127000	132500	135300	153100	150300	150100	153000	156500	149800	143800	150400
6	126500	126900	132500	135800	153300	150100	150200	152300	155300	149600	143600	150900
7	126300	126900	132400	136100	153300	149800	150200	150900	154100	149500	143400	151500
8	126100	128800	132400	136300	152500	149800	150100	152800	151800	149300	143100	151600
9	128000	129500	132400	138400	151500	149800	150100	154100	150200	148900	143200	151500
10	127900	129800	132500	140900	150700	149800	150000	152500	149700	148500	143400	151400
11	127700	130000	132500	141700	150200	149800	150000	151300	149900	148200	143300	151100
12	127600	130200	132500	142400	149800	150000	149900	149800	150200	148000	143300	150800
13	127400	130300	132600	143000	150000	150000	152100	149400	150100	147700	144000	150600
14	127300	130400	132600	143900	150100	149900	154400	158600	150100	147400	151800	150600
15	127200	130500	132700	145200	150300	150200	153200	159400	150900	145900	156400	150500
16	127000	130600	132800	145700	150400	150300	151500	157200	153000	146800	156200	150300
17	127600	130600	132900	146000	150900	150400	151200	154400	153400	146400	155400	150300
18	127400	130700	132900	147700	151100	150500	153600	152400	152800	146200	154300	150200
19	127100	130900	132900	149300	151400	150500	155900	150900	152000	145700	153000	151000
20	127000	130900	133000	150200	151300	150600	154700	150300	151600	145300	151800	152600
21	128100	131000	133300	150900	151000	150700	153000	151100	151200	145000	151100	153600
22	128100	131800	133200	151400	150600	150700	152100	151400	151000	144700	153300	154100
23	128000	132000	133100	151400	150200	150400	151100	151400	150900	144400	153300	155400
24	127800	132100	133000	151400	150100	150100	150200	151400	150600	144600	152700	154800
25	127800	132200	133000	151200	150200	150100	150200	152400	150300	145500	152100	153200
26	127600	132400	133200	151100	150300	150200	150400	152900	150200	145700	151400	151400
27	127500	132600	133300	150900	150500	150400	150600	152700	150100	145700	150600	150100
28	127400	132600	133300	150700	150700	150400	150800	152100	149900	145600	150300	149700
29	127300	132600	133800	150600	---	150300	151600	151400	149800	145400	150300	149800
30	127200	132500	133800	150300	---	150300	151400	150900	149700	145200	150600	149800
31	127000	---	133800	150200	---	150300	---	150600	---	145000	150400	---
MAX	128100	132600	133800	151400	153300	151000	155900	159400	157200	150000	156400	155400
MIN	126100	126800	132400	133800	149800	149800	149900	149400	149700	144400	143100	149700
(†	451.84	452.24	452.82	455.14	455.21	455.15	455.30	455.20	455.07	454.42	455.17	455.08
(ϕ)	-600	+5500	+1300	+16400	+500	-400	+1100	-800	-900	-4700	+5400	-600

CAL YR 1990 MAX 271600 MIN 126100 (ϕ) -5800
WTR YR 1991 MAX 159400 MIN 126100 (ϕ) +22200

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08096500 BRAZOS RIVER AT WACO, TX

LOCATION.--Lat 31°32'06", long 97°04'22", McLennan County, Hydrologic Unit 12060202, on left bank 2.2 mi downstream from bridge on LaSalle Avenue and at mile 400.7.

DRAINAGE AREA.--29,573 mi², approximately, of which 9,566 mi² probably is noncontributing.

PERIOD OF RECORD.--September 1898 to current year (January 1912 to September 1914 monthly records only, published in WSP 1312).

REVISED RECORDS.--WSP 850 and 878: 1899-1900, 1907-9 (monthly and yearly summaries only). WSP 1512: 1901-5, 1910, 1915, 1925-26(M), 1927-29. WSP 1922: 1957. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is 349.34 ft above National Geodetic Vertical Datum of 1929. Sept. 14, 1898, to Mar. 28, 1918, May 6, 1922, to Feb. 12, 1925, nonrecording gage, and May 28, 1918, to May 5, 1922, Feb. 13, 1925, to Aug. 14, 1969, water-stage recorder. Prior to Aug. 14, 1969, at site 3.9 mi upstream at datum 7.46 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Flow is largely regulated by Lake Whitney and by Waco Lake (stations 08092500 and 08095550). The combined capacity for 18 reservoirs above station is 4,135,000 acre-ft, of which 2,194,000 acre-ft is flood-control storage in Lake Whitney and in Waco Lake. The city of Waco diverts water above station for municipal use, and the Brazos River Authority returns treated sewage effluent to the river above station. There are many other small diversions above station for municipal supply, irrigation, and for oil field operations that will not appreciably affect flow. Flow is affected at times by discharge from the flood-detention pools of eleven floodwater-retarding structures with a combined detention capacity of 6,420 acre-ft. These structures control runoff from 20.4 mi² in the Aquilla and Hackberry Creeks drainage basins. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--42 years (water years 1899-1940) unregulated, 2,560 ft³/s (1,855,000 acre-ft/yr); 51 years (water years 1941-91) regulated, 2,222 ft³/s (1,610,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 246,000 ft³/s Sept. 27, 1936 (gage height, 40.90 ft), at former site and datum, levee on left bank was overtopped and broken by flood; no flow Aug. 20, 21, 1918, and probably for several days in August 1923.

Maximum stage since at least 1847, that of Sept. 27, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage for 1847-98, 34.63 ft May 28, 1885, from floodmark at site 3.9 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,700 ft³/s June 8 at 1700 hours (gage height, 17.29 ft); minimum daily, 0.48 ft³/s Nov. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	807	3.3	1040	1930	1150	1280	1430	2070	1440	1030	903	965
2	784	2.0	655	1470	1030	582	1190	1190	1380	1130	999	859
3	1060	.69	189	1390	586	145	1300	1910	1560	1280	1050	1650
4	1450	2.4	12	1840	675	411	1230	1500	2450	1230	868	1690
5	1690	.96	1280	1430	1180	368	1400	1430	5050	1050	742	1230
6	1340	.48	841	719	1120	171	1180	1030	5560	1110	814	1270
7	929	321	563	298	580	161	1300	1960	10100	1420	880	1470
8	807	842	538	353	1090	564	2530	2790	18100	2650	842	1170
9	1300	555	256	712	1960	812	2540	2890	18200	894	1030	972
10	1060	1.7	113	2180	1430	728	1290	2920	17500	1110	963	1120
11	1140	1170	422	1610	1180	647	1270	2890	17300	365	912	1180
12	1310	1260	549	1450	1360	643	1380	3180	17000	239	1050	1320
13	1350	241	213	460	1460	780	1960	2760	17300	977	629	1010
14	1230	141	64	312	980	802	3430	5950	16300	296	7500	861
15	1150	122	60	1010	1240	675	5090	9800	8840	186	5550	214
16	986	175	70	453	1520	687	5120	6560	9010	971	5130	152
17	845	412	70	478	1240	698	4330	6140	8830	1080	3800	377
18	1130	793	116	364	548	685	4070	4440	8940	1250	3080	739
19	700	660	264	519	792	448	4220	3770	8900	1280	3610	959
20	97	724	198	397	876	337	3920	2880	8310	1260	3370	1440
21	317	644	130	221	1380	402	3490	2480	4670	248	1680	209
22	1020	855	234	515	1390	559	3360	2150	4030	160	2360	127
23	684	954	323	441	927	600	3020	2960	3170	830	2840	1640
24	140	625	131	1010	711	833	1690	2920	2890	1090	2500	2720
25	745	405	234	707	422	833	1530	2490	2640	1280	2460	3200
26	72	109	395	726	1000	1250	1390	2500	2630	1230	2490	3030
27	725	18	177	1500	1350	730	1340	2600	2430	1010	2420	2690
28	645	505	718	1560	1390	726	1140	2180	1990	1060	2290	1790
29	2690	424	870	1420	---	731	1140	2080	1420	196	2140	1900
30	914	353	400	1520	---	1270	1660	1860	1560	1060	2290	1830
31	255	---	765	1780	---	1300	---	1630	---	205	2140	---
TOTAL	29372	12319.53	11890	30775	30567	20858	69940	93910	229500	29177	69332	39784
MEAN	947	411	384	993	1092	673	2331	3029	7650	941	2237	1326
MAX	2690	1260	1280	2180	1960	1300	5120	9800	18200	2650	7500	3200
MIN	72	.48	12	221	422	145	1140	1030	1380	160	629	127
AC-FT	58260	24440	23580	61040	60630	41370	138700	186300	455200	57870	137500	78910

CAL YR 1990 TOTAL 1766005.53 MEAN 4838 MAX 36600 MIN .48 AC-FT 3503000
WTR YR 1991 TOTAL 667424.53 MEAN 1829 MAX 18200 MIN .48 AC-FT 1324000

08098290 BRAZOS RIVER NEAR HIGHBANK, TX
(National stream-quality accounting network)

LOCATION.--Lat 31°08'02", long 96°49'29", Falls County, Hydrologic Unit 12070101, near right bank 45 ft downstream from bridge on Farm Road 413, 1.4 mi downstream from Highbank Slough and Spring Branch, 2.6 mi south of Highbank, and at mile 346.6.

DRAINAGE AREA.--30,436 mi^2, of which 9,566 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is 279.29 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Many diversions above station for municipal supply, irrigation, and industrial uses. Flow is affected by 20 upstream reservoirs with a total combined capacity of 4,181,000 acre-ft. Water is diverted from the river about 52 miles upstream from this station by Texas Power and Light Co. to Tradinghouse Reservoir. Flow is affected at times by discharge from the flood-detention pools of 76 floodwater-retarding structures with a total combined detention capacity of 83,290 acre-ft. These structures control runoff from 238 mi^2 in the Aquilla, Tehuacana, Castleman Creeks, and Cow Bayou basins. A U.S. Army Corps of Engineers satellite telemeter (DCP) at station.

AVERAGE DISCHARGE.--26 years, 2,595 ft^3/s (1,880,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,700 ft^3/s Feb. 4, 1986 (gage height, 23.90 ft); minimum daily, 32 ft^3/s Oct. 4-5, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since at least 1909, 42 ft in December 1913 and 40 ft in September 1936, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,800 ft^3/s June 10 at about 0700 hrs. (gage height, 13.06 ft, from estimated graph); minimum daily, 138 ft^3/s Dec. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	821	955	359	708	2300	1910	1230	1640	1990	1490	401	2300
2	1010	452	1150	2300	1720	2540	1440	2190	1730	1030	591	1250
3	1010	247	1030	3430	1450	2150	955	2390	e1760	1040	857	1410
4	1270	202	632	3410	1760	798	1200	5760	e1850	1260	881	2030
5	1790	186	278	3270	5610	554	1280	5440	e3000	1330	701	2180
6	2130	193	863	2520	6850	588	1240	4250	e5050	1080	636	1680
7	1840	171	1220	2640	5810	397	1210	3230	e6050	932	672	1910
8	1400	356	e550	2190	3740	301	1480	3480	e10000	1350	690	2210
9	1360	2340	e406	3020	2350	330	2620	5520	e16500	2190	685	1870
10	1880	2790	e329	11800	2800	811	e2600	5710	e17500	824	877	1450
11	1600	1470	e234	10300	2260	776	e2500	4790	e17000	742	976	1440
12	1550	1460	e259	7670	1920	658	e2200	4340	16900	344	812	1360
13	e1430	1960	596	5500	2030	626	e4000	4200	16800	154	753	1520
14	e1550	814	448	2900	2080	631	5430	3810	16900	689	2890	1260
15	e1600	478	266	2600	1600	944	6900	11200	15100	437	9980	1110
16	e1580	392	167	4190	1670	678	7500	10900	10400	227	6780	630
17	e1400	344	153	3190	1970	659	6180	7720	11000	590	5870	404
18	e1450	469	179	2760	1810	674	6610	7040	9990	961	4300	404
19	e1250	790	154	e4000	2920	691	6670	5260	9770	1080	3630	782
20	e1000	1020	138	e3600	2570	489	6060	4760	9640	1150	4130	3490
21	e1100	957	330	e2950	2200	349	4800	4200	7960	1160	3420	2070
22	e1100	1060	630	e2050	1950	314	4170	3420	5260	471	2140	791
23	e1200	1000	364	e1460	2380	276	3900	3480	4430	255	4270	844
24	e1550	1340	543	e1970	1870	481	3290	3480	3440	494	3350	2060
25	e1500	1020	373	e1890	1180	940	2080	3720	3110	954	2900	3030
26	e1000	821	272	1400	749	687	1820	3860	2770	1360	2730	3460
27	e710	488	519	1330	984	1040	1560	4540	2610	1280	2670	3470
28	e870	277	558	2090	1620	766	1490	3260	2410	1160	2720	3180
29	1450	260	e632	2110	---	1100	1290	2600	1980	1010	2580	2620
30	2610	876	1060	1930	---	1500	1230	2430	1420	475	2450	2550
31	1660	---	823	2090	---	1170	---	2270	---	700	2550	---
TOTAL	43671	25188	15515	103268	68153	25828	94935	140890	234320	28219	78892	54765
MEAN	1409	840	500	3331	2434	833	3164	4545	7811	910	2545	1825
MAX	2610	2790	1220	11800	6850	2540	7500	11200	17500	2190	9980	3490
MIN	710	171	138	708	749	276	955	1640	1420	154	401	404
AC-FT	86620	49960	30770	204800	135200	51230	188300	279500	464800	55970	156500	108600

CAL YR 1990 TOTAL 1949415 MEAN 5341 MAX 43000 MIN 123 AC-FT 3867000
WTR YR 1991 TOTAL 913644 MEAN 2503 MAX 17500 MIN 138 AC-FT 1812000

e Estimated

08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued
(National stream-quality accounting network)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: November 1967 to current year. Pesticide analyses: November 1976 to June 1981. Sediment analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1967 to current year.
WATER TEMPERATURES: November 1967 to February 1984, December 1989 to current year.

INSTRUMENTATION.--Since September 1980, specific conductance is recorded continuously at this station. From October 1980 to February 1984 and since December 1989 water temperature is recorded continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum specific conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,000 microsiemens Aug. 24, 1978; minimum daily, 140 microsiemens Mar. 8, 1984.
WATER TEMPERATURES (1980-84, 1989-90): Maximum daily, 35.5°C July 15, 16, 1978; minimum daily, 0.0°C on several days during December 1983 and December 1989.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,170 microsiemens June 22; minimum daily, 212 microsiemens Jan. 10.
WATER TEMPERATURES: Minimum daily, 0.5°C Dec. 23, 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
DEC												
04...	1300	631	1040	7.9	12.0	14	12.3	113	0.8	K32	K12	250
JAN												
17...	1130	2680	350	7.9	11.0	480	9.5	86	4.1	3400	8400	120
23...	1320	1430	650	--	8.5	--	--	--	--	--	--	220
APR												
23...	1145	3670	906	8.1	22.0	60	7.9	92	1.2	K140	2000	220
JUN												
24...	1715	2420	1640	7.8	32.0	--	--	--	--	--	--	310
JUL												
31...	1105	927	1410	8.2	31.5	32	8.2	113	3.2	92	K36	260

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)
DEC											
04...	100	73	16	120	3	5.1	0	181	150	148	100
JAN											
17...	29	42	3.8	18	0.7	4.6	0	112	91	92	27
23...	51	74	7.8	46	1	4.2	--	--	170	--	59
APR											
23...	86	68	12	93	3	4.8	0	164	130	134	97
JUN											
24...	190	88	21	200	5	6.1	--	--	120	--	200
JUL											
31...	160	73	19	190	5	5.5	0	127	113	--	160

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
DEC											
04...	180	0.30	6.1	595	592	0.220	0.280	0.080	0.020	0.300	0.300
JAN											
17...	18	0.20	11	203	193	2.21	2.24	0.390	0.360	2.60	2.60
23...	57	0.20	8.7	--	356	--	--	--	--	--	--
APR											
23...	150	0.30	6.5	514	516	0.640	0.560	0.040	0.020	0.680	0.580
JUN											
24...	340	0.30	7.7	--	934	--	--	--	--	--	--
JUL											
31...	280	0.30	6.3	818	798	--	--	0.010	<0.010	<0.050	<0.050

08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	SEDIMENT, SUSPENDED (MG/L)
DEC											
04...	0.050	0.030	0.45	--	0.50	0.130	0.110	0.110	0.110	0.34	18
JAN											
17...	0.130	0.190	0.87	--	1.0	0.200	0.180	0.170	0.170	0.52	630
23...	--	--	--	--	--	--	--	--	--	--	--
APR											
23...	0.050	0.030	0.45	--	0.50	0.180	0.070	0.040	0.060	0.12	227
JUN											
24...	--	--	--	--	--	--	--	--	--	--	--
JUL											
31...	0.010	<0.010	0.79	0.30	0.80	0.120	0.010	<0.010	0.020	--	76

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
DEC											
04...	31	83	<10	2	110	<0.5	<1.0	<1	<3	2	9
JAN											
17...	4560	90	--	5	55	<0.5	3.0	2	<3	20	160
23...	--	--	--	--	--	--	--	--	--	--	--
APR											
23...	2250	60	<10	2	92	<0.5	7.0	2	<3	5	20
JUN											
24...	--	--	--	--	--	--	--	--	--	--	--
JUL											
31...	190	92	<10	3	110	<0.5	<1.0	1	<3	10	4

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
DEC											
04...	<1	14	6	0.1	<10	1	<1	<1.0	860	<6	8
JAN											
17...	3	6	9	0.1	<10	4	<1	<1.0	410	<6	51
23...	--	--	--	--	--	--	--	--	--	--	--
APR											
23...	1	11	3	<0.1	<10	<1	<1	<1.0	700	<6	24
JUN											
24...	--	--	--	--	--	--	--	--	--	--	--
JUL											
31...	<1	19	<1	<0.1	<10	2	<1	<1.0	1100	<6	4

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1990 TO SEPTEMBER 1991

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICROSIEMENS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1990	43671	813	460	54300	120	14500	91	10700	210
NOV.	1990	25188	798	452	30700	120	8240	89	6060	200
DEC.	1990	15515	1010	578	24200	160	6910	120	4860	250
JAN.	1991	103268	527	297	82800	75	20800	57	16000	140
FEB.	1991	68153	624	352	64700	89	16400	68	12500	170
MAR.	1991	25828	926	526	36700	150	10200	100	7310	230
APR.	1991	94935	883	501	128000	140	35300	99	25500	220
MAY	1991	140890	754	426	162000	110	42900	84	31800	190
JUNE	1991	234320	1360	782	495000	250	158300	160	103200	300
JULY	1991	28219	1320	758	57800	240	18200	160	12000	290
AUG.	1991	78892	964	550	117000	160	34200	110	23700	230
SEPT	1991	54765	1300	744	110000	230	34400	150	22800	290
TOTAL		913644	**	**	1363000	**	400000	**	276000	**
WTD.AVG.		2503	968	553	**	160	**	110	**	230

08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	930	910	918	858	836	850	1020	996	1010	1120	1080	1100
2	940	770	902	877	838	856	1030	963	993	1140	1110	1120
3	830	780	792	911	869	891	1030	996	1010	1140	834	1010
4	850	770	784	914	888	902	1050	1020	1030	864	779	842
5	840	760	779	940	901	916	1060	1030	1040	926	756	831
6	812	760	779	968	919	942	1060	1030	1050	1020	926	984
7	877	792	805	996	957	972	1040	997	1020	1010	891	955
8	909	810	822	986	554	928	1020	995	1000	895	860	881
9	818	758	779	876	521	747	1000	990	998	861	421	737
10	789	752	773	621	521	584	1010	988	998	395	212	307
11	765	484	700	510	477	493	1020	995	1000	279	226	249
12	637	386	488	566	477	505	1010	1000	1010	270	241	256
13	807	648	727	820	543	719	1070	990	1020	326	270	297
14	875	807	845	798	754	773	1030	1000	1010	425	326	375
15	900	867	861	776	753	761	1020	1000	1010	497	425	453
16	923	868	882	776	753	764	1050	1020	1040	473	391	427
17	914	857	900	787	754	772	1060	1020	1050	377	336	353
18	917	859	887	820	787	805	1030	981	1010	425	362	382
19	904	879	895	864	820	846	1090	1030	1060	410	383	395
20	909	808	880	997	853	923	1120	1070	1100	475	396	429
21	832	776	799	997	953	978	1120	1080	1100	---	---	e494
22	875	661	780	964	920	945	1110	843	1060	---	---	e555
23	676	551	626	975	953	969	986	756	852	---	---	e634
24	754	685	727	985	952	972	986	758	845	---	---	e662
25	785	736	763	985	908	957	949	770	874	---	---	e671
26	905	785	833	953	908	932	984	933	953	---	---	e688
27	1030	906	971	986	953	973	1070	959	1030	---	---	e690
28	1040	983	1020	1010	985	996	1080	1060	1070	---	---	e666
29	1030	855	991	1030	996	1010	1070	1010	1040	---	---	e685
30	872	847	861	1020	996	1010	1080	1010	1060	---	---	e714
31	875	856	866	---	---	---	1080	1040	1060	---	---	e708
MONTH	1040	386	820	1030	477	856	1120	756	1010	1140	212	631

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	e710	981	875	945	---	---	e894	1120	1040	1080
2	---	---	e718	970	845	906	---	---	e950	1110	1070	1100
3	---	---	e724	871	846	863	---	---	e1010	1070	417	913
4	---	---	e689	907	871	890	---	---	e1030	636	356	502
5	607	375	519	933	885	913	---	---	e1020	623	425	526
6	440	323	390	971	934	955	---	---	e1050	569	438	510
7	389	323	351	974	949	962	---	---	e1060	746	532	633
8	489	379	429	975	906	946	---	---	e1070	827	682	775
9	556	478	524	942	861	897	---	---	e1070	658	500	616
10	558	504	531	934	873	919	---	---	e1110	663	476	577
11	650	549	597	923	876	890	---	---	e1180	663	518	585
12	650	618	634	927	890	911	---	---	e1200	829	564	682
13	631	588	609	940	796	898	---	---	e1010	886	790	850
14	691	600	634	931	797	810	728	569	626	880	774	844
15	749	691	727	969	931	953	793	685	755	852	654	739
16	807	749	770	996	958	982	892	708	790	641	458	518
17	865	807	839	1020	901	956	955	891	928	803	498	695
18	968	734	840	939	915	928	887	711	798	888	814	840
19	903	647	744	1060	915	1010	839	641	764	871	830	854
20	693	638	659	1050	1030	1040	908	797	832	900	801	850
21	810	673	744	1070	1040	1060	908	815	866	905	801	860
22	915	821	874	1080	1040	1060	914	794	861	921	869	900
23	938	838	887	1070	1030	1050	920	790	869	1100	891	1030
24	841	805	822	1060	986	1040	903	815	871	1140	1080	1110
25	877	841	861	---	---	e1020	938	800	874	1070	777	923
26	880	856	867	---	---	e1120	938	896	929	922	790	848
27	871	837	854	---	---	e1130	896	844	862	882	828	845
28	875	793	822	---	---	e1030	892	855	881	960	882	918
29	---	---	---	---	---	e914	1000	889	927	947	848	893
30	---	---	---	---	---	e649	1070	1010	1040	949	810	898
31	---	---	---	---	---	e779	---	---	---	924	806	873
MONTH	968	323	692	1080	796	949	1070	569	938	1140	356	800

e Estimated

08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	921	795	847	1340	1260	1290	987	958	971	---	---	e1570
2	882	804	835	1350	1230	1300	1000	955	974	---	---	e1550
3	912	876	895	1330	1240	1310	1020	980	1000	---	---	e1500
4	1010	891	950	1280	1140	1250	1210	999	1120	---	---	e1380
5	1060	999	1030	1170	1020	1120	1320	1200	1280	---	---	e1410
6	1170	985	1070	1250	1160	1210	1430	1290	1370	---	---	e1390
7	1120	1070	1080	1230	1130	1200	1480	1400	1440	---	---	e1370
8	1170	1090	1130	1360	1180	1260	1550	1470	1500	---	---	e1360
9	1160	1100	1130	1410	1260	1370	1590	1520	1550	---	---	e1310
10	1200	1100	1150	1420	1360	1400	1600	1430	1540	---	---	e1320
11	1280	1190	1230	1350	1200	1280	1590	1450	1540	---	---	e1340
12	1310	1200	1250	1250	1180	1220	1590	1500	1540	---	---	e1430
13	1370	1250	1310	1280	1230	1250	1710	1470	1640	---	---	e1500
14	1440	1250	1340	1250	1160	1220	1490	496	1250	---	---	e1510
15	1530	1420	1460	1230	1140	1180	1250	252	654	---	---	e1440
16	1500	1380	1460	1210	1130	1160	568	213	276	---	---	e1420
17	---	---	1450	1300	1130	1230	834	599	759	---	---	e1400
18	1720	1530	1640	1390	1230	1280	---	---	e854	---	---	e1390
19	1870	1630	1680	1580	1370	1450	---	---	e857	---	---	e1360
20	1830	1670	1730	1670	1410	1510	---	---	e829	---	---	e1100
21	2020	1690	1750	1650	1420	1480	---	---	e875	---	---	e980
22	2170	1710	1930	1530	1420	1450	---	---	e902	---	---	e1070
23	1730	1630	1670	1470	1390	1420	---	---	e938	---	---	e1110
24	1640	1560	1630	---	---	1550	---	---	e924	---	---	e810
25	1690	1500	1610	---	---	1600	---	---	e990	---	---	e1350
26	1680	1460	1560	---	---	1630	---	---	e1130	---	---	e1130
27	1500	1250	1360	1600	1350	1500	---	---	e1320	---	---	e1200
28	1350	1290	1320	1330	1170	1290	---	---	e1410	---	---	e1280
29	1310	1250	1280	1160	899	1000	---	---	e1430	---	---	e1270
30	1290	1260	1270	1040	973	1020	---	---	e1460	---	---	e1380
31	---	---	---	985	923	956	---	---	e1480	---	---	---
MONTH	2170	795	1330	1670	899	1300	1710	213	1150	---	---	1320

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued
(National stream-quality accounting network)

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	--	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

08099100 LEON RIVER NEAR DE LEON, TX
(Flood-hydrograph Partial-record Station)

LOCATION.--Lat 32°10'25", long 98°31'58", Comanche County, Hydrologic Unit 12070201, on left bank at downstream end of bridge on State Highway 16, 1.5 mi upstream from Flat Creek, 4.4 mi northeast of De Leon, 6 mi downstream from Hog Creek, and 250.1 mi upstream from mouth.

DRAINAGE AREA.--479 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1960 to September 1985 (continuous-record station); October 1985 to current year, (flood-hydrograph partial-record station).

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,209.93 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 22, 1960, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Beginning Oct. 1, 1985, only daily discharges greater than 600 ft^3/s are published. Flow is regulated by Leon Reservoir (capacity 40,200 acre-ft), about 17.5 mi upstream. There are numerous diversions above station for municipal, steam powerplant operation, and other uses. Recording rain gage was discontinued May 31, 1978. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft^3/s Apr. 26, 1990 (gage height, 19.00 ft, from floodmarks), from rating curve extended above 17,600 ft^3/s; prior to Apr. 26, 1990, maximum discharge, 7,540 ft^3/s June 21, 1968, (gage height, 15.50 ft); no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 19.3 ft occurred in May 1908 at a point 2,000 ft downstream from present gage site and is the highest since that time, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug. 14	1000	*4,280	*14.09	No other peak greater than base discharge.			

Minimum discharge, not determined.

08099100 LEON RIVER NEAR DE LEON, TX--Continued
(Flood-hydrograph Partial-record Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1980 to September 1982, October 1990 to September 1991.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV											
20...	0825	4.4	1290	8.1	15.0	13	6.0	7.2	75	0.9	370
JAN											
24...	0858	16	1500	8.1	6.0	20	7.8	10.6	89	0.8	400
FEB											
27...	1015	9.3	2200	8.2	7.5	12	3.0	11.9	103	1.3	520
APR											
17...	0932	4.1	2240	8.0	20.5	13	3.4	5.1	60	1.1	590
JUL											
10...	1030	0.61	893	8.0	26.5	7	2.6	4.8	63	1.0	250
AUG											
28...	1008	4.5	1190	7.9	23.5	2	5.9	6.9	85	1.3	360

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV											
20...	120	110	23	110	2	5.8	250	73	210	0.50	12
JAN											
24...	180	120	24	140	3	5.4	220	76	310	0.20	10
FEB											
27...	250	150	36	230	4	4.3	270	130	480	0.30	4.3
APR											
17...	310	170	39	220	4	5.3	280	160	470	0.30	14
JUL											
10...	110	74	15	82	2	6.4	140	47	160	0.20	7.4
AUG											
28...	120	110	20	91	2	5.7	240	64	190	0.30	13

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
NOV											
20...	694	6	4	2	--	<0.010	<0.100	0.030	0.57	0.60	0.050
JAN											
24...	820	18	8	10	--	<0.010	0.200	0.050	0.45	0.50	0.030
FEB											
27...	1200	5	3	2	--	0.010	<0.050	0.020	0.28	0.30	0.010
APR											
17...	1250	12	7	5	--	<0.010	<0.050	0.010	0.49	0.50	0.020
JUL											
10...	476	10	8	2	--	0.010	<0.050	0.100	0.30	0.40	0.020
AUG											
28...	639	8	8	0	0.067	0.010	0.077	0.040	0.46	0.50	0.080

DATE	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
NOV											
20...	0.030	6.5	--	--	--	--	--	--	--	--	--
JAN											
24...	0.020	5.4	<1	180	<0.5	<1.0	<5	<3	<10	12	<10
FEB											
27...	<0.010	3.8	--	--	--	--	--	--	--	--	--
APR											
17...	<0.010	4.4	<1	230	<0.5	<1.0	<5	<3	<10	15	<10
JUL											
10...	0.010	4.8	--	--	--	--	--	--	--	--	--
AUG											
28...	0.010	5.3	1	200	<0.5	<1.0	<5	<3	<10	11	<10

08099100 LEON RIVER NEAR DE LEON, TX--Continued--Continued
(Flood-hydrograph Partial-record Station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV										
20...	--	--	--	--	--	--	--	--	--	--
JAN										
24...	22	240	<0.1	<10	<10	<1	<1.0	1300	<6	4
FEB										
27...	--	--	--	--	--	--	--	--	--	--
APR										
17...	35	140	<0.1	<10	<10	<1	<1.0	1700	<6	3
JUL										
10...	--	--	--	--	--	--	--	--	--	--
AUG										
28...	15	660	0.1	<10	<10	<1	<1.0	670	<6	<3

08099300 SABANA RIVER NEAR DE LEON, TX
(Flood-hydrograph Partial-record Station)

LOCATION.--Lat 32°06'50", long 98°36'19", Comanche County, Hydrologic Unit 12070201, on left bank at downstream end of bridge on Farm Road 587, 0.6 mi downstream from Spring Branch, 4.0 mi west of De Leon, 4.2 mi upstream from Turkey Creek, and 12.2 mi upstream from mouth.

DRAINAGE AREA.--264 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1960 to September 1985 (continuous-record station), October 1985 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,209.59 ft above National Geodetic Vertical Datum of 1929 (levels by State Department of Highways and Public Transportation). Prior to Nov. 22, 1960, nonrecording gage at present site and datum.

REMARKS.--One estimated daily discharge. Records good. Beginning Oct. 1, 1985, only daily discharges greater than 250 ft^3/s are published. Flow may be slightly affected by Nabors Lake 0.4 mi upstream on Spring Branch. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,500 ft^3/s Apr. 26, 1990 (gage height, 23.65 ft), from floodmark, from rating curve extended above 17,000 ft^3/s; prior to Apr. 26, 1990, maximum discharge, 10,400 ft^3/s June 5, 1986, (gage height, 21.99 ft); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 24 ft in May 1908, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug. 11	1700	2,680	18.67	Aug. 14	1030	*3,490	*19.88
Aug. 13	0130	1,730	15.50	Sept. 20	0300	2,410	a18.05

a From floodmark.

Minimum discharge, not determined.

08099300 SABANA RIVER NEAR DE LEON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1990 to September 1991.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV											
20...	1110	5.8	1040	8.1	15.5	23	10	9.0	94	1.1	320
JAN											
24...	1155	27	1100	8.0	7.5	20	27	11.0	96	1.6	310
FEB											
27...	1315	9.9	2130	8.4	11.5	12	5.8	14.7	141	1.2	580
APR											
17...	1223	2.5	1950	8.1	22.0	12	4.5	8.1	97	0.9	580
JUL											
10...	1425	0.49	1220	8.0	27.5	13	2.0	8.1	108	1.6	390
AUG											
28...	1328	5.2	1040	8.1	26.0	12	3.5	9.0	116	1.9	350

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV											
20...	120	88	24	83	2	6.4	200	110	140	0.50	12
JAN											
24...	130	79	27	97	2	7.6	180	79	190	0.20	10
FEB											
27...	290	140	55	210	4	5.1	290	210	410	0.40	5.5
APR											
17...	290	150	50	190	3	5.0	300	220	340	0.40	11
JUL											
10...	140	100	33	110	2	5.7	240	120	180	0.30	12
AUG											
28...	98	100	23	80	2	5.3	250	120	120	0.30	16

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 1 5 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
NOV											
20...	585	12	3	9	0.190	0.010	0.200	0.030	0.47	0.50	0.060
JAN											
24...	600	47	11	36	0.290	0.010	0.300	0.060	0.74	0.80	0.110
FEB											
27...	1210	27	23	4	0.090	0.010	0.100	0.020	0.48	0.50	0.030
APR											
17...	1150	7	5	2	0.200	0.020	0.220	0.060	0.44	0.50	0.010
JUL											
10...	706	10	5	5	0.060	0.010	0.070	0.070	0.13	0.20	0.010
AUG											
28...	614	3	3	0	--	<0.010	0.073	0.010	0.49	0.50	0.060

DATE	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
NOV											
20...	0.030	6.5	--	--	--	--	--	--	--	--	--
JAN											
24...	0.070	7.6	1	110	<0.5	1.0	<5	<3	<10	52	<10
FEB											
27...	<0.010	4.6	--	--	--	--	--	--	--	--	--
APR											
17...	<0.010	4.7	1	170	<0.5	<1.0	<5	<3	<10	8	<10
JUL											
10...	<0.010	5.5	--	--	--	--	--	--	--	--	--
AUG											
28...	<0.010	6.4	2	160	<0.5	<1.0	<5	<3	<10	13	<10

08099300 SABANA RIVER NEAR DE LEON, TX--Continued--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV										
20...	--	--	--	--	--	--	--	--	--	--
JAN										
24...	14	52	<0.1	<10	<10	<1	<1.0	720	<6	6
FEB										
27...	--	--	--	--	--	--	--	--	--	--
APR										
17...	42	110	<0.1	<10	<10	<1	<1.0	1600	<6	6
JUL										
10...	--	--	--	--	--	--	--	--	--	--
AUG										
28...	25	150	0.2	<10	<10	<1	<1.0	760	<6	<3

08099400 PROCTOR LAKE NEAR PROCTOR, TX

LOCATION.--Lat 31°58'07", long 98°29'09", Comanche County, Hydrologic Unit 12070201, in intake structure at Proctor Lake on Leon River, 2.0 mi upstream from U.S. Highways 67 and 377, 3.5 mi west of Proctor, and 228.1 mi upstream from mouth.

DRAINAGE AREA.--1,259 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1963 to current year. Prior to October 1970, published as Proctor Reservoir.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 28, 1963, non-recording gage at same site and datum.

REMARKS.--The lake is formed by a reinforced concrete gated structure and rolled earthfill dam, total length 13,460 ft. The lake was operated as a detention basin from Jan. 30 to July 5, 1963. The gates were closed July 6, 1963, but the lake was operated to elevation 1,156.0 ft until construction was completed. Deliberate impoundment began Sept. 30, 1963. The spillway is a gated concrete gravity structure located on the left bank, with an ogee weir section and stilling basin. The spillway is controlled by eleven 40.0- by 35.0-foot tainter gates. The spillway was designed to discharge 431,800 ft³/s at an elevation of 1,201.0 ft. The lake is operated for flood control and water conservation. Inflow is partly regulated by one major reservoir (see station 08099000). Inflow is also affected at times by discharge from the flood-detention pools of 23 floodwater-retarding structures with a combined detention capacity of 43,690 acre-ft. These structures control runoff from 172 mi² in the Leon River and Rush Creek drainage basins. The capacity table is based on a survey made in 1946. Borrow is not included in capacity totals. Gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,206.0	-
Design flood	1,201.0	433,000
Top of gates	1,197.0	374,200
Crest of spillway (top of conservation pool)	1,162.0	59,400
Lowest gated outlet (invert)	1,128.0	68

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 383,100 acre-ft May 2, 1990 (elevation, 1,197.63 ft); minimum since first filling of lake, 18,900 acre-ft Oct. 4, 1984 (elevation, 1,149.37 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 80,320 acre-ft Aug. 16 (elevation, 1,166.12 ft); minimum daily, 53,800 acre-ft Aug. 10 (elevation, 1,160.75 ft).

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

1,160.0	50,620	1,163.0	64,110	1,166.0	79,660
1,161.0	54,890	1,164.0	69,060	1,167.0	85,300
1,162.0	59,390	1,165.0	74,250		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59530	59860	61440	59620	60180	60090	59950	57930	59390	62150	55950	67000
2	59350	59760	61300	59760	60320	60270	59900	57880	59620	61870	55690	66210
3	59480	59670	61020	59760	60370	60130	59950	57840	60690	61770	55470	65430
4	59480	60230	60690	59760	60690	60180	59860	57980	61870	61630	55290	64600
5	59390	60180	60320	59860	60830	60130	59860	57930	62250	61490	54980	63780
6	59260	60320	60130	60090	60930	60090	59860	57750	62100	61300	54720	63150
7	59210	60460	59990	60040	60880	60090	59760	57700	62060	61210	54460	62670
8	59300	61110	59990	60090	60790	60040	59760	58980	61630	60930	54190	61960
9	59670	62150	59950	60600	60510	60090	59760	59670	61070	60600	53930	61260
10	60410	62670	59900	60930	60270	60090	59580	59860	60460	60320	53800	60460
11	60600	62910	59860	61440	60230	59990	59530	59950	60180	59950	54850	59900
12	60690	63060	59860	61680	60270	60040	59530	59990	60090	59720	58430	59620
13	60740	63100	59810	61870	60370	60040	59530	59990	59990	59480	60460	59530
14	60790	63060	59760	62060	60460	59950	59580	59990	59950	59260	69470	59390
15	60790	63010	59760	62200	60320	59900	59440	59990	60370	59020	79490	59390
16	60740	62910	59720	62250	59860	60040	59350	59950	60460	58750	80320	59440
17	60790	62820	59760	62440	59990	60090	59350	59900	60690	58480	79710	59440
18	60650	62720	59760	62860	60180	60090	59390	59900	61770	58160	78940	59860
19	60460	62630	59720	63630	60180	60040	59390	59860	63060	57880	78120	61630
20	60550	62480	59810	63870	60130	60090	59260	59810	63780	57610	77250	66900
21	60320	62480	59810	63970	60550	60180	59260	59760	64060	57390	76440	68510
22	60180	62480	59670	63820	60370	60180	59120	59670	64260	57120	75530	68660
23	60130	62440	59580	63390	59990	60040	58930	59580	64260	56850	74780	68300
24	60130	62340	59390	62770	59990	59990	58890	59580	64110	56620	73880	67750
25	60090	62290	59390	62200	59950	59950	58800	60320	63920	56490	73190	67000
26	60040	62250	59480	61440	59950	60130	58700	60370	63630	56350	72360	66260
27	60040	62250	59480	60830	59900	60320	58610	60270	63340	56220	71420	65430
28	59990	62060	59530	60130	59990	60370	58480	60090	62860	56440	70540	64650
29	59990	61920	59720	59900	---	60180	58250	59810	62670	56400	69620	63870
30	59950	61680	59670	59950	---	60180	58020	59720	62440	56310	68810	63100
31	59900	---	59580	60040	---	60040	---	59480	---	56180	67950	---
MAX	60790	63100	61440	63970	60930	60370	59950	60370	64260	62150	80320	68660
MIN	59210	59670	59390	59620	59860	59900	58020	57700	59390	56180	53800	59390
(†)	1162.11	1162.49	1162.04	1162.14	1162.13	1162.14	1161.70	1162.02	1162.65	1161.29	1163.78	1162.79
(ϕ)	+180	+1780	-2100	+460	-50	+50	-2020	+1460	+2960	-6260	+11770	-4850

CAL YR 1990 MAX 382900 MIN 52900 (ϕ) +6420
WTR YR 1991 MAX 80320 MIN 53800 (ϕ) +3380

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08099400 PROCTOR LAKE NEAR PROCTOR, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1964 to July 1982, October 1990 to September 1991.

315814098291201 - PROCTOR LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	RESERVOIR STORAGE (AC-FT)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
MAR											
06...	0950	60100	1.00	624	8.7	14.0	0.46	10.1	104	K4	K8
06...	0952	--	10.0	624	8.6	13.5	--	9.0	91	--	--
06...	0954	--	20.0	625	8.6	13.5	--	9.0	91	--	--
06...	0956	--	29.0	624	8.6	13.5	--	8.7	88	--	--
JUN											
06...	0930	62100	1.00	788	8.2	25.0	0.40	6.4	81	K22	K18
06...	0932	--	10.0	788	8.1	25.0	--	6.2	78	--	--
06...	0934	--	20.0	788	8.1	25.0	--	5.9	75	--	--
06...	0936	--	28.0	788	7.9	25.0	--	4.9	62	--	--
JUL											
23...	1235	56800	1.00	785	8.0	29.0	0.70	5.9	80	<2	<2
23...	1237	--	10.0	785	7.7	28.5	--	4.1	55	--	--
23...	1239	--	20.0	785	7.5	28.5	--	2.3	31	--	--
23...	1241	--	27.0	790	7.4	27.5	--	0	0	--	--

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
MAR											
06...	210	69	58	16	52	2	6.0	140	49	91	0.20
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	220	74	60	16	50	1	6.3	140	48	89	0.20
JUN											
06...	230	89	62	18	68	2	6.4	140	58	130	0.20
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	230	88	62	18	66	2	6.8	140	56	120	0.20
JUL											
23...	210	93	54	19	68	2	6.8	120	58	140	0.20
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	210	83	54	19	69	2	6.7	130	56	140	0.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR											
06...	2.7	360	<0.010	<0.050	0.140	0.96	1.1	0.060	<0.010	7	1
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	2.7	357	<0.010	<0.050	<0.010	--	0.70	0.070	0.020	17	15
JUN											
06...	1.8	428	0.020	<0.050	0.020	0.78	0.80	0.050	0.010	<3	3
06...	--	--	<0.010	<0.050	0.030	0.77	0.80	0.050	0.010	<10	<10
06...	--	--	--	--	--	--	--	--	--	--	--
06...	2.1	416	0.010	<0.050	0.030	0.87	0.90	0.060	0.020	<3	33
JUL											
23...	3.3	421	<0.010	<0.050	0.030	0.87	0.90	0.040	<0.010	15	23
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	<0.010	<0.050	0.100	0.70	0.80	0.020	<0.010	50	250
23...	3.9	428	<0.010	<0.050	0.290	1.0	1.3	0.120	0.020	49	1000

08099400 PROCTOR LAKE NEAR PROCTOR, TX--Continued

315823098282801 - PROCTOR LAKE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
06...	1010	1.00	614	8.7	14.0	10.3	106
06...	1012	10.0	618	8.6	13.5	9.5	96
06...	1014	20.0	619	8.6	13.5	9.5	96
06...	1016	29.0	623	8.6	13.5	9.2	93
JUN							
06...	0915	1.00	788	8.0	25.0	5.9	74
06...	0917	10.0	788	8.0	24.5	5.5	69
06...	0919	20.0	788	8.0	24.5	5.4	68
06...	0921	28.0	788	8.0	24.5	5.3	66
JUL							
23...	1215	1.00	781	8.0	29.5	5.7	78
23...	1217	10.0	781	7.7	28.5	4.1	55
23...	1219	20.0	784	7.5	28.0	2.4	32
23...	1221	27.0	792	7.4	27.5	0	0

315832098302301 - PROCTOR LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
06...	0915	1.00	650	8.6	14.0	9.3	95
06...	0917	10.0	650	8.6	14.0	8.8	90
06...	0919	17.0	650	8.6	14.0	8.9	91
JUN							
06...	0950	1.00	783	8.2	25.5	6.8	86
06...	0952	10.0	787	8.2	25.0	6.5	82
06...	0954	22.0	787	8.0	25.0	5.4	68
JUL							
23...	1256	1.00	783	8.1	29.5	6.1	83
23...	1258	10.0	786	7.8	28.5	4.4	59
23...	1300	21.0	790	7.5	28.0	0	0

315837098314201 - PROCTOR LAKE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
06...	0930	1.00	698	8.6	15.0	8.8	92
06...	0932	7.00	697	8.5	14.5	8.2	85
JUN							
06...	1000	1.00	782	8.3	26.0	7.8	101
06...	1002	12.0	782	8.3	26.0	7.2	92
JUL							
23...	1310	1.00	793	8.3	30.0	6.9	95
23...	1312	12.0	793	7.8	28.5	3.9	52

315943098273101 - PROCTOR LAKE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
06...	0800	1.00	616	8.6	14.5	9.8	102
06...	0802	11.0	614	8.5	14.5	9.5	99
JUN							
06...	0815	1.00	806	7.9	25.0	5.2	66
06...	0817	11.0	812	7.9	25.0	5.2	66
JUL							
23...	1110	1.00	784	8.1	29.5	6.2	85
23...	1112	11.0	790	7.4	28.5	0.8	11

08099400 PROCTOR LAKE NEAR PROCTOR, TX--Continued

315924098285501 - PROCTOR LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
MAR											
06...	0810	1.00	633	8.6	13.5	0.46	9.7	98	K6	K6	210
06...	0812	10.0	654	8.6	13.5	--	9.3	94	--	--	--
06...	0814	21.0	714	8.5	13.5	--	8.6	87	--	--	230
JUN											
06...	0826	1.00	827	8.2	25.5	0.50	6.6	84	38	K18	230
06...	0828	10.0	829	8.1	25.5	--	6.4	82	--	--	--
06...	0830	20.0	833	7.8	25.0	--	3.8	48	--	--	230
JUL											
23...	1125	1.00	772	8.0	29.5	0.50	6.0	82	K2	<2	210
23...	1127	10.0	780	7.8	29.0	--	4.5	61	--	--	--
23...	1129	20.0	780	7.7	29.0	--	2.8	38	--	--	210

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
MAR											
06...	71	60	15	50	1	6.1	140	47	94	0.20	2.6
06...	--	--	--	--	--	--	--	--	--	--	--
06...	88	66	17	59	2	6.2	150	54	120	0.20	2.6
JUN											
06...	97	62	18	74	2	6.7	130	62	150	0.20	2.3
06...	--	--	--	--	--	--	--	--	--	--	--
06...	95	62	18	73	2	6.8	130	61	140	0.30	2.7
JUL											
23...	94	51	19	71	2	6.8	110	57	140	0.30	3.1
23...	--	--	--	--	--	--	--	--	--	--	--
23...	94	51	19	70	2	6.8	110	58	140	0.20	3.3

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR											
06...	359	--	<0.010	<0.050	<0.010	--	0.80	0.050	<0.010	7	<1
06...	--	--	<0.010	<0.050	<0.010	--	0.70	0.050	0.010	<10	<10
06...	413	--	<0.010	<0.050	<0.010	--	0.90	0.100	0.010	10	6
JUN											
06...	454	--	<0.010	<0.050	0.020	0.88	0.90	0.070	0.020	3	<1
06...	--	--	<0.010	<0.050	0.010	0.79	0.80	0.060	<0.010	<10	<10
06...	444	--	<0.010	<0.050	0.020	0.98	1.0	0.070	0.030	<3	22
JUL											
23...	415	--	<0.010	<0.050	0.060	0.84	0.90	0.040	<0.010	5	4
23...	--	--	<0.010	<0.050	0.070	0.73	0.80	0.020	<0.010	20	20
23...	416	0.080	0.020	0.100	0.200	1.0	1.2	0.080	0.020	6	160

320040098293501 - PROCTOR LAKE SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
MAR											
06...	0840	1.00	933	8.5	14.5	0.36	9.2	95	K6	K4	290
06...	0842	8.00	933	8.5	14.5	--	8.7	90	--	--	280
JUN											
06...	0850	1.00	845	8.1	26.0	0.30	7.0	90	K26	48	210
06...	0852	8.00	845	8.0	26.0	--	6.6	85	--	--	220
JUL											
23...	1155	1.00	771	8.2	30.0	0.20	6.8	94	<2	<2	200
23...	1157	9.00	775	7.8	29.0	--	4.3	58	--	--	200

08099400 PROCTOR LAKE NEAR PROCTOR, TX--Continued

320040098293501 - PROCTOR LAKE SITE FC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
MAR											
06...	120	81	21	87	2	6.4	170	73	170	0.20	2.8
06...	120	79	20	80	2	6.7	160	72	170	0.20	2.8
JUN											
06...	99	58	17	80	2	6.6	120	65	150	0.20	2.7
06...	100	57	18	82	2	6.8	110	64	160	<0.10	2.9
JUL											
23...	92	51	18	71	2	6.9	110	57	140	0.30	3.6
23...	89	50	18	74	2	7.2	110	57	140	0.30	3.8

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
06...	540	<0.010	<0.050	<0.010	--	0.90	0.080	0.010	9	4
06...	529	<0.010	<0.050	<0.010	--	1.0	0.100	0.010	7	12
JUN										
06...	449	0.040	<0.050	0.030	1.3	1.3	0.110	0.050	<3	1
06...	458	<0.010	<0.050	0.030	1.3	1.3	0.410	0.040	<3	6
JUL										
23...	414	0.010	<0.050	0.040	0.86	0.90	0.080	<0.010	<3	2
23...	416	0.020	<0.050	0.170	1.0	1.2	0.060	0.010	<3	14

Proctor Lake AC (315814098291201)

Phytoplankton Analyses October 1990 to September 1991

Date	3-06-91
Time	0951
TOTAL CELLS/mL	3,659,455
NUMBER OF SPECIES	33
DEPTH COLLECTED (ft.)	0.8

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Cyclotella meneghiniana	404
Cyclotella ocellata	45
Melosira granulata	7,720
Order Pennales	
Achnanthes minutissima	128
Cocconeis placentula var. *euglypta*	128
Gomphonema sp.	128
Navicula arvensis	383
Navicula gysingenses	255
Navicula pupula var. *mutata*	128
Navicula sp.	255
Nitzschia acicularis	4,978
Nitzschia lanceolata	766
Nitzschia palea	128
Synedra delicatissima	893
CHLOROPHYTA (Green algae)	
Carteria sp.	8,168
Chlorella elipsiodea	73,516
Chlorococcum humicola	8,168
Crucigenia rectangularis	130,695
Crucigenia tetrapedia	32,674
Franceia Droescheri	8,168
Kirchneriella obesa	40,842
Scenedesmus bijuga	32,674
Selenastrum minutum	16,337
Tetraëdron muticum	16,337
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	604,463
Aphanocapsa elachista	441,095
Aphanothece nidulans	547,284
Chroococcus multicoloratus	8,168
Chroococcus sp.	147,032
Merismopedia tenuissima	1,396,800
EUGLENOPHYTA (Euglenoids)	
Euglena oblonga	16,337
CRYPTOPHYTA (Cryptomonads)	
Cryptomonas erosa	89,853
Rhodomonas minuta	24,505

Proctor Lake FC (320040098293501)

Phytoplankton Analyses October 1990 to September 1991

Date	3-06-91
Time	0841
TOTAL CELLS/mL	3,920,843
NUMBER OF SPECIES	31
DEPTH COLLECTED (ft.)	0.6

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Cyclotella meneghiniana	1,698
Cyclotella ocellata	728
Melosira granulata	45,614
Melosira varians	971
Order Pennales	
Achnanthes minutissima	11,310
Fragilaria vaucheriae	11,310
Nitzschia acicularis	28275
Nitzschia lanceolata	16965
Synedra delicatissima	5655
CHLOROPHYTA (Green algae)	
Ankistrodesmus falcatus	24,505
Ankistrodesmus falcatus var. *mirabilis*	24,505
Carteria sp.	49,011
Chlorella elipsiodea	130,695
Chlorococcum humicola	32,674
Crucigena tetrapedia	32,674
Dictyosphaerium pulchellum	147,032
Kirchneriella obesa	8,168
Micractinium pusillum	32,674
Scenedesmus bijuga	16,337
Scenedesmus opoliensis	32,674
Selenastrum minutum	8,168
Sphaerocystis Schroeteri	138,863
Tetraëron pentaedricum	8,168
CHRYSOPHYTA (Golden-brown algae)	
Unknown flagellate	16,337
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	800,505
Aphanocapsa elachista	147,032
Aphanothece nidulans	800,505
Chroococcus sp.	40,842
Merismopedia tenuissima	1,233,432
Phormidium mucicola	49,011
CRYPTOPHYTA (Cryptomonads)	
Cryptomonas erosa	24505

Proctor Lake AC (315814098291201)

Phytoplankton Analyses October 1990 to September 1991

Date	6-6-91
Time	0930
TOTAL CELLS/mL	223,000
NUMBER OF SPECIES	28
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Aulacoseira granulata	24
Cyclotella meneghiniana	317
Cyclotella ocellata	98
Melosira varians	1,146
Stephanodiscus astraea var. *minutula*	49
Order Pennales	
Cymbella minuta	91
Navicula arvensis	454
Navicula lanceolata	272
Navicula radiosa var. *tenella*	272
Nitzschia acicularis	1,543
Nitzschia dissipata	91
Nitzschia palea	1,361
CHLOROPHYTA (Green algae)	
Ankistrodesmus falcatus	817
Chlamydomonas sp.	4,084
Chlorella ellipsoidea	8,168
Chlorococcum humicola	4,084
Scenedesmus quadricauda	1,634
Selenastrum minutum	1,634
CHRYSOPHYTA (Golden-brown algae)	
*Dinobryon divergens*817	
Unknown flagellate	817
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	115,992
Aphanocapsa elachista	32,674
Aphanothece nidulans	8,985
Chroococcus dispersus	2,451
Dactylococcopsis fascicularis	2,451
Merismopedia sp.	30,223
Synechococcus sp.	1,634
PYRRHOPHYTA (Dinoflagellates)	
Ceratium hirundinella	817

Proctor Lake FC (320040098293501)

Phytoplankton Analyses October 1990 to September 1991

Date	6-6-91
Time	0850
TOTAL CELLS/mL	3,667,618
NUMBER OF SPECIES	33
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Aulacoseira italica var. *tenuissima*	1,438
Cyclotella meneghiniana	61,100
Cyclotella ocellata	719
Melosira varians	20,846
Stephanodiscus astraea var. *minutula*	5,751
Order Pennales	
Achnanthes hauckiana	4,133
Navicula arvensis	11,022
Navicula lanceolata	6,889
Navicula radiosa var. *tenella*	6,889
Nitzschia acicularis	57,868
Nitzschia longissima	4,133
Nitzschia palea	23,423
CHLOROPHYTA (Green algae)	
Ankistrodesmus falcatus	8,168
Chlamydomonas sp.	32,674
Chlorella ellipsoidea	8,168
Chlorococcum humicola	57,179
Crucigenia irregularis	65,347
Scenedesmus quadricauda	16,337
Selenastrum minutum	49,011
CHRYSOPHYTA (Golden-brown algae)	
Dinobryon divergens	8,168
Unknown flagellate	65,347
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	784,168
Aphanocapsa elachista	490,105
Aphanothece nidulans	49,011
Chroococcus dispersus	81,864
Dactylococcopsis fascicularis	24,505
Merismopedia sp.	81,684
Oscillatoria limnetica	571,789
Phormidium tenue	955,705
Synechococcus sp.	73,516
EUGLENOPHYTA (Euglenoids)	
Euglena sp.	8,168
PYRRHOPHYTA (Dinoflagellates)	
Ceratium hirundinella	8,168
CRYPTOPHYTA (Cryptomonads)	
Cryptomonas erosa	24,505

Proctor Lake AC (315814098291201)

Phytoplankton Analyses October 1990 to September 1991

Date	7-23-91
Time	1235
TOTAL CELLS/mL	127,134
NUMBER OF SPECIES	14
DEPTH COLLECTED (ft.)	1.1

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Stephanodiscus hantzschia	1,017
Order Pennales	
Nitzschia sp. 1	254
CHLOROPHYTA (Green algae)	
Ankistrodesmus falcatus	254
Chlorella vulgaris	3,051
Lagerheimia quadriseta	254
CHRYSOPHYTA (Golden-brown algae)	
Unknown statospore sp. 1	2,797
CYANOPHYTA (Blue-green algae)	
Anabaena sp. 1	22,630
Aphanocapsa elachista var. *planctonica*	65,348
Chroococcus prescottii	3,560
Merismopedia minima	11,696
Raphidiopsis curvata	12,205
PYRROPHYTA (Dinoflagellates)	
Amphidinium hyalinum	254
CRYPTOPHYTA (Cryptomonads)	
Chroomonas acuta	3,306
Cryptomonas erosa	508

08099500 LEON RIVER NEAR HASSE, TX

LOCATION.--Lat 31°57'28", long 98°27'32", Comanche County, Hydrologic Unit 12070201, on left bank 110 ft left and 70 ft upstream from left upstream end of bridge on U.S. Highways 67 and 377, 500 ft upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 0.3 mi upstream from Walnut Creek, 2.0 mi downstream from Proctor Lake, 2.1 mi northeast of Hasse, and 225.2 mi upstream from mouth.

DRAINAGE AREA.--1,261 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1939 to September 1991 (discontinued).

REVISED RECORDS.--WSP 1342: 1952. WSP 1392: 1952. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,115.01 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Since October 1963, flow has been regulated by Proctor Lake (station 08099400) 2.0 mi upstream. There are numerous diversions above station for municipal, steam powerplant operation and other uses. Gage-height telemeter at station.

AVERAGE DISCHARGE.--24 years (water years 1940-63), prior to completion of Proctor Lake, 151 ft³/s (109,400 acre-ft/yr); 28 years (water years 1964-91); regulated, 121 ft³/s (87,660 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,500 ft³/s May 24, 1952 (gage height, 21.49 ft); maximum gage height, 21.72 ft Oct. 4, 1959; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1858, occurred in May 1908, from information by local resident. At a site about 2.5 mi upstream, flood of May 1908 was 9.1 ft higher than that of May 24, 1952, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 753 ft³/s Aug. 14 at 1000 hours (gage height, 7.61 ft); minimum daily, 0.90 ft³/s Oct. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	2.4	190	2.0	2.3	2.0	22	22	14	96	35	619
2	57	2.2	192	2.2	2.3	1.8	21	14	14	57	36	618
3	58	2.2	191	2.0	2.2	1.8	20	17	13	24	36	620
4	55	2.7	191	2.2	2.2	1.9	20	25	23	24	35	616
5	51	2.1	191	2.3	2.1	13	20	22	122	20	38	612
6	50	1.8	135	2.2	9.1	30	20	3.5	236	13	49	614
7	51	1.8	49	2.3	58	2.6	20	2.5	358	13	48	613
8	50	4.1	25	2.3	102	2.0	17	7.7	566	27	48	615
9	44	2.2	25	4.0	239	1.9	2.1	3.5	562	52	47	610
10	18	1.9	24	2.9	243	1.8	1.5	2.9	558	52	50	607
11	1.1	2.0	25	3.0	133	1.9	1.4	3.2	341	51	50	439
12	1.1	2.0	25	2.4	2.5	1.8	1.5	3.2	86	52	45	146
13	1.2	4.0	24	2.4	2.0	1.5	1.4	2.3	56	52	3.7	43
14	1.1	38	25	2.3	1.9	1.7	1.4	1.9	12	52	200	43
15	.90	75	25	2.2	17	1.8	1.4	1.9	13	52	286	44
16	2.8	72	25	1.9	163	2.0	1.4	1.7	13	52	694	44
17	1.8	67	26	1.7	143	2.2	1.4	1.3	12	52	708	37
18	20	68	25	228	4.4	1.8	2.0	1.2	12	52	705	18
19	33	67	25	580	2.0	1.7	2.1	1.8	26	52	699	21
20	32	66	25	580	1.8	1.8	2.1	2.4	60	52	693	86
21	33	66	24	302	1.9	1.9	2.0	2.3	61	50	682	238
22	27	69	24	102	45	4.6	14	2.0	61	51	678	244
23	2.6	67	24	563	247	36	51	1.8	60	49	666	383
24	2.2	68	14	570	210	32	51	2.0	71	50	665	619
25	1.9	67	1.7	569	5.1	2.8	52	3.0	113	53	653	628
26	1.9	68	1.4	569	1.9	1.6	49	14	113	46	635	626
27	1.8	69	1.8	569	1.8	1.7	43	36	110	34	635	625
28	1.8	71	2.1	566	1.9	2.9	42	36	111	36	624	620
29	1.9	71	2.2	461	---	3.7	39	34	111	25	623	615
30	2.1	114	2.0	8.5	---	21	27	27	113	1.1	625	619
31	2.4	---	2.0	2.5	---	22	---	22	---	2.4	621	---
TOTAL	662.60	1214.4	1562.2	5710.3	1647.4	207.2	549.7	321.1	4021	1294.5	11612.7	12282
MEAN	21.4	40.5	50.4	184	58.8	6.68	18.3	10.4	134	41.8	375	409
MAX	58	114	192	580	247	36	52	36	566	96	708	628
MIN	.90	1.8	1.4	1.7	1.8	1.5	1.4	1.2	12	1.1	3.7	18
AC-FT	1310	2410	3100	11330	3270	411	1090	637	7980	2570	23030	24360

CAL YR 1990	TOTAL	288252.20	MEAN	790	MAX	20800	MIN	.90	AC-FT	571700
WTR YR 1991	TOTAL	41085.10	MEAN	113	MAX	708	MIN	.90	AC-FT	81490

08099500 LEON RIVER NEAR HASSE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1980 to September 1982, October 1990 to September 1991.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)
MAR											
06...	1125	54	680	8.4	14.0	25	1.1	9.2	94	3.3	210
JUN											
06...	1230	241	790	8.2	25.5	14	36	7.7	98	1.6	230
JUL											
23...	1000	53	801	7.8	26.5	8	15	5.3	69	1.6	210

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
MAR											
06...	70	59	16	50	1	6.1	140	54	99	0.20	3.2
JUN											
06...	97	61	19	64	2	6.3	130	58	120	0.20	2.6
JUL											
23...	91	55	18	69	2	6.8	120	58	140	0.30	3.2

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
MAR											
06...	374	25	9	16	--	0.010	<0.050	0.050	0.85	0.90	0.060
JUN											
06...	412	84	12	72	--	0.020	<0.050	0.030	0.87	0.90	0.110
JUL											
23...	423	34	9	25	0.072	0.020	0.092	0.150	0.75	0.90	0.060

DATE	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
MAR											
06...	<0.010	7.0	<1	110	0.5	<1.0	<5	<3	<10	7	<10
JUN											
06...	0.030	7.6	1	140	<0.5	<1.0	<5	<3	<10	<3	<10
JUL											
23...	0.010	6.6	2	120	<0.5	1.0	<5	<3	<10	7	<10

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
MAR										
06...	6	36	<0.1	<10	<10	<1	<1.0	410	<6	4
JUN										
06...	9	5	<0.1	<10	<10	<1	<1.0	490	<6	<3
JUL										
23...	9	35	<0.1	<10	<10	<1	<1.0	440	<6	11

08100000 LEON RIVER NEAR HAMILTON, TX

LOCATION.--Lat 31°47'19", long 98°07'16", Hamilton County, Hydrologic Unit 12070201, at downstream side of bridge on U.S. Highway 281, 2.2 mi upstream from Mesquite Creek, 3.6 mi downstream from Bear Creek, 5.9 mi north of Hamilton, and 172.9 mi upstream from mouth.

DRAINAGE AREA.--1,891 mi².

PERIOD OF RECORD.--January 1925 to September 1931, September 1960 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is 955.38 ft above National Geodetic Vertical Datum of 1929. Jan. 7, 1925, to Sept. 30, 1931, nonrecording gage 1.4 mi downstream at datum 1.87 ft higher. Sept. 1 to Nov. 22, 1960, nonrecording gage at same site and at 5.00-foot higher datum. Nov. 22, 1960, to Sept. 30, 1972, recording gage at same site and at 5.00-foot higher datum.

REMARKS.--Records good. Since 1960, at least 67 percent of the drainage area above this station has been regulated by Proctor Lake (station 08099400) 54 miles upstream and by several other smaller reservoirs. There are numerous diversions above station for irrigation, municipal supply, and for industrial uses. Flow is affected at times by discharge from the flood-detention pools of 14 floodwater-retarding structures with a combined detention capacity of 11,610 acre-ft. These structures control runoff from 43.9 mi² in the northeast tributaries drainage basin. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter (DCP) at station.

AVERAGE DISCHARGE.--6 years (water years 1926-31) unregulated, 130 ft³/s (94,180 acre-ft/yr); 31 years (water years 1961-91) regulated, 163 ft³/s (118,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,000 ft³/s May 4, 1990 (gage height, 33.26 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1858, 38.4 ft in May 1908 and December 1913; flood in September 1911 reached a stage of 37.0 ft, all at present site and datum, from information by local residents. The flood in October 1959 reached a stage of 34.1 ft, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,070 ft³/s Aug. 14 at 2100 hours (gage height, 12.25 ft); minimum daily, 1.2 ft³/s Aug. 8, 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	4.7	76	14	54	16	11	43	20	84	18	373
2	57	4.6	117	14	37	15	29	34	15	87	8.1	375
3	60	5.9	136	14	32	13	28	26	20	72	4.3	376
4	63	9.0	137	13	30	12	28	30	19	91	2.1	370
5	64	8.8	138	13	28	11	23	46	30	28	7.8	374
6	59	11	139	13	27	11	20	75	31	16	3.4	374
7	54	8.9	e121	13	26	10	21	47	121	10	1.8	388
8	53	15	e92	12	26	34	24	59	168	9.7	1.2	395
9	67	14	64	14	66	27	24	256	361	6.9	1.2	390
10	65	15	45	18	128	15	23	97	378	4.4	6.2	385
11	59	26	41	18	157	11	15	53	382	4.3	14	384
12	42	17	39	25	152	9.9	8.9	37	344	19	16	351
13	28	12	39	23	76	9.0	247	28	125	13	91	173
14	18	9.5	38	19	37	8.5	44	22	90	22	389	90
15	14	9.2	38	17	25	7.9	16	19	70	26	485	63
16	12	24	39	15	22	7.7	10	17	40	28	228	56
17	11	78	39	14	40	8.8	130	14	32	27	446	52
18	10	79	40	16	122	8.8	168	12	32	16	458	51
19	8.9	75	40	17	88	9.6	26	10	33	15	445	49
20	9.1	76	39	321	40	11	12	8.6	27	12	427	77
21	31	77	38	405	27	10	8.2	7.3	26	11	415	78
22	43	84	37	346	24	11	6.7	6.1	61	11	405	123
23	46	82	37	104	21	11	6.5	4.9	62	16	401	164
24	48	81	37	277	77	9.7	8.7	4.0	61	18	393	178
25	34	79	38	411	156	22	26	5.7	57	16	381	357
26	22	79	37	414	95	43	51	5.5	62	15	372	396
27	9.8	80	27	417	37	28	56	12	80	23	358	401
28	8.0	78	19	416	21	16	64	11	79	40	347	401
29	8.0	76	16	414	---	12	62	20	81	30	367	398
30	7.8	76	14	395	---	9.6	46	33	82	39	388	396
31	5.8	---	14	143	---	8.8	---	33	---	36	365	---
TOTAL	1076.4	1294.6	1771	4365	1671	437.3	1243.0	1076.1	2989	846.3	7245.1	8038
MEAN	34.7	43.2	57.1	141	59.7	14.1	41.4	34.7	99.6	27.3	234	268
MAX	67	84	139	417	157	43	247	256	382	91	485	401
MIN	5.8	4.6	14	12	21	7.7	6.5	4.0	15	4.3	1.2	49
AC-FT	2140	2570	3510	8660	3310	867	2470	2130	5930	1680	14370	15940

CAL YR 1990	TOTAL	273510.7	MEAN	749	MAX	20700	MIN	4.2	AC-FT	542500
WTR YR 1991	TOTAL	32052.8	MEAN	87.8	MAX	485	MIN	1.2	AC-FT	63580

e Estimated

08100500 LEON RIVER AT GATESVILLE, TX

LOCATION.--Lat 31°25'58", long 97°45'42", Coryell County, Hydrologic Unit 12070201, on right bank at upstream side of county road bridge, 800 ft downstream from U.S. Highway 84 bridge in Gatesville, 0.3 mi downstream from Dodds Creek, 5.2 mi upstream from Cottonwood Creek, and 99.0 mi upstream from mouth.

DRAINAGE AREA.--2,342 mi².

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder, and data collection platform (DCP). Datum of gage is 723.85 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1950, to Feb. 8, 1951, nonrecording gage; Feb. 9, 1951, to Jan. 21, 1969, water-stage recorder; all at site 800 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Some upstream regulation by Proctor Lake (08099400) and other smaller reservoirs. Flow at times is slightly affected by discharge from 18 floodwater-retarding structures with a combined detention capacity of 12,600 acre-ft. These structures control runoff from 47.0 mi² in the northeast tributaries and Pecan Creek drainage basins. There are numerous diversions above station for irrigation, municipal supply, and oil field operation. The city of Hamilton, located about 70 mi upstream from this station, diverts flow from the river for municipal use and returned sewage effluent to the stream. The city of Gatesville obtains all of their municipal water supply from ground-water wells, but discharges sewage effluent back to the Leon River downstream from this station. Several observations of water temperature were made during the year. Gage-height telemeter (DCP) at station.

AVERAGE DISCHARGE.--41 years, 247 ft³/s (179,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,200 ft³/s Oct. 4, 1959 (gage height, 34.14 ft), from rating curve extended above 41,000 ft³/s; no flow at times in 1951-52, 1954-55, 1971, 1978-79, and 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1854, about 35 ft in May 1908, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,120 ft3/s May 5 at 1400 hours (gage height, 10.45 ft); minimum daily, 4.9 ft3/s Aug. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	21	92	28	381	86	27	115	30	82	26	426
2	49	19	92	28	153	62	24	73	40	84	32	427
3	69	21	92	28	83	50	23	64	38	119	31	443
4	74	26	152	27	65	45	23	66	42	152	21	434
5	74	23	175	27	55	42	35	1490	85	98	13	433
6	75	20	179	29	47	42	40	445	55	107	9.0	433
7	76	22	182	28	40	41	40	154	43	50	6.8	442
8	71	44	183	27	36	40	38	645	42	31	5.4	447
9	86	44	182	39	33	38	33	1120	167	23	4.9	447
10	69	33	130	47	31	36	31	466	307	17	9.8	445
11	76	34	91	37	48	60	34	369	415	14	20	442
12	76	31	65	38	164	57	39	216	420	12	7.0	440
13	75	28	55	36	196	47	68	147	418	11	6.0	438
14	63	37	51	32	175	41	851	129	317	8.9	51	363
15	50	33	50	33	89	38	442	100	171	6.1	112	219
16	39	29	50	35	54	38	108	91	173	11	536	122
17	31	27	49	32	41	39	126	85	174	11	430	83
18	26	25	48	63	33	38	319	69	107	17	342	76
19	24	68	50	58	32	36	568	66	66	20	489	69
20	22	97	51	42	147	34	177	60	51	20	480	63
21	25	93	51	41	114	36	76	56	45	17	464	60
22	25	110	49	434	77	34	49	59	40	12	447	83
23	25	105	48	465	55	32	36	53	33	9.3	442	700
24	50	107	48	333	46	31	30	49	45	9.7	443	332
25	55	99	49	152	37	29	27	101	62	35	437	234
26	57	99	49	432	95	28	28	79	62	109	428	287
27	53	100	51	472	226	28	26	60	59	41	401	418
28	39	95	51	476	149	37	43	51	54	28	416	431
29	30	92	51	478	---	57	298	39	78	20	404	432
30	25	91	41	471	---	42	318	31	81	21	408	435
31	23	---	32	473	---	40	---	30	---	36	430	---
TOTAL	1568	1673	2539	4941	2702	1304	3977	6578	3720	1232.0	7351.9	10104
MEAN	50.6	55.8	81.9	159	96.5	42.1	133	212	124	39.7	237	337
MAX	86	110	183	478	381	86	851	1490	420	152	536	700
MIN	22	19	32	27	31	28	23	30	30	6.1	4.9	60
AC-FT	3110	3320	5040	9800	5360	2590	7890	13050	7380	2440	14580	20040

CAL YR 1990	TOTAL	330613	MEAN	906	MAX	15000	MIN	15	AC-FT	655800
WTR YR 1991	TOTAL	47689.9	MEAN	131	MAX	1490	MIN	4.9	AC-FT	94590

08101000 COWHOUSE CREEK AT PIDCOKE, TX

LOCATION.--Lat 31°17'05", long 97°53'05", Coryell County, Hydrologic Unit 12070202, on left bank 125 ft downstream from bridge on Farm Road 116, 0.1 mi downstream from Bee House Creek, 0.6 mi northeast of Pidcoke, 4.9 mi upstream from Table Rock Creek, and 34.6 mi upstream from mouth.

DRAINAGE AREA.--455 mi².

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WSP 1712: 1955. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 736.71 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No known diversion above station. Several observations of water temperatures were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--41 years, 79.5 ft³/s (2.37 in/yr), 57,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,200 ft³/s Oct. 4, 1959 (gage height, 40.1 ft, from floodmark); from rating curve extended above 30,000 ft³/s on basis of slope-area measurement of 55,800 ft³/s; no flow at times. Maximum stage since at least 1882, that of Oct. 4, 1959, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
July 3	1930	*5,000	*13.32	No other peaks greater than base discharge.			

Minimum daily discharge, 0.25 ft³/s Oct. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.53	.81	1.4	2.9	9.8	11	5.2	23	9.5	4.1	1.5	.50
2	.38	.75	1.4	3.1	11	11	5.2	15	8.2	3.8	1.4	.41
3	.30	.78	1.3	3.4	11	11	5.1	81	8.3	415	1.1	.50
4	.28	2.1	1.0	3.2	13	10	4.9	76	11	76	1.0	.60
5	.28	1.4	1.0	3.4	14	9.1	4.4	132	9.1	16	.91	.85
6	.25	1.2	1.1	4.1	15	8.7	4.4	52	8.1	9.3	.84	1.7
7	.56	1.0	1.1	3.9	15	8.4	4.3	29	47	6.8	.83	2.4
8	1.0	3.7	1.1	3.7	13	8.2	4.1	353	91	8.0	.70	1.4
9	2.2	6.9	1.1	7.2	12	8.0	3.9	196	33	5.7	.75	.95
10	1.5	4.9	1.2	13	12	7.4	3.4	61	25	4.4	19	.72
11	1.3	3.5	1.3	22	12	7.7	3.4	40	19	3.5	4.1	.66
12	1.2	2.9	1.3	15	12	7.5	3.4	33	16	3.2	1.3	.39
13	1.1	2.4	1.4	12	11	6.9	26	28	12	3.4	1.2	.35
14	.94	2.0	1.4	9.9	11	7.0	197	25	10	2.8	5.6	.32
15	.84	1.2	1.4	9.0	11	7.3	25	25	21	2.6	6.6	.31
16	.76	1.1	1.4	8.0	10	8.9	9.8	24	81	2.5	2.9	.33
17	.73	.96	1.4	7.0	10	9.7	7.3	23	71	2.3	1.7	1.8
18	.64	.95	1.5	12	11	9.6	537	22	33	2.3	1.2	.87
19	.56	.99	1.4	21	11	9.0	75	24	25	2.1	.90	1.4
20	.55	1.0	1.4	21	11	8.6	38	18	20	2.1	.71	1.3
21	1.0	1.0	1.6	16	12	8.6	26	16	15	1.9	1.0	.72
22	.99	1.5	1.4	14	15	8.4	20	17	13	1.6	.70	.54
23	.89	3.6	1.4	12	17	7.6	16	17	11	1.5	.63	11
24	.86	8.5	1.5	12	15	7.2	14	16	9.3	1.5	.61	20
25	.77	4.2	1.5	12	13	6.4	13	100	7.4	4.3	.62	5.6
26	.79	3.1	1.8	12	11	6.6	12	55	7.6	29	.54	2.4
27	1.0	2.5	2.0	12	11	6.9	10	29	5.9	4.8	.45	1.3
28	.95	2.0	2.0	11	10	6.6	12	20	5.0	2.8	.45	.89
29	.98	1.6	2.4	11	---	6.7	227	15	4.6	2.3	.44	.65
30	.89	1.5	3.3	11	---	6.2	43	12	4.6	2.0	.44	.53
31	.84	---	2.9	10	---	5.6	---	11	---	1.5	.43	---
TOTAL	25.86	70.04	47.4	3[illegible]7.8	339.8	251.8	1359.8	1588	641.6	629.1	60.55	61.39
MEAN	.83	2.33	1.53	10.3	12.1	8.12	45.3	51.2	21.4	20.3	1.95	2.05
MAX	2.2	8.5	3.3	22	17	11	537	353	91	415	19	20
MIN	.25	.75	1.0	2.9	9.8	5.6	3.4	11	4.6	1.5	.43	.31
AC-FT	51	139	94	630	674	499	2700	3150	1270	1250	120	122
CFSM	.00	.01	.00	.02	.03	.02	.10	.11	.05	.04	.00	.00
IN.	.00	.01	.00	.03	.03	.02	.11	.13	.05	.05	.00	.01

CAL YR 1990 TOTAL 34377.88 MEAN 94.2 MAX 9250 MIN .25 AC-FT 68190 CFSM .21 IN. 2.81
WTR YR 1991 TOTAL 5393.14 MEAN 14.8 MAX 537 MIN .25 AC-FT 10700 CFSM .03 IN. .44

08102000 BELTON LAKE NEAR BELTON, TX

LOCATION.--Lat 31°06'22", long 97°28'28", Bell County, Hydrologic Unit 12070201, in intake structure at Belton Dam on Leon River, 1.6 mi upstream from bridge on State Highway 317, 3.5 mi north of Belton, 8.9 mi upstream from Nolan Creek, and 16.7 mi upstream from mouth.

DRAINAGE AREA.--3,531 mi².

PERIOD OF RECORD.--March 1954 to current year. Prior to October 1970, published as Belton Reservoir.
Water-quality records.--Chemical and biochemical analyses: October 1961 to September 1984.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Feb. 20, 1955, nonrecording gage at present site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 5,524 ft long, including a 1,300-foot uncontrolled broad-crested spillway in a saddle near left end of dam and a 418-foot-long dike. Deliberate impoundment began Mar. 8, 1954, and the dam was completed in December 1954. The lake was built for flood control and conservation storage. The controlled outlet works consist of a 22.0-foot-diameter conduit that is controlled by three 7.0- by 22.0-foot broome-type gates. The service outlet consists of a 36- by 36-inch gated outlet that discharges into the flood-control conduit. Beginning January 1976, the capacity table is based on a sedimentation survey made in 1966. There are many small diversions upstream for irrigation, municipal supply, and oil field operations. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08100500. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	662.0	-
Design flood	656.9	-
Crest of spillway	631.0	1,086,000
Top of conservation pool	594.0	442,000
Service outlet (invert)	540.0	51,240
Lowest gated outlet (invert)	483.0	0

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 870,300 acre-ft June 6, 1957 (elevation, 620.45 ft); minimum since initial filling, 113,400 acre-ft Dec. 16, 1956 (elevation, 553.06 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 458,000 acre-ft May 9 (elevation, 595.27 ft); minimum daily, 440,700 acre-ft Aug. 13 (elevation, 593.90 ft).

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

593.0	429,700	595.0	454,500
594.0	442,000	596.0	467,300

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	447900	447000	449200	445600	445000	444700	443200	445000	445300	451100	444300	446800
2	447400	446700	449200	446300	444800	445100	443200	445300	445300	451000	443800	447700
3	447200	446500	449000	446300	444500	444500	443200	450500	446600	452600	443500	447600
4	446600	447600	448700	446100	445200	444100	443400	453300	446500	454700	443000	447700
5	446500	446800	448500	446100	445000	443600	443500	454200	446300	454700	442700	448100
6	446000	446700	448200	446700	444600	443400	443500	455700	446100	454000	442400	448200
7	445800	446700	448400	446600	444000	442900	443400	454400	446300	453500	442100	448100
8	445700	448900	448400	446700	443500	442500	443400	457000	446600	452900	441700	447900
9	449700	450000	448400	449400	443200	442400	443500	458000	446600	452000	441400	447400
10	449400	449900	448400	451100	443000	442200	443200	456700	446500	451400	441400	446800
11	449100	449900	448400	451600	442900	442000	443500	454000	446500	450600	441100	446300
12	448700	449900	448400	451800	443000	442200	443400	451400	446600	449900	441000	445800
13	448100	449700	448500	451800	443500	442200	445100	449200	446700	449600	440700	445300
14	447900	449600	448200	451400	443800	442100	445600	450100	446800	449200	442900	445200
15	447600	449400	448400	450100	444000	442400	446700	450500	452400	448900	442900	444500
16	447400	449400	448000	448900	444200	442900	447600	450100	456600	448700	442900	443600
17	447200	449200	448100	448000	444500	442700	447900	449200	457700	448400	443400	443200
18	446700	449200	448000	449000	445300	442900	449700	448500	457100	448000	443800	443100
19	446100	449000	447700	448700	445600	442500	450500	447700	455900	447600	444100	446300
20	445700	448900	447700	448100	445600	442500	450100	446800	454700	447200	444500	446100
21	449100	449000	447700	446800	446100	442900	449500	445800	453900	446800	444800	445500
22	449000	449200	447600	445700	446300	443000	448600	445200	453500	446600	445300	445100
23	448700	449400	447000	445500	446000	443000	447600	445000	452800	446200	446000	445200
24	448600	449400	446500	445600	446000	443000	446300	444600	452100	446800	446300	446300
25	448400	449200	446100	445600	445600	443000	446000	447500	451900	447000	446700	445700
26	447900	449500	446300	445100	445200	442900	445300	447900	451800	446700	446800	445200
27	447700	449700	446100	445000	444800	443400	444800	447600	451600	446700	446800	444500
28	447600	449700	446000	444800	444700	443600	444300	447600	451400	446500	446500	444200
29	447500	449500	446600	444800	---	443600	444200	447400	451400	446300	446100	444000
30	447500	449200	446300	445100	---	443500	444300	447000	451200	445800	446300	443700
31	447500	---	445700	445100	---	443400	---	445800	---	445100	447000	---
MAX	449700	450000	449200	451800	446300	445100	450500	458000	457700	454700	447000	448200
MIN	445700	446500	445700	444800	442900	442000	443200	444600	445300	445100	440700	443100
(†)	594.44	594.58	594.30	594.25	594.22	594.11	594.14	594.31	594.74	594.25	594.40	594.14
(ϕ)	-700	+1700	-3500	-600	-400	-1300	+900	+1500	+5400	-6100	+1900	-3300

CAL YR 1990 MAX 645600 MIN 421600 (ϕ) +22300
WTR YR 1991 MAX 458000 MIN 440700 (ϕ) -4500

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08102500 LEON RIVER NEAR BELTON, TX

LOCATION.--Lat 31°04'12", long 97°26'28", Bell County, Hydrologic Unit 12070201, on left bank 1,400 ft upstream from bridge on Farm Road 817, 2,000 ft upstream from concrete dam, 1.0 mi upstream from bridge on Interstate Highway 35 and U.S. Highway 81, 1.6 mi northeast of Belton, 3.2 mi downstream from Belton Dam, 5.2 mi upstream from Nolan Creek, and 13.1 mi upstream from mouth.

DRAINAGE AREA.--3,542 mi².

PERIOD OF RECORD.--October 1923 to current year.
Water-quality records.--Chemical and biochemical analyses: March 1961 to Augsut 1964. Water temperature: March 1957 to October 1972. Water Temperature recorded continuously from March 1957 to September 1964.

REVISED RECORDS.--WSP 1442: 1925(M), 1935(M), 1936, 1938(M), 1941-42(M), 1944-45(M). WSP 1712: 1937(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder above concrete dam. Datum of gage is 476.68 ft above National Geodetic Vertical Datum of 1929. Prior to May 21, 1931, nonrecording gage.

REMARKS.--No estimated daily discharges. Records good. The city of Temple diverts water from the pool at gage and returns sewage effluent to Little Elm Creek downstream from station. The Brazos River Authority returns sewage effluent to the Leon River downstream from station for their Temple-Belton plant. Flow regulated by Belton Lake (station 08102000) since Mar. 8, 1954. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--30 years (water years 1924-53) unregulated, 659 ft³/s (477,400 acre-ft/yr); 37 years (water years 1954-90) regulated, 500 ft³/s (362,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,500 ft³/s Apr. 22, 1945 (gage height, 24.41 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1913 reached a stage of 25 ft, and flood in September 1921 reached a stage of 21 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,290 ft³/s May 28, 29, 30, 31 at 1100, 0600, 0100, 0800 hours, respectively (gage height, 7.78 ft); no flow Jan.18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	59	49	70	479	250	8.6	16	231	37	21	237
2	122	58	54	74	489	248	10	17	142	36	21	240
3	119	61	50	77	492	244	9.7	32	49	34	22	235
4	120	55	53	73	491	242	6.9	29	148	41	25	241
5	121	44	53	72	489	242	5.0	16	219	151	17	262
6	117	43	54	78	488	242	12	377	224	224	7.6	389
7	117	48	54	75	484	242	7.8	1160	228	226	4.8	461
8	107	55	58	76	367	138	6.2	764	225	221	5.1	462
9	116	52	56	82	280	54	4.1	903	226	227	4.1	461
10	108	45	55	63	278	50	4.8	1790	226	221	11	460
11	110	46	55	36	187	47	4.1	1780	226	226	12	464
12	104	48	52	38	57	32	3.4	1780	226	119	11	468
13	106	51	59	143	58	22	9.9	1420	222	27	14	469
14	97	45	62	482	59	15	11	909	225	28	17	469
15	93	48	76	695	59	18	5.2	590	243	26	19	469
16	101	46	75	692	63	14	100	588	229	25	16	469
17	88	52	77	688	59	17	215	585	436	27	13	247
18	98	51	77	694	66	10	213	589	681	29	11	81
19	100	51	70	685	59	13	380	593	677	20	10	82
20	83	51	77	690	58	14	501	594	579	20	8.9	138
21	75	51	70	687	60	16	505	593	344	21	7.1	193
22	57	53	73	689	129	11	497	388	248	20	9.3	194
23	62	50	71	570	247	9.5	500	229	247	24	16	203
24	57	52	69	479	258	7.8	492	240	242	29	25	206
25	57	54	69	479	246	8.1	382	295	145	36	26	291
26	60	51	75	482	254	8.7	275	249	39	34	103	363
27	59	53	70	480	249	11	285	254	37	31	228	359
28	59	53	74	484	248	9.0	291	242	36	30	230	362
29	59	50	74	479	---	12	143	238	45	24	230	357
30	60	54	72	479	---	9.3	18	232	40	22	236	357
31	58	---	71	482	---	12	---	230	---	21	236	---
TOTAL	2807	1530	2004	11373	6753	2268.4	4905.7	17722	7085	2257	1616.9	9689
MEAN	90.5	51.0	64.6	367	241	73.2	164	572	236	72.8	52.2	323
MAX	122	61	77	695	492	250	505	1790	681	227	236	469
MIN	57	43	49	36	57	7.8	3.4	16	36	20	4.1	81
AC-FT	5570	3030	3970	22560	13390	4500	9730	35150	14050	4480	3210	19220

CAL YR 1990 TOTAL 350816.58 MEAN 961 MAX 5270 MIN .00 AC-FT 695800
WTR YR 1991 TOTAL 70011.0 MEAN 192 MAX 1790 MIN 3.4 AC-FT 138900

08103800 LAMPASAS RIVER NEAR KEMPNER, TX

LOCATION.--Lat 31°04'54", long 98°00'59", Lampasas County, Hydrologic Unit 12070203, on left bank 800 ft upstream from centerline of U.S. Highway 190, 0.6 mi upstream from Mesquite Creek, 0.8 mi west of Kempner, 0.9 mi downstream from Sulphur Creek, and 72.3 mi upstream from mouth.

DRAINAGE AREA.--818 mi².

PERIOD OF RECORD.--October 1962 to current year.
Water-quality records.--Chemical analyses: March to June 1964, October 1980 to September 1982, October 1987 to August 1990. Biochemical analyses: October 1980 to September 1982, October 1987 to August 1990.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage and data collection platform (DCP). Datum of gage is 828.38 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 4, 1967, at site 800 ft downstream at present datum.

REMARKS.--Records good, except those for estimated daily discharges, which are fair. At times, flow is affected by discharge from the flood-detention pools of 13 floodwater-retarding structures with a combined detention capacity of 38,570 acre-ft. These structures control runoff from 131 mi² in the Sulphur and Bennett Creeks drainage basins. There are many small diversions above station for irrigation and municipal supply. The city of Lampasas diverts water upstream from this station and returns sewage effluent to Sulphur Creek, upstream from this station. Several observations of water temperature were made during the year. Gage-height telemeter (DCP) at station.

AVERAGE DISCHARGE.--29 years, 122 ft³/s (88,390 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,000 ft³/s May 16, 1965 (gage height, 34.0 ft at present site [corrected]); minimum daily, 1.4 ft³/s July 17, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1871, occurred in September 1873 (stage about 45 ft). Flood of May 13, 1957, reached a stage of 37 ft, and flood of Oct. 4, 1959, reached a stage of 34 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 7	1200	*4,070	*7.88	No other peak greater than base discharge.			

Minimum daily discharge, 12 ft³/s Oct. 13, 15, 16, and Aug. 28, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	26	26	30	70	69	43	60	84	75	26	18
2	23	26	28	30	70	68	40	49	79	70	26	14
3	20	29	29	31	70	67	41	705	99	98	24	31
4	20	42	29	30	81	64	43	704	191	141	25	15
5	20	32	27	30	90	64	43	711	133	73	25	15
6	21	29	27	30	91	64	53	227	106	61	23	25
7	23	31	27	30	86	62	47	175	1180	56	23	28
8	20	60	27	30	80	62	47	570	298	56	18	25
9	101	79	27	53	79	59	45	445	188	57	17	23
10	30	48	27	80	76	57	43	227	168	50	26	23
11	17	36	28	64	76	56	43	189	149	47	73	20
12	13	34	29	59	76	56	41	166	144	41	26	19
13	12	32	29	51	e79	56	39	145	128	39	26	20
14	13	32	29	46	e76	55	66	681	113	37	30	18
15	12	32	29	43	e76	54	75	558	280	33	32	21
16	12	32	29	41	73	55	56	218	485	32	34	23
17	16	32	30	41	70	56	52	183	701	30	26	24
18	40	32	30	90	70	56	86	165	223	30	28	18
19	19	32	29	115	70	56	95	152	183	27	23	32
20	17	32	29	87	70	56	71	149	162	28	23	55
21	90	32	30	84	70	56	59	144	148	26	20	32
22	38	33	30	82	88	56	56	135	135	24	24	25
23	23	38	30	81	82	52	50	126	125	25	23	26
24	23	38	28	84	79	50	49	123	119	27	22	26
25	22	38	29	83	75	49	52	198	111	28	18	24
26	23	40	29	82	70	49	54	177	103	26	15	25
27	23	40	29	82	69	49	53	137	95	24	14	23
28	23	33	30	79	65	49	52	114	88	23	12	20
29	22	32	31	78	---	49	73	105	77	23	12	19
30	24	30	32	72	---	47	87	95	76	21	13	17
31	25	---	30	73	---	47	---	91	---	26	16	---
TOTAL	808	1082	893	1891	2127	1745	1654	7924	6171	1354	743	704
MEAN	26.1	36.1	28.8	61.0	76.0	56.3	55.1	256	206	43.7	24.0	23.5
MAX	101	79	32	115	91	69	95	711	1180	141	73	55
MIN	12	26	26	30	65	47	39	49	76	21	12	14
AC-FT	1600	2150	1770	3750	4220	3460	3280	15720	12240	2690	1470	1400

CAL YR 1990 TOTAL 51951.0 MEAN 142 MAX 7940 MIN 7.5 AC-FT 103000
WTR YR 1991 TOTAL 27096 MEAN 74.2 MAX 1180 MIN 12 AC-FT 53740

e Estimated

08103900 SOUTH FORK ROCKY CREEK NEAR BRIGGS, TX
(Hydrologic bench-mark station)

LOCATION.--Lat 30°54'41", long 98°02'12", Burnet County, Hydrologic Unit 12070203, at upstream side of bridge on Ranch Road 963, 6 mi above confluence with North Fork Rocky Creek, 7 mi west of Briggs, and 12.9 mi above mouth.

DRAINAGE AREA.--33.3 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WRD TX-74-1: 1972-73(P). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder, concrete control, and crest-stage gages. Datum of gage is 955.8 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Recording rain gage at station. Gage-height telemetry at station.

AVERAGE DISCHARGE.--28 years, 9.76 ft³/s (3.98 in/yr), 7,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft³/s June 19, 1976 (gage height, 22.70 ft), from rating curve extended above 1,000 ft³/s on basis of slope-area measurements of 3,580 and 8,510 ft³/s and conveyance-slope study; no flow for many days most years.
Maximum stage since at least 1904, 22.70 ft June 19, 1976.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
June 15	0730	1,080	5.38	Sept. 23	0800	*1,200	*5.61

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.26	.46	13	15	3.9	1.5	8.0	7.2	.89	.00
2	.00	.00	.26	.45	13	12	2.6	1.4	7.4	6.0	.75	.00
3	.00	.00	.27	.52	13	10	2.6	45	13	5.3	.67	.00
4	.00	.00	.40	.52	25	9.4	2.6	55	13	63	.64	.00
5	.00	.00	.38	.55	22	9.4	2.6	16	9.0	20	.52	.00
6	.00	.00	.43	.68	18	8.7	2.6	10	6.8	10	.58	.00
7	.00	.00	.46	.84	16	8.3	2.6	8.9	17	7.9	.46	1.3
8	.00	.37	.49	.86	15	8.0	2.6	101	10	8.4	.37	.27
9	.00	.65	.55	15	15	8.0	2.6	36	8.6	7.3	.34	.00
10	.00	.63	.58	18	14	7.8	2.3	26	7.8	6.0	.33	.00
11	.00	.89	.62	9.5	14	8.3	2.3	24	7.1	5.2	.34	.00
12	.00	.68	.55	7.3	14	7.9	2.2	20	6.3	5.1	.25	.00
13	.00	.43	.48	5.9	14	7.3	2.2	18	5.7	4.6	.23	.00
14	.00	.29	.48	5.9	12	6.4	5.5	16	4.8	4.1	.30	.00
15	.00	.18	.56	5.7	12	6.7	3.3	17	102	3.6	.39	.00
16	.00	.16	.58	4.9	11	8.8	2.2	15	26	3.3	.35	.00
17	.00	.08	.61	4.6	13	11	2.3	14	17	2.9	.31	.00
18	.00	.00	.48	57	13	11	3.0	13	14	2.8	.26	.00
19	.00	.00	.45	34	12	10	2.8	16	12	2.7	.06	.00
20	.00	.00	.46	24	11	9.7	2.5	16	11	2.5	.00	.55
21	2.3	.00	.46	20	12	9.8	2.2	13	10	2.2	.00	.17
22	3.4	.20	.46	20	16	9.7	2.2	12	9.4	2.1	.00	.00
23	.76	.62	.31	18	12	8.6	2.1	11	22	1.6	.00	15
24	.16	.72	.27	19	12	7.9	1.8	36	11	1.6	.00	2.9
25	.00	.54	.26	18	11	7.8	1.6	43	9.1	1.5	.00	.97
26	.00	.37	.26	16	10	8.1	1.6	17	8.3	1.4	.00	.65
27	.00	.35	.26	16	10	8.2	1.6	13	7.4	1.3	.00	.52
28	.00	.35	.26	15	10	8.3	2.0	11	7.4	1.2	.00	.44
29	.00	.35	.39	14	---	8.3	1.9	10	7.4	1.1	.00	.39
30	.00	.27	.46	14	---	6.4	1.6	9.5	7.4	1.0	.00	.35
31	.00	---	.46	14	---	6.4	---	8.8	---	.94	.00	---
TOTAL	6.62	8.13	13.20	380.68	383	273.2	73.9	654.1	405.9	193.84	8.04	23.51
MEAN	.21	.27	.43	12.3	13.7	8.81	2.46	21.1	13.5	6.25	.26	.78
MAX	3.4	.89	.62	57	25	15	5.5	101	102	63	.89	15
MIN	.00	.00	.26	.45	10	6.4	1.6	1.4	4.8	.94	.00	.00
AC-FT	13	16	26	755	760	542	147	1300	805	384	16	47
CFSM	.01	.01	.01	.37	.41	.26	.07	.63	.41	.19	.01	.02
IN.	.01	.01	.01	.43	.43	.31	.08	.73	.45	.22	.01	.03

CAL YR 1990	TOTAL	189.09	MEAN	.52	MAX	89	MIN	.00	AC-FT	375	CFSM	.02	IN.	.21
WTR YR 1991	TOTAL	2424.12	MEAN	6.64	MAX	102	MIN	.00	AC-FT	4810	CFSM	.20	IN.	2.71

08103900 SOUTH FORK ROCKY CREEK NEAR BRIGGS, TX--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1961 to January 1964. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: July 1971 to July 1982. Sediment analyses: May to June 1963, February 1968 to current year. Radiochemical analyses: January 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
OCT												
22...	1040	2.8	324	7.9	12.5	15	--	--	8000	10000	140	17
JAN												
10...	1245	14	425	7.9	9.0	6.5	9.0	79	K1400	8000	210	20
APR												
24...	0850	1.7	535	7.8	20.0	0.60	6.6	75	460	1100	250	27
JUL												
29...	0950	1.1	506	7.6	26.0	1.0	6.3	80	K32	3500	240	25

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT												
22...	36	13	11	0.4	2.1	0	156	128	21	19	0.20	7.8
JAN												
10...	51	20	12	0.4	1.9	0	234	192	24	18	0.30	7.2
APR												
24...	58	25	20	0.6	1.6	0	272	223	25	30	0.40	9.1
JUL												
29...	55	25	18	0.5	1.6	0	265	217	18	25	0.40	11

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)
OCT												
22...	179	188	--	--	0.020	<0.010	<0.100	<0.100	0.030	0.070	0.37	--
JAN												
10...	248	252	--	0.080	<0.010	0.020	<0.100	0.100	0.020	0.020	0.48	--
APR												
24...	297	305	0.120	--	0.010	<0.010	0.130	<0.050	0.020	<0.010	--	--
JUL												
29...	268	286	--	--	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	--	0.20

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)
OCT												
22...	0.40	0.020	0.080	<0.010	0.020	17	0.13	96	90	1	30	<0.5
JAN												
10...	0.50	<0.010	<0.010	<0.010	<0.010	6	0.23	96	30	<1	37	<0.5
APR												
24...	<0.20	0.010	0.010	<0.010	<0.010	6	0.03	85	<10	<1	52	<0.5
JUL												
29...	0.30	<0.010	<0.010	<0.010	<0.010	6	0.02	68	<10	<1	48	<0.5

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)
OCT												
22...	<1.0	<1	<3	3	34	<1	6	4	<0.1	<10	<1	<1
JAN												
10...	<1.0	<1	<3	2	21	<1	9	2	<0.1	<10	<1	<1
APR												
24...	<1.0	1	<3	<1	4	2	11	3	<0.1	<10	<1	<1
JUL												
29...	<1.0	2	<3	<1	7	<1	12	6	<0.1	<10	1	<1

08103900 SOUTH FORK ROCKY CREEK NEAR BRIGGS, TX--Continued
(Hydrologic bench-mark station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
OCT												
22...	<1.0	1100	<6	3	<0.6	<0.6	2.9	1.0	2.2	1.0	0.12	0.45
JAN												
10...	<1.0	1600	<6	<3	--	--	--	--	--	--	--	--
APR												
24...	<1.0	2000	<6	11	--	--	--	--	--	--	--	--
JUL												
29...	<1.0	1800	<6	13	0.8	<0.6	2.6	<0.6	1.9	<0.6	0.07	0.62

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX

LOCATION.--Lat 31°01'20", long 97°31'57", Bell County, Hydrologic Unit 12070203, in intake structure at Stillhouse Hollow Dam on Lampasas River, 5 mi southwest of Belton, and 16.0 mi upstream from mouth.

DRAINAGE AREA.--1,313 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1966 to current year. Prior to October 1970, published as Stillhouse Hollow Reservoir.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 15,624 ft long, including a 1,650-foot spillway and 5,894-foot dike. The lake was operated as a temporary detention basin from Sept. 2, 1966, to Feb. 19, 1968. Deliberate impoundment began Feb. 19, 1968. The lake was built for flood control and water conservation. The spillway is an uncontrolled broad-crested weir 1,650 ft long located near right end of dam. The flood-control outlet consists of a 12.0-foot-diameter conduit controlled by two 5.67- by 12.0-foot slide gates at an invert elevation of 515.0 ft. The capacity curve is based on maps prepared by Brazos River Authority in 1937 and supplemented by contour maps prepared by the U.S. Army Corps of Engineers in 1958. There are many small diversions upstream for irrigation, municipal supply and for oil field operations. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08103800. Gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	698.0	-
Design flood	693.2	1,013,300
Crest of spillway	666.0	630,400
Top of conservation pool	622.0	235,700
Lowest gated outlet (invert)	515.0	775

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 347,100 acre-ft May 2, 3, 1977 (elevation, 637.26 ft); minimum since conservation storage was reached on Apr. 12, 1969, 178,300 acre-ft Oct. 5, 1984 (elevation, 612.18 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 261,000 acre-ft May 9 (elevation, 625.80 ft); minimum daily, 235,600 acre-ft Sep. 1 (elevation, 621.98 ft).

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

621.0	229,300	623.0	242,200	625.0	255,500
622.0	235,700	624.0	248,800	626.0	262,300

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	236400	237500	238200	237800	237100	237900	237000	236500	237400	240000	237700	235600
2	236300	237500	238000	238100	237500	237800	237100	236700	237300	239800	237600	236300
3	236300	237500	237700	238300	238000	237600	237200	240600	238300	239600	237400	236500
4	236200	238000	237400	238300	239000	237600	237500	249300	239400	239600	237200	236500
5	236200	237900	237200	238500	239800	237400	237800	251500	240000	239600	237100	236500
6	236100	237800	237100	238700	239600	237200	238000	251600	240000	239500	237000	236500
7	236000	237800	237000	238800	238700	237100	238200	253900	240900	239200	236900	236500
8	236000	238900	236900	238700	238000	236900	238200	259400	241300	239100	236800	236600
9	237100	239400	237000	239800	237600	236700	237800	261000	241600	238900	236600	236500
10	237100	239600	237000	240900	237300	236500	237400	260400	241700	238700	236500	236500
11	237000	239800	237100	241500	237200	236700	237200	259200	241100	238500	236400	236400
12	236900	240000	237100	242000	237300	236700	236900	257600	240100	238300	236400	236300
13	236800	240100	237200	242100	237400	236900	237400	256500	239500	238300	236300	236300
14	236700	240200	237200	241800	237400	237100	237200	255200	239000	238300	236700	236500
15	236600	240100	237300	241300	237200	237400	236800	254500	243400	238300	236900	236400
16	236500	240100	237300	240800	237200	237800	236500	252700	245000	238300	236900	236300
17	236500	240000	237500	240400	237300	238000	236700	250700	246700	238300	236900	236300
18	236200	239800	237600	241000	237500	238000	236900	248500	246600	238300	236900	236200
19	236100	239800	237600	241800	237500	237800	237000	246400	246100	238200	236700	237200
20	236000	239600	237600	241900	237400	237600	237000	244200	245300	238000	236700	237100
21	237200	239600	237800	241900	237600	237600	237100	242400	244600	238000	236500	236800
22	237600	239600	237600	241500	237700	237400	237100	241100	243700	237800	236600	236600
23	237700	239500	237400	240800	237500	237100	237200	240000	242700	237800	236500	237400
24	237700	239300	237300	240100	237200	236900	237200	239100	241800	237900	236400	237400
25	237700	239300	237300	239500	236700	236700	237300	239300	241100	238200	236300	237200
26	237600	239300	237500	238500	236700	236500	237400	238700	240800	238200	236200	236900
27	237600	239100	237500	238100	236900	236500	237200	237800	240600	238200	236000	236600
28	237600	238900	237600	237900	237400	236900	237100	237400	240400	238000	235900	236500
29	237600	238600	237800	237800	---	236900	236800	237500	240300	238000	235800	236400
30	237600	238300	237800	237400	---	236900	236600	237500	240100	237900	235700	236300
31	237600	---	237800	237000	---	237000	---	237400	---	237800	235700	---
MAX	237700	240200	238200	242100	239800	238000	238200	261000	246700	240000	237700	237400
MIN	236000	237500	236900	237000	236700	236500	236500	236500	237300	237800	235700	235600
(†)	622.29	622.40	622.32	622.20	622.27	622.20	622.14	622.27	622.67	622.33	622.00	622.10
(ϕ)	+1100	+700	-500	-800	+400	-400	+400	+800	+2700	-2300	-2100	+600

CAL YR 1990 MAX 274800 MIN 206800 (ϕ) +30800
WTR YR 1991 MAX 261000 MIN 235600 (ϕ) -200

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1969 to September 1982, January 1988 to current year.

310129097315901 - STILLHOUSE HOLLOW LAKE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	RESER-VOIR STORAGE (AC-FT)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
MAR												
21...	0840	238000	1.00	607	8.4	15.0	3.40	8.8	90	K1	K2	190
21...	0842	--	10.0	608	8.4	15.0	--	8.8	90	--	--	--
21...	0844	--	20.0	608	8.4	14.5	--	8.9	90	--	--	--
21...	0846	--	30.0	608	8.4	14.5	--	8.9	90	--	--	--
21...	0848	--	40.0	609	8.3	14.0	--	8.4	84	--	--	--
21...	0850	--	50.0	609	8.3	13.5	--	8.3	82	--	--	--
21...	0852	--	60.0	607	8.2	12.5	--	7.9	76	--	--	--
21...	0854	--	70.0	608	8.1	12.0	--	7.4	71	--	--	--
21...	0856	--	80.0	607	8.0	11.5	--	6.5	61	--	--	--
21...	0858	--	90.0	610	7.9	11.5	--	5.9	56	--	--	--
21...	0900	--	100	610	7.9	11.5	--	5.5	52	--	--	--
21...	0902	--	116	609	8.0	11.5	--	5.4	51	--	--	190
JUN												
05...	0910	240000	1.00	570	8.3	26.0	1.80	7.3	92	K3	140	170
05...	0912	--	10.0	570	8.3	26.0	--	7.2	91	--	--	--
05...	0914	--	20.0	572	8.3	26.0	--	6.9	87	--	--	--
05...	0916	--	30.0	581	8.1	25.0	--	5.8	72	--	--	--
05...	0918	--	40.0	584	7.9	21.5	--	4.2	49	--	--	--
05...	0920	--	50.0	595	7.9	20.5	--	4.0	46	--	--	--
05...	0922	--	60.0	626	7.9	19.0	--	4.2	46	--	--	--
05...	0924	--	70.0	626	7.8	17.0	--	3.2	34	--	--	--
05...	0926	--	80.0	640	7.7	16.0	--	1.7	18	--	--	--
05...	0928	--	90.0	640	7.6	15.5	--	0.9	9	--	--	--
05...	0930	--	100	640	7.5	15.0	--	0	0	--	--	--
05...	0932	--	110	640	7.5	15.0	--	0	0	--	--	--
05...	0934	--	119	640	7.5	15.0	--	0	0	--	--	200
JUL												
22...	0915	238000	1.00	536	8.3	29.5	3.40	6.1	82	K1	55	180
22...	0917	--	10.0	536	8.2	29.0	--	5.9	78	--	--	--
22...	0919	--	20.0	536	8.1	29.0	--	5.6	74	--	--	--
22...	0921	--	30.0	536	7.8	28.0	--	3.5	46	--	--	--
22...	0923	--	35.0	549	7.6	27.0	--	0.8	10	--	--	--
22...	0925	-	40.0	560	7.5	25.0	--	0.1	1	--	--	--
22...	0927	.	50.0	576	7.5	22.5	--	0.5	6	--	--	--
22...	0929	--	60.0	579	7.5	21.5	--	0.8	9	--	--	--
22...	0931	--	70.0	589	7.5	20.0	--	0.2	2	--	--	--
22...	0933	--	80.0	589	7.5	19.0	--	0	0	--	--	--
22...	0935	--	90.0	613	7.5	17.5	--	0	0	--	--	--
22...	0937	--	100	629	7.5	17.0	--	0	0	--	--	--
22...	0939	--	110	643	7.4	16.0	--	0	0	--	--	--
22...	0941	--	118	649	7.4	16.0	--	0	0	--	--	210

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310129097315901 - STILLHOUSE HOLLOW LAKE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)
MAR											
21...	41	45	20	45	1	4.1	150	18	95	0.30	6.1
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	41	44	20	46	1	4.2	150	21	97	0.30	7.0
JUN											
05...	29	41	17	39	1	3.7	140	18	76	0.20	4.7
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	36	47	19	46	1	3.7	160	21	88	0.20	7.8
JUL											
22...	41	39	19	39	1	3.5	130	21	74	0.20	5.5
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	34	50	21	46	1	3.9	180	18	89	0.20	11

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310129097315901 - STILLHOUSE HOLLOW LAKE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAR											
21...	326	0.055	0.010	0.065	<0.010	--	0.30	0.020	<0.010	5	<1
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	0.079	0.010	0.089	0.030	1.1	1.1	0.020	<0.010	<10	<10
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	330	0.120	0.010	0.130	0.070	0.53	0.60	0.030	<0.010	8	34
JUN											
05...	285	--	0.020	<0.050	0.020	0.28	0.30	0.030	<0.010	8	<1
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	0.240	0.030	0.270	0.020	0.48	0.50	0.010	<0.010	<10	<10
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	<0.010	0.170	<0.010	--	0.20	<0.010	<0.010	<10	70
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	329	0.240	0.030	0.270	0.030	0.17	0.20	0.010	<0.010	51	250
JUL											
22...	282	--	<0.010	<0.050	<0.010	--	0.50	<0.010	<0.010	<3	<1
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	<0.010	<0.050	<0.010	--	0.50	0.010	<0.010	20	<10
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	<0.010	0.170	<0.010	--	0.30	<0.010	<0.010	30	20
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	347	--	<0.010	<0.050	0.580	0.42	1.0	0.030	0.030	1300	590

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310033097333001 - STILLHOUSE HOLLOW LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
21...	0935	1.00	607	8.4	14.5	8.8	89
21...	0937	10.0	607	8.4	14.5	8.8	89
21...	0939	20.0	607	8.4	14.5	8.9	90
21...	0941	30.0	607	8.3	14.0	8.5	85
21...	0943	40.0	608	8.3	14.0	8.3	83
21...	0945	50.0	610	8.3	13.5	8.1	80
21...	0947	60.0	608	8.2	13.0	7.6	74
21...	0949	70.0	609	8.1	12.5	7.1	69
21...	0951	80.0	609	8.0	11.5	6.3	59
21...	0953	90.0	609	7.9	11.5	6.0	57
21...	0955	100	610	7.9	11.5	5.6	55
21...	0957	114	610	8.0	11.5	5.5	52
JUN							
05...	1015	1.00	574	8.4	27.0	7.4	95
05...	1017	10.0	574	8.3	26.5	7.4	94
05...	1019	20.0	574	8.3	26.0	7.1	90
05...	1021	30.0	576	8.0	23.5	4.8	58
05...	1023	40.0	576	7.8	21.5	3.5	41
05...	1025	50.0	581	7.8	20.5	3.2	36
05...	1027	60.0	610	7.7	18.5	2.5	27
05...	1029	70.0	637	7.6	17.0	0.9	10
05...	1031	80.0	645	7.6	16.0	0	0
05...	1033	90.0	645	7.6	15.0	0	0
05...	1035	100	645	7.6	15.0	0	0
05...	1037	113	645	7.6	15.0	0	0
JUL							
22...	1020	1.00	535	8.3	29.5	6.1	82
22...	1022	10.0	535	8.3	29.0	6.0	80
22...	1024	20.0	535	8.2	29.0	5.9	78
22...	1026	30.0	535	8.0	28.5	4.3	56
22...	1028	40.0	563	7.5	24.5	0	0
22...	1030	50.0	563	7.5	22.5	0.2	2
22...	1032	60.0	577	7.5	21.5	0.6	7
22...	1034	70.0	574	7.5	20.5	0.1	1
22...	1036	80.0	571	7.5	19.5	0	0
22...	1038	90.0	583	7.5	18.5	0	0
22...	1040	100	628	7.5	17.0	0	0
22...	1042	110	639	7.5	16.5	0	0

310128097353601 - STILLHOUSE HOLLOW LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
MAR											
21...	1025	1.00	610	8.4	15.5	2.60	8.7	90	<1	K6	200
21...	1027	10.0	610	8.4	15.5	--	8.8	91	--	--	--
21...	1029	20.0	611	8.4	15.5	--	8.7	90	--	--	--
21...	1031	30.0	610	8.4	15.0	--	8.7	89	--	--	--
21...	1033	40.0	609	8.3	14.5	--	8.6	87	--	--	--
21...	1035	50.0	610	8.2	13.5	--	7.7	76	--	--	--
21...	1037	60.0	612	8.1	13.0	--	6.8	66	--	--	--
21...	1039	70.0	614	7.8	12.0	--	4.7	45	--	--	--
21...	1041	80.0	613	7.8	12.0	--	4.4	42	--	--	190
JUN											
05...	1106	1.00	561	8.3	28.0	1.60	7.3	96	<1	K2	180
05...	1108	10.0	564	8.3	27.5	--	7.2	94	--	--	--
05...	1110	20.0	570	8.2	26.5	--	6.6	84	--	--	--
05...	1112	30.0	579	7.9	24.0	--	4.2	51	--	--	--
05...	1114	40.0	532	7.6	22.5	--	2.3	27	--	--	--
05...	1116	50.0	518	7.6	20.5	--	0.9	10	--	--	--
05...	1118	60.0	566	7.6	19.0	--	0	0	--	--	--
05...	1120	70.0	622	7.6	17.5	--	0	0	--	--	--
05...	1122	80.0	640	7.6	17.0	--	0	0	--	--	--
05...	1124	89.0	643	7.6	17.0	--	0	0	--	--	200
JUL											
22...	1115	1.00	522	8.3	30.0	2.10	6.2	84	K1	K3	180
22...	1117	10.0	522	8.2	30.0	--	6.1	82	--	--	--
22...	1119	20.0	522	8.1	29.5	--	5.3	71	--	--	--
22...	1121	30.0	519	7.6	28.5	--	1.7	22	--	--	--
22...	1123	35.0	495	7.4	26.5	--	0	0	--	--	--
22...	1125	40.0	508	7.4	25.0	--	0	0	--	--	--
22...	1127	50.0	530	7.4	22.5	--	0	0	--	--	--
22...	1129	60.0	530	7.4	21.0	--	0	0	--	--	--
22...	1131	70.0	535	7.4	20.0	--	0	0	--	--	--
22...	1133	80.0	560	7.4	19.5	--	0	0	--	--	--
22...	1135	88.0	566	7.4	19.0	--	0	0	--	--	200

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310128097353601 - STILLHOUSE HOLLOW LAKE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
MAR											
21...	38	48	20	44	1	3.9	160	21	92	0.30	5.8
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	40	45	20	47	1	4.0	150	21	89	0.30	7.0
JUN											
05...	35	44	18	37	1	3.6	150	18	70	0.20	5.3
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	33	49	19	44	1	3.8	170	18	83	<0.10	8.2
JUL											
22...	37	40	19	36	1	3.5	140	20	67	0.20	6.1
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	25	50	18	36	1	3.4	170	12	67	0.20	11

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR											
21...	333	0.053	0.010	0.063	<0.010	--	0.50	<0.010	<0.010	6	<1
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	0.068	0.010	0.078	0.020	0.58	0.60	0.010	<0.010	10	<10
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	326	0.110	0.020	0.130	0.100	0.40	0.50	0.020	<0.010	18	16
JUN											
05...	285	--	0.020	<0.050	0.020	0.28	0.30	<0.010	<0.010	<3	<1
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	<0.010	0.057	0.020	0.28	0.30	<0.010	<0.010	<10	<10
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	<0.010	0.230	0.020	0.18	0.20	0.020	<0.010	10	30
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	326	0.043	0.040	0.083	0.170	0.33	0.50	0.020	0.020	27	420
JUL											
22...	276	--	<0.010	<0.050	<0.010	--	0.50	<0.010	<0.010	7	<1
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	<0.010	<0.050	<0.010	--	0.40	<0.010	<0.010	<10	<10
22...	--	--	<0.010	<0.050	<0.010	--	0.40	<0.010	<0.010	<10	<10
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	303	--	<0.010	<0.050	0.590	0.61	1.2	0.020	<0.010	790	440

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310130097371701 - STILLHOUSE HOLLOW LAKE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
21...	1110	1.00	611	8.4	16.0	8.6	90
21...	1112	10.0	612	8.4	16.0	8.7	91
21...	1114	20.0	610	8.3	15.0	8.6	88
21...	1116	30.0	611	8.3	14.5	8.5	86
21...	1118	40.0	611	8.3	14.0	8.0	80
21...	1120	50.0	611	8.2	14.0	7.9	79
21...	1122	60.0	612	8.2	14.0	7.5	75
21...	1124	76.0	618	7.9	13.0	4.2	41
JUN							
05...	1150	1.00	553	8.3	28.5	7.2	95
05...	1152	10.0	557	8.3	28.0	7.1	93
05...	1154	20.0	562	8.1	27.0	6.3	81
05...	1156	30.0	556	7.6	23.5	2.2	27
05...	1158	40.0	509	7.6	21.5	0.2	2
05...	1200	50.0	504	7.6	20.0	0	0
05...	1202	60.0	552	7.6	19.0	0	0
05...	1204	70.0	603	7.6	17.5	0	0
05...	1206	75.0	603	7.6	17.5	0	0
JUL							
22...	1210	1.00	513	8.2	30.5	6.3	86
22...	1212	10.0	519	8.2	29.5	5.9	79
22...	1214	20.0	519	8.1	29.5	5.7	76
22...	1216	30.0	519	7.5	28.5	1.0	13
22...	1218	40.0	500	7.3	24.0	0	0
22...	1220	50.0	517	7.3	22.0	0	0
22...	1222	60.0	526	7.3	21.0	0	0
22...	1224	73.0	532	7.3	20.5	0	0

310037097383201 - STILLHOUSE HOLLOW LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
MAR											
21...	1145	1.00	635	8.2	16.0	1.20	8.0	84	<1	<1	230
21...	1147	10.0	637	8.2	16.0	--	7.9	82	--	--	--
21...	1149	20.0	631	8.2	15.0	--	7.6	78	--	--	--
21...	1151	30.0	618	8.2	14.5	--	7.4	75	--	--	--
21...	1153	39.0	618	8.2	14.5	--	7.3	74	--	--	210
JUN											
05...	1230	1.00	546	8.1	29.0	0.90	6.5	87	K4	K1	200
05...	1232	10.0	549	8.0	27.5	--	5.2	68	--	--	--
05...	1234	20.0	556	7.7	26.5	--	2.7	34	--	--	--
05...	1236	30.0	556	7.4	24.5	--	0.1	1	--	--	--
05...	1238	37.0	513	7.4	22.5	--	0	0	--	--	200
JUL											
22...	1247	1.00	523	8.2	31.0	1.40	6.3	87	<1	K4	200
22...	1249	10.0	523	8.1	30.0	--	5.9	80	--	--	--
22...	1251	20.0	542	7.7	29.5	--	3.5	47	--	--	--
22...	1252	25.0	553	7.6	29.5	--	1.8	24	--	--	--
22...	1253	30.0	569	7.3	29.0	--	0	0	--	--	--
22...	1255	37.0	565	7.2	27.5	--	0	0	--	--	230

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310037097383201 - STILLHOUSE HOLLOW LAKE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
MAR											
21...	36	58	21	40	1	3.2	200	24	82	0.30	4.9
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	34	52	20	41	1	3.5	180	22	83	0.30	5.7
JUN											
05...	24	54	17	27	0.8	3.0	180	16	48	0.20	7.7
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	20	58	14	21	0.6	2.9	180	11	36	0.20	11
JUL											
22...	27	48	19	29	0.9	3.0	170	20	46	0.30	9.0
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	20	58	20	27	0.8	2.8	210	11	47	0.30	13

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR											
21...	350	0.051	0.010	0.061	0.020	0.28	0.30	<0.010	<0.010	6	<1
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	334	0.070	0.010	0.080	0.050	0.35	0.40	0.010	<0.010	3	1
JUN											
05...	281	--	0.020	<0.050	0.020	0.98	1.0	0.010	<0.010	<3	2
05...	--	--	0.020	<0.050	0.030	1.2	1.2	0.010	<0.010	<10	<10
05...	--	--	0.030	<0.050	0.080	0.42	0.50	0.020	<0.010	10	20
05...	--	--	--	--	--	--	--	--	--	--	--
05...	265	--	0.040	<0.050	0.380	0.52	0.90	0.060	0.030	550	400
JUL											
22...	277	--	<0.010	<0.050	<0.010	--	0.40	<0.010	<0.010	<3	<1
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	<0.010	<0.050	0.010	0.39	0.40	0.020	<0.010	10	20
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	0.010	<0.050	0.290	0.51	0.80	0.030	<0.010	250	230
22...	304	--	<0.010	<0.050	0.790	0.61	1.4	0.020	<0.010	710	360

Stillhouse Hollow Lake AC (310129097315901)

Phytoplankton Analyses October 1990 to September 1991

Date	3-21-91
Time	0840
TOTAL CELLS/mL	21,740
NUMBER OF SPECIES	23
DEPTH COLLECTED (ft.)	1.7

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Coscinodiscus sp.	5
Cyclotella meneghiniana	33
Cyclotella ocellata	61
Melosira granulata	14
Melosira italica	47
Stephanodiscus astraea var. *minutula*	5
Order Pennales	
Achnanthes hauckiana	10
Amphora perpusilla	10
Navicula arvensis	31
Navicula lanceolata	51
Nitzschia palea	20
Synedra delicatissima	41
CHLOROPHYTA (Green algae)	
Chlamydomonas sp.	68
Chlorella elipsiodea	338
Chlorococcum humicola	203
Nephrocytium limneticum	675
Selenastrum minutum	68
Tetraëdron caudatum	68
CHRYSOPHYTA (Golden-brown algae)	
Mallomonas sp.	68
Unknown flagellate	203
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	3917
Aphanothece nidulans	15,601
Dactylococcopsis fasicularis	203

Stillhouse Hollow Lake EC (310037097383201)

Phytoplankton Analyses October 1990 to September 1991

Date	3-21-91
Time	1145
TOTAL CELLS/mL	748,883
NUMBER OF SPECIES	25
DEPTH COLLECTED (ft.)	2.0

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Cyclotella meneghiniana	47
Cyclotella ocellata	105
Cyclotella stelligera	12
Order Pennales	
Navicula sp.	45
Nitzschia acicularis	45
Nitzschia palea	89
Synedra delicatissima	178
Synedra radians	134
CHLOROPHYTA (Green algae)	
Ankistrodesmus falcatus	4,901
Chlamydomonas sp.	6,535
Chlorella ellipsoidea	16,337
Chlorococcum humicola	17,971
Oocystis pusilla	11,436
Pediastrum simplex	3,267
Scenedesmus quadricauda	6,535
CHRYSOPHYTA (Golden-brown algae)	
Dinobryon sertularia	1,634
Mallomonas sp.	3,267
Unknown flagellate	1,634
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	338,173
Aphanocapsa elachista	45,743
Aphanothece nidulans	272,825
Chroococcus sp.	3,267
Dactylococcopsis fasicularis	8,168
EUGLENOPHYTA (Euglenoids)	
Euglena sp.	4,901
CRYPTOPHYTA (Cryptomonads)	
Cryptomonas erosa	1,634

Stillhouse Hollow Lake AC (310129097315901)

Phytoplankton Analyses October 1990 to September 1991

Date	6-5-91
Time	0910
TOTAL CELLS/mL	197,679
NUMBER OF SPECIES	21
DEPTH COLLECTED (ft.)	3.0

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Cyclotella ocellata	7,352
Order Pennales	
Fragilaria crotonensis	482
Navicula arvensis	39
Navicula lanceolata	39
Nitzschia acicularis	156
Nitzschia dissipata	156
CHLOROPHYTA (Green algae)	
Chlamydomonas sp.	2,451
Chlorella ellipsoidea 4,901	
Chlorococcum humicola	4,901
Oocystis pusilla	1,634
Pediastrum simplex	4,901
Scenedesmus bijuga	1,634
Tetraëdron minimum	1,634
CHRYSOPHYTA (Golden-brown algae)	
Kephyrion sp.	3,267
Unknown flagellate	1,634
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	92,303
Aphanocapsa elachista	53,912
Aphanothece nidulans	4,901
Chroococcus dispersus	4,084
Dactylococcopsis fascicularis	817
Synechococcus sp.	6,535

Stillhouse Hollow Lake EC (310037097383201)

Phytoplankton Analyses October 1990 to September 1991

Date	6-5-91
Time	1230
TOTAL CELLS/mL	869,121
NUMBER OF SPECIES	32
DEPTH COLLECTED (ft.)	1.5

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Cyclotella meneghiniana	1,634
Cyclotella ocellata	9,802
Melosira varians	8,168
Stephanodiscus astraea var. *minutula*	1,634
Order Pennales	
Navicula arvensis	2,883
Navicula lanceolata	1,922
Nitzschia acicularis	5,766
Nitzschia dissipata	961
Nitzschia palea	2,883
Synedra delicatissima	1,922
CHLOROPHYTA (Green algae)	
Chlamydomonas sp.	3,267
Chlorella ellipsoidea	13,069
Chlorococcum humicola	11,436
Crucigenia tetrapedia	16,337
Oocystis pusilla	6,535
Scenedesmus acuminatus	6,535
Scenedesmus bijuga	6,535
Scenedesmus quadricauda	9,802
CHRYSOPHYTA (Golden-brown algae)	
Kephyrion sp.	1,634
Unknown flagellate	4,901
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	308,766
Aphanocapsa elachista	147,032
Chroococcus dispersus	14,703
Dactylococcopsis fascicularis	3,267
Merismopedia tenuissima	78,417
Oscillatoria limnetica	6,535
Oscillatoria sp. 1	130,695
Oscillatoria sp. 2	3,267
Phormidium tenue	27,773
Synechococcus sp.	22,872
EUGLENOPHYTA (Euglenoids)	
Euglena sp.	3,267
CRYPTOPHYTA (Cryptomonads)	
Cryptomonas erosa	4,901

Stillhouse Hollow Lake AC (3101029097315901)

Phytoplankton Analyses October 1990 to September 1991

Date	7-22-91
Time	0915
TOTAL CELLS/mL	70,837
NUMBER OF SPECIES	18
DEPTH COLLECTED (ft.)	5.5

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Stephanodiscus hantzschia	567
Order Pennales	
Navicula sp. 1	142
Synedra ulna	142
CHLOROPHYTA (Green algae)	
Oocystis parva	283
Chlorella vulgaris	3,825
Acanthosphaera zachariasi	142
Tetraedron minimum	142
CHRYSOPHYTA (Golden-brown algae)	
Unknown statosphore sp. 1	425
CYANOPHYTA (Blue-green algae)	
Anabaena planctonica	4,392
Dactylococcopsis fascicularis	425
Aphanocapsa elachista var. *planctonica*	53,125
Chroococcus varius	567
Lyngbya limnetica	5,242
PYRROPHYTA (Dinoflagellates)	
Peridinium inconspicuum	142
Peridinium pusillum	142
Gymnodinium palustre	142
CRYPTOPHYTA (Cryptomonads)	
Cryptomonas erosa	850
Cryptomonas ovata	142

Stillhouse Hollow Lake EC (31007097383201)

Phytoplankton Analyses October 1990 to September 1991

Date	7-22-91
Time	1247
TOTAL CELLS/mL	165,277
NUMBER OF SPECIES	13
DEPTH COLLECTED (ft.)	2.2

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Stephanodiscus hantzschia	992
Order Pennales	
Navicula sp. 2	661
Synedra ulna	331
CHLOROPHYTA (Green algae)	
Chlorella vulgaris	5,619
Crucigenia tetrapedia	1,322
Dictyosphaerium sp. 1	8,594
CHRYSOPHYTA (Golden-brown algae)	
Ochromonas minuscula	2,314
Unknown statospore sp. 2	331
CYANOPHYTA (Blue-green algae)	
Aphanocapsa elachista var. *planctonica*	118,999
Dactycococcopsis fascicularis	992
Lyngbya limnetica	10,908
Raphidiopsis curvata	13,553
PYRROPHYTA (Dinoflagellates)	
Peridinium pusillum	661

08104500 LITTLE RIVER NEAR LITTLE RIVER

LOCATION.--Lat 30°57'59", long 97°20'45", Bell County, Hydrologic Unit 12070204, on right bank 25 ft downstream from State Highway 95, 2.4 mi southeast of Little River, 5 mi downstream from confluence of Leon and Lampasas Rivers, and 95.8 mi upstream from mouth.

DRAINAGE AREA.--5,228 mi².

PERIOD OF RECORD.--October 1923 to May 1929, August 1962 to current year.
Water-quality records.--Chemical analyses: October 1964 to September 1982.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is 400.11 ft above National Geodetic Vertical Datum of 1929. From Oct. 5, 1923, to May 27, 1929, nonrecording gage at railroad bridge 0.5 mi upstream at same datum.

REMARKS.--Records fair. Many small diversions upstream for irrigation and municipal supply affect very low flows. Flow regulated by Belton Lake (station 08102000) on Leon River beginning Mar. 8, 1954, and by Stillhouse Hollow Lake (station 08104050) on the Lampasas River beginning Sept. 2, 1966. Sewage effluent from Fort Hood military installation and by cities of Killeen, Nolanville, and Harker Heights. Flow is affected at times by discharge from the flood-detention pools of 13 floodwater-retarding structures with a combined detention capacity of 15,430 acre-ft. These structures control runoff from 47.4 mi². Several observations of water temperature were made during the year. Gage-height telemeter (DCP) at station.

AVERAGE DISCHARGE.--5 years (water years 1924-28) unregulated, 709 ft³/s (513,700 acre-ft/yr); 29 years (water years 1963-91) regulated, 842 ft³/s (610,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,600 ft³/s May 17, 1965 (gage height, 42.85 ft); minimum daily, 8.2 ft³/s Aug. 6, 19, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 46.8 ft in September 1921, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,500 ft³/s May 8 at 0430 hours (gage height, 32.49 ft); minimum daily, 75 ft³/s Aug. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	159	108	240	167	1010	469	150	228	625	400	98	349
2	162	108	243	193	715	621	147	137	590	388	97	364
3	162	108	245	242	697	633	138	411	554	380	96	430
4	164	454	235	207	785	624	125	2250	770	432	93	355
5	161	270	236	190	893	627	128	773	495	483	96	374
6	162	150	235	255	845	606	132	613	466	580	85	548
7	158	139	150	283	1380	626	133	2220	1040	566	80	716
8	159	309	130	286	1290	581	127	8780	978	539	77	678
9	707	880	129	546	875	425	294	2170	819	465	75	603
10	296	320	130	1600	863	414	315	3680	823	455	83	592
11	179	225	127	586	815	404	319	3580	852	455	82	581
12	164	187	130	370	470	225	321	3490	1060	e410	79	584
13	153	168	132	385	448	194	517	3310	999	e300	79	587
14	146	158	130	965	442	172	645	3340	759	e250	158	598
15	136	236	151	1330	428	170	403	3760	2110	e200	192	632
16	143	255	151	1300	426	209	361	2590	1130	e150	117	596
17	133	250	156	1310	436	193	569	2490	1510	132	94	495
18	133	251	159	1790	443	172	738	2430	1690	127	86	147
19	133	252	153	1900	570	346	534	2400	1620	125	85	712
20	137	248	154	1510	475	357	691	2390	1540	114	82	455
21	690	248	170	1390	446	360	679	2250	1280	111	77	392
22	426	252	213	1380	526	352	671	1820	1110	112	95	388
23	173	276	160	1600	689	339	662	1540	1100	109	139	666
24	145	248	156	1460	813	336	658	1210	1090	111	93	441
25	128	244	156	1440	797	335	617	1860	994	250	96	449
26	119	249	169	1420	752	336	434	1350	604	142	94	548
27	117	244	189	1330	457	319	518	1220	556	121	302	534
28	114	246	174	1090	445	176	526	1060	407	111	318	454
29	112	244	170	1080	---	211	488	677	401	111	321	425
30	110	241	193	1060	---	163	252	655	408	107	322	421
31	110	---	173	1060	---	155	---	633	---	100	389	---
TOTAL	5991	7568	5339	29725	19231	11150	12292	65317	28380	8336	4180	15114
MEAN	193	252	172	959	687	360	410	2107	946	269	135	504
MAX	707	880	245	1900	1380	633	738	8780	2110	580	389	716
MIN	110	108	127	167	426	155	125	137	401	100	75	147
AC-FT	11880	15010	10590	58960	38140	22120	24380	129600	56290	16530	8290	29980

CAL YR 1990 TOTAL 403958 MEAN 1107 MAX 6240 MIN 46 AC-FT 801300
WTR YR 1991 TOTAL 212623 MEAN 583 MAX 8780 MIN 75 AC-FT 421700

e Estimated

08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX

LOCATION.--Lat 30°40'03", long 97°43'38", Williamson County, Hydrologic Unit 12070205, at North San Gabriel Dam, on North Fork San Gabriel River, 2.5 mi upstream from Middle Fork San Gabriel River, 3.7 mi northwest of Georgetown, and 4.4 mi upstream from confluence with South Fork San Gabriel River.

DRAINAGE AREA.--247 mi².

PERIOD OF RECORD.--March 1980 to current year.
Water-quality records.--Chemical and biochemical analyses: October 1980 to August 1989.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to May 13, 1980, nonrecording gage at present site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam, 6,700 ft long, including the spillway. The lake was built for water conservation and flood control. Deliberate impoundment began on Mar. 3, 1980. The spillway is an ungated broad-crested weir 1,000 ft long, located near right end of dam. The spillway for normal flood releases is a gated, 11-foot-diameter conduit, controlled by two 5- by 11 foot slide gates, located near the center of dam. The invert for the floodgate is 720.0 ft. A low-flow outlet, consisting of four 3- by 4-foot gates is located near the center of dam. These gates are inverts of 735.0, 749.0, 763.0, and 777.0 ft. Figures given herein represent total content. Data regarding dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	861.0	246,700
Design flood	856.2	221,200
Crest of spillway	834.0	130,800
Top of conservation pool	791.0	37,080
Lowest gated outlet (invert of 11-foot conduit)	720.0	0

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 89,730 acre-ft June 22, 1981 (elevation, 819.44 ft); minimum, 466 acre-ft Mar. 4, 1980 (elevation, 724.46 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 39,780 acre-ft May 5 (elevation, 793.01 ft); minimum daily, 25,310 acre-ft Jan 4-5, 7-8 (elevation, 780.57 ft).

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

780.0	24,760	786.0	31,000	792.0	38,410
782.0	26,720	788.0	33,330	793.0	39,760
784.0	28,800	790.0	35,790	794.0	41,150

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27430	26540	26090	25330	29030	32370	34060	37480	37360	37670	37120	36100
2	27380	26510	26090	25340	29100	32440	34090	37450	37360	37650	37060	36080
3	27350	26500	26050	25330	29200	32500	34110	37710	37640	37620	37000	36070
4	27330	26580	26020	25310	29480	32580	34210	39530	37780	38210	36950	36060
5	27310	26560	25970	25310	29720	32650	34340	39780	37660	38370	36900	36030
6	27270	26520	25930	25330	29890	32700	34420	39570	37440	38310	36850	36030
7	27240	26510	25900	25310	30020	32740	34490	39120	37700	38220	36800	36020
8	27230	26600	25880	25310	30120	32790	34550	39270	37780	38130	36740	36010
9	27260	26580	25860	25470	30240	32850	34590	39070	37790	38020	36690	35980
10	27220	26550	25820	25650	30340	32900	34630	38700	37730	37890	36720	35970
11	27180	26540	25800	25710	30440	32960	34660	38310	37570	37740	36690	35930
12	27140	26520	25790	25740	30550	33000	34700	37870	37460	37670	36640	35910
13	27100	26500	25770	25780	30650	33050	35350	37530	37460	37660	36600	35880
14	27060	26480	25760	25820	30740	33090	35510	37340	37450	37650	36630	36010
15	27030	26450	25740	25840	30790	33180	35590	37380	38410	37640	36630	35980
16	26990	26430	25720	25860	30880	33280	35650	37440	38800	37640	36590	35970
17	26940	26410	25710	25880	30970	33340	36210	37460	39000	37620	36550	35940
18	26910	26380	25690	26650	31100	33400	36650	37450	38920	37570	36510	35920
19	26860	26360	25660	27180	31230	33440	36820	37420	38780	37520	36470	35910
20	26810	26330	25650	27430	31300	33500	36940	37410	38610	37480	36430	35870
21	26900	26310	25620	27590	31490	33570	37030	37360	38420	37450	36380	35820
22	26870	26320	25580	27760	31650	33600	37100	37330	38220	37420	36410	35800
23	26830	26300	25520	27900	31790	33630	37170	37300	38220	37400	36380	38490
24	26790	26280	25470	28090	31870	33640	37270	37300	38060	37370	36340	38540
25	26760	26260	25440	28220	31980	33680	37340	37370	37930	37340	36300	38330
26	26720	26250	25430	28380	32080	33740	37440	37360	37850	37290	36250	38110
27	26690	26230	25420	28510	32150	33770	37520	37250	37780	37250	36200	37860
28	26660	26190	25400	28630	32250	33970	37570	37240	37730	37210	36150	37640
29	26630	26160	25390	28740	---	34000	37570	37290	37710	37210	36110	37400
30	26590	26130	25390	28860	---	34030	37530	37340	37700	37200	36070	37230
31	26570	---	25350	28930	---	34040	---	37360	---	37160	36080	---
MAX	27430	26600	26090	28930	32250	34040	37570	39780	39000	38370	37120	38540
MIN	26570	26130	25350	25310	29030	32370	34060	37240	37360	37160	36070	35800
(†)	781.85	781.41	780.61	784.12	787.09	788.59	791.34	791.21	791.47	791.06	790.23	791.11
(ϕ)	-900	-440	-780	+3580	+3320	+1790	+3490	-170	+340	-540	-1080	+1150

CAL YR 1990 MAX 31740 MIN 25350 (ϕ) -5520
WTR YR 1991 MAX 39780 MIN 25310 (ϕ) +9760

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08104700 NORTH FORK SAN GABRIEL RIVER NEAR GEORGETOWN, TX

LOCATION.--Lat 30°39'42", long 97°42'40", Williamson County, Hydrologic Unit 12070205, on left bank 5,000 ft downstream from North Fork dam, 1.5 mi upstream from Middle Fork San Gabriel River, 2.7 mi upstream from Interstate Highway 35, 2.7 mi northwest of Georgetown, and 3.4 mi upstream from mouth.

DRAINAGE AREA.--248 mi^2.

PERIOD OF RECORD.--June 1968 to current year.
Water-quality records.--Chemical and biochemical analyses: October 1980 to August 1989.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder, and data collection platform (DCP). Datum of gage is 689.06 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Beginning Mar. 3, 1980, flow largely regulated by Lake Georgetown (station 08104650) located about 1.0 mi upstream from gage. U.S. Army Corps of Engineers satellite telemeter (DCP) at station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--11 years (water years 1969-79) unregulated, 88.1 ft^3/s (63,830 acre-ft/yr); 12 years (water years 1980-91) regulated, 59.1 ft^3/s (42,820 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft^3/s Sept. 17, 1974 (gage height, 26.20 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 39.5 ft in September 1921. Flood in April 1957 reached a stage of 34.5 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 547 ft^3/s Apr. 13 at 1230 hours (gage height, 7.24 ft); minimum daily, 0.48 ft^3/s March 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	4.2	2.9	3.4	3.9	3.8	4.0	47	23	44	9.3	10
2	3.3	4.2	2.9	3.5	3.8	3.9	4.0	48	24	45	9.3	10
3	3.2	4.2	2.0	3.4	3.8	3.8	4.0	28	25	44	9.3	10
4	3.3	4.9	1.9	3.4	4.5	3.9	4.0	14	60	45	9.3	8.6
5	3.3	4.3	3.2	3.4	4.2	4.1	4.4	27	114	69	9.3	4.4
6	3.3	4.3	3.4	3.6	4.2	9.7	4.2	187	141	86	9.4	4.4
7	3.5	4.2	3.4	3.6	4.2	3.2	4.3	319	104	87	9.6	4.4
8	3.6	5.0	3.3	3.6	4.2	2.4	4.2	356	68	87	9.6	4.4
9	4.3	4.5	3.2	7.0	4.2	.74	3.6	355	68	85	9.8	4.4
10	4.0	4.4	3.2	5.8	4.2	.63	3.6	352	98	83	9.9	4.4
11	4.0	4.4	3.2	4.7	4.1	.59	3.6	352	123	84	10	4.5
12	3.8	4.4	3.2	4.5	4.0	.57	3.6	355	98	39	9.9	4.7
13	3.8	4.4	3.2	4.2	4.0	.51	61	283	46	23	9.9	4.8
14	3.7	4.3	3.4	4.2	4.1	.48	19	178	34	23	10	5.3
15	3.8	4.2	3.4	4.2	4.2	.55	7.5	71	35	13	11	5.0
16	3.6	4.2	3.4	4.2	4.2	.70	6.6	48	34	13	10	4.8
17	3.6	4.2	3.4	4.2	4.2	.61	41	86	89	24	11	4.8
18	3.7	4.2	3.4	5.7	4.5	.87	8.9	86	139	24	11	5.3
19	3.6	4.2	3.4	4.9	4.8	3.5	7.5	86	141	18	9.6	5.6
20	3.6	4.2	3.4	5.0	4.7	3.6	7.2	86	141	11	10	5.4
21	5.1	4.2	3.4	4.6	4.6	3.6	6.4	87	141	11	10	6.2
22	4.2	4.2	3.4	4.6	4.7	3.6	6.3	87	141	11	10	6.6
23	4.2	4.2	3.4	4.4	4.4	3.6	6.2	79	141	11	9.9	5.6
24	4.2	4.2	3.4	4.4	4.2	3.7	6.0	68	141	11	9.9	84
25	4.0	4.1	3.4	4.4	4.0	4.0	5.8	70	113	11	9.9	130
26	3.8	4.0	3.4	4.4	3.8	4.0	5.8	85	86	14	9.9	117
27	3.8	3.9	3.4	4.2	3.8	4.0	5.8	95	65	12	9.9	118
28	3.8	3.8	3.6	4.0	3.8	4.7	5.5	40	44	9.3	9.9	117
29	3.9	2.3	3.6	4.0	---	4.1	25	6.3	44	9.3	9.9	105
30	4.0	1.7	3.5	3.9	---	4.0	47	6.3	44	9.3	10	82
31	4.0	---	3.4	3.9	---	4.0	---	14	---	9.3	11	---
TOTAL	117.3	123.5	100.7	133.3	117.3	91.45	326.0	4001.6	2565	1065.2	307.5	886.6
MEAN	3.78	4.12	3.25	4.30	4.19	2.95	10.9	129	85.5	34.4	9.92	29.6
MAX	5.1	5.0	3.6	7.0	4.8	9.7	61	356	141	87	11	130
MIN	3.2	1.7	1.9	3.4	3.8	.48	3.6	6.3	23	9.3	9.3	4.4
AC-FT	233	245	200	264	233	181	647	7940	5090	2110	610	1760

CAL YR 1990 TOTAL 1660.0 MEAN 4.55 MAX 20 MIN 1.7 AC-FT 3290
WTR YR 1991 TOTAL 9835.45 MEAN 26.9 MAX 356 MIN .48 AC-FT 19510

08104900 SOUTH FORK SAN GABRIEL RIVER AT GEORGETOWN, TX

LOCATION.--Lat 30°37'32", long 97°41'27", Williamson County, Hydrologic Unit 12070205, on right bank at downstream side of downstream bridge of two bridges on Interstate Highway 35, 1.1 mi southwest of the courthouse at Georgetown, and 2.4 mi upstream from mouth.

DRAINAGE AREA.--133 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1948, 1962-67, and December 1967 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder, and data collection platform (DCP). Datum of gage is 687.72 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature were made during the year. Gage-height telemeter (DCP) at station.

AVERAGE DISCHARGE.--23 years (water years 1969-91), 46.0 ft³/s (4.70 in/yr), 33,330 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,400 ft³/s Sept. 3, 1981 (gage height, 24.60 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1887, about 41 ft Apr. 24, 1957, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 13	1300	*3,250	*7.48	No other peak greater than base discharge.			

Minimum daily discharge, 0.24 ft³/s Oct. 8 and 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	.41	1.3	2.7	16	40	19	33	12	17	3.0	6.9
2	.29	.40	1.3	2.8	14	35	15	31	13	14	2.3	20
3	.30	.40	1.5	3.0	15	32	16	35	15	12	1.7	39
4	.34	1.2	1.3	2.4	53	30	19	91	68	52	1.5	54
5	.31	1.3	1.0	2.7	95	28	45	137	31	104	2.1	16
6	.29	1.0	1.0	4.6	46	26	35	61	14	32	1.3	29
7	.28	.71	1.1	4.6	32	24	32	46	283	20	1.0	70
8	.27	3.2	.98	3.3	31	23	35	75	97	16	.89	31
9	1.2	3.4	1.0	36	33	20	26	82	52	12	.72	17
10	.73	1.8	1.3	78	36	21	16	63	36	9.5	1.2	11
11	.62	2.1	1.4	49	39	22	14	55	31	10	16	8.4
12	.54	1.9	1.3	27	35	22	15	52	27	7.8	3.5	7.4
13	.48	1.2	1.2	21	34	23	482	48	23	7.3	1.8	9.4
14	.48	1.5	1.4	21	29	17	188	43	21	7.3	1.8	12
15	.46	1.3	1.2	20	23	21	81	44	25	7.6	45	62
16	.44	1.3	1.3	18	15	27	67	42	64	5.4	39	32
17	.42	1.4	1.8	13	24	34	183	41	75	7.6	4.2	16
18	.36	1.5	1.9	147	27	24	243	38	50	6.8	4.6	14
19	.32	1.6	1.4	191	43	20	114	38	26	4.3	4.2	24
20	.32	1.6	1.3	62	29	21	81	39	20	3.6	2.6	34
21	2.2	1.6	1.4	35	34	22	74	35	18	3.9	2.5	26
22	1.1	1.8	1.6	28	60	23	71	32	14	4.1	3.0	24
23	.74	1.9	2.0	24	48	19	65	30	21	3.0	64	315
24	.75	1.8	2.0	26	42	19	59	25	27	2.7	20	158
25	.63	1.4	2.0	24	40	20	55	28	18	3.1	9.2	57
26	.47	1.7	2.2	24	34	20	51	27	16	2.0	6.8	34
27	.43	1.4	2.2	24	33	22	47	24	13	2.9	4.9	29
28	.41	1.3	2.1	22	35	24	46	19	12	3.0	4.0	23
29	.40	1.1	2.3	19	---	32	44	16	13	3.5	3.4	22
30	.40	1.2	2.4	19	---	30	38	15	16	3.8	3.4	21
31	.41	---	2.7	17	---	22	---	14	---	3.0	6.4	---
TOTAL	16.69	44.42	48.88	971.1	995	763	2276	1359	1151	391.2	266.01	1222.1
MEAN	.54	1.48	1.58	31.3	35.5	24.6	75.9	43.8	38.4	12.6	8.58	40.7
MAX	2.2	3.4	2.7	191	95	40	482	137	283	104	64	315
MIN	.27	.40	.98	2.4	14	17	14	14	12	2.0	.72	6.9
AC-FT	33	88	97	1930	1970	1510	4510	2700	2280	776	528	2420

CAL YR 1990 TOTAL 2228.56 MEAN 6.11 MAX 679 MIN .06 AC-FT 4420
WTR YR 1991 TOTAL 9504.40 MEAN 26.0 MAX 482 MIN .27 AC-FT 18850

08105100 BERRY CREEK NEAR GEORGETOWN, TX

LOCATION.--Lat 30°41'28", long 97°39'21", Williamson County, Hydrologic Unit 12070205, on right bank at upstream side of upstream service road on Interstate Highway 35, 2.9 mi north of the county courthouse at Georgetown, and 3.6 mi upstream from mouth.

DRAINAGE AREA.--83.1 mi².

PERIOD OF RECORD.--July 1967 to current year.
Water-quality records.--Sediment records: October 1976 to September 1981.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and data collection platform (DCP). Datum of gage is 659.97 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. No regulation or diversions. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter (DCP) at station.

AVERAGE DISCHARGE.--24 years, 24.2 ft³/s (3.95 in/yr), 17,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft³/s Oct. 31, 1974 (gage height, 19.33 ft); maximum gage height, 20.11 ft from floodmark, Feb. 3, 1986; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1921 occurred September 1921, 25 ft, from information by State Department of Highways and Public Transportation and local residents (discharge not determined).

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 13	1330	1,330	6.40	May 4	0400	*3,600	*10.36
Apr. 13	1730	1,320	6.39	May 8	1600	1,260	6.25
Apr. 18	0030	1,250	6.22				

Minimum daily discharge, no flow on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.01	.00	17	20	13	22	22	11	3.3	1.0
2	.00	.00	.01	.07	15	21	13	22	22	10	2.9	1.1
3	.00	.00	.00	.04	15	19	12	24	23	9.4	2.6	1.7
4	.00	.39	.00	.01	50	18	13	696	190	10	2.3	1.5
5	.00	.13	.00	.01	64	17	14	146	39	10	2.2	1.2
6	.00	.06	.00	.15	34	17	15	57	22	9.6	2.1	1.2
7	.00	.06	.00	.09	27	17	15	41	19	9.6	1.9	1.2
8	.00	.84	.00	.10	22	17	18	415	23	11	1.8	1.1
9	.00	.06	.00	7.6	21	17	16	145	22	7.8	1.5	1.2
10	.00	.01	.00	79	20	16	15	66	24	5.1	1.8	1.1
11	.00	.02	.00	22	18	17	15	55	22	5.2	1.7	.79
12	.00	.02	.00	6.6	18	16	13	46	20	4.8	1.6	.63
13	.00	.03	.00	2.6	18	16	351	41	18	4.3	1.2	.54
14	.00	.04	.00	2.4	17	15	98	37	17	4.0	1.3	.69
15	.00	.05	.00	2.5	17	15	38	35	49	3.8	2.2	.65
16	.00	.06	.00	2.5	17	15	29	34	70	3.7	1.4	.55
17	.00	.06	.00	2.5	18	15	53	33	147	3.6	1.4	.55
18	.00	.06	.00	243	18	14	255	32	38	3.4	1.2	.55
19	.00	.09	.00	139	20	14	44	30	23	3.3	1.1	.55
20	.00	.09	.00	44	24	14	34	30	19	3.5	.85	.55
21	.34	.09	.00	27	20	14	30	28	16	3.5	1.1	.54
22	.04	.40	.00	23	91	14	28	26	15	3.6	2.1	.49
23	.00	.11	.00	22	39	14	25	26	11	3.8	1.3	1.5
24	.00	.07	.00	25	30	14	24	25	11	4.0	1.3	.89
25	.00	.06	.00	30	26	13	23	61	10	3.9	1.1	.87
26	.00	.06	.00	23	24	13	23	39	10	3.6	1.3	1.6
27	.00	.04	.00	21	22	13	24	29	10	3.5	1.5	.93
28	.00	.02	.00	21	20	14	23	25	10	3.5	1.4	.51
29	.00	.01	.00	19	---	13	23	24	10	3.4	1.2	.48
30	.00	.01	.00	17	---	13	23	23	11	3.2	1.4	.55
31	.00	---	.00	17	---	13	---	22	---	3.2	1.6	---
TOTAL	0.38	2.94	0.02	799.17	742	478	1320	2335	943	172.3	51.65	26.71
MEAN	.012	.098	.001	25.8	26.5	15.4	44.0	75.3	31.4	5.56	1.67	.89
MAX	.34	.84	.01	243	91	21	351	696	190	11	3.3	1.7
MIN	.00	.00	.00	.00	15	13	12	22	10	3.2	.85	.48
AC-FT	.8	5.8	.04	1590	1470	948	2620	4630	1870	342	102	53

CAL YR 1990 TOTAL 936.57 MEAN 2.57 MAX 344 MIN .00 AC-FT 1860
WTR YR 1991 TOTAL 6871.17 MEAN 18.8 MAX 696 MIN .00 AC-FT 13630

08105600 GRANGER LAKE NEAR GRANGER, TX

LOCATION.--30°41'34", long 97°19'34", Williamson County, Hydrologic Unit 12070205, at Granger Dam on San Gabriel River, 1.5 mi south of Friendship, 2.2 mi upstream from Willis Creek, 7.1 mi east of Granger, and at mile 31.9.

DRAINAGE AREA.--730 mi².

PERIOD OF RECORD.--January 1980 to current year.
Water-quality records.--Chemical and biochemical analyses: October 1980 to August 1989.

GAGE--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Mar. 27, 1980, nonrecording gage at present site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam, 16,320 ft long, including the spillway. The lake was built for water conservation and flood control. Deliberate impoundment began on Jan. 21, 1980. The spillway is an ungated 950-foot long ogee weir, located near right end of dam. The spillway for normal flood releases is a gated 18-foot-diameter conduit, controlled by two 8- by 18-foot slide gates, located near the center of dam. The invert for the floodgate is 457.0 ft. A low-flow outlet consists of three 3- by 4-foot gated openings, with invert elevations of 486.0, 494.0, and 502.0 ft. Figures given herein represent total contents. Data regarding dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	555.0	674,500
Designed flood	550.3	580,000
Crest of spillway	528.0	244,200
Top of conservation pool	504.0	65,510
Lowest gated outlet (invert of 18-foot conduit)	457.0	0

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 186,200 acre-ft June 19, 1981 (elevation, 522.25 ft); minimum, 615 acre-ft Jan. 21, 1980 (elevation, 462.60 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 86,020 acre-ft Apr. 18 (elevation, 508.26 ft); minimum daily, 60,080 acre-ft Nov. 2-3 (elevation, 502.71 ft).

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

502.0	57,280	506.0	74,610	508.0	84,650
504.0	65,510	507.0	79,510	509.0	90,030

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61300	60160	61710	62250	66300	66610	66170	66920	66570	67010	65600	63520
2	61220	60080	61710	62540	66740	66610	66120	66740	66790	67140	65460	63730
3	61180	60080	61590	62670	66790	66520	66080	67010	68210	67280	65290	63770
4	61140	60290	61550	62710	68210	66430	66120	68840	68750	67590	65160	63770
5	61100	60250	61550	62840	69110	66340	66520	70100	68390	67770	65020	63900
6	61100	60210	61510	63010	68750	66300	66700	70240	67770	67940	64890	63940
7	61020	60210	61380	63050	67680	66170	66920	70150	68480	68080	64760	64070
8	61020	61300	61380	63130	67050	66170	66970	72580	68930	68210	64630	64070
9	61300	61380	61380	68390	67100	66390	66830	74520	69020	68300	64460	64030
10	61220	61380	61380	70740	67050	66570	66700	74660	68750	68260	64370	63990
11	61140	61380	61430	71240	67050	66830	66610	73900	68170	68210	64290	63900
12	61060	61380	61430	71380	67230	66880	66480	73000	67590	68210	64160	63820
13	61060	61430	61380	71100	66880	66880	79660	72030	67230	68120	64070	63730
14	60980	61470	61430	70780	66430	66880	85540	70780	67140	68030	64590	63820
15	60940	61470	61430	70280	66260	66970	85920	69380	67590	67900	64680	63820
16	60900	61470	61470	69790	66610	67410	85170	67990	68710	67770	64720	63820
17	60940	61510	62000	69380	66880	67590	84490	67500	68930	67590	64720	63770
18	60810	61550	62040	71930	67940	67590	86020	67770	68570	67500	64590	63640
19	60730	61550	62040	73050	68750	67500	85230	68120	67940	67230	64550	63940
20	60690	61550	62040	73050	68350	67460	82300	68300	67630	67010	64420	63900
21	61100	61590	62090	72820	67720	67460	80410	68260	67410	66880	64290	63820
22	61100	61800	62000	72120	67230	67230	78110	68120	67140	66740	64160	63770
23	61060	61840	61880	71100	67100	66920	75960	67990	66920	66610	64120	64160
24	61060	61840	61840	70190	66880	66660	73900	67720	66700	66520	64070	64680
25	61020	61880	61840	69240	66610	66480	71430	72120	66520	66340	64030	64890
26	60980	61880	62000	68030	66340	66430	70100	71520	66390	66260	63900	65020
27	60980	61880	62090	67190	66340	66300	69060	69880	66340	66170	63820	65240
28	60940	61800	62130	66740	66430	66520	67900	68570	66430	65990	63730	65380
29	60940	61710	62250	66340	---	66610	67500	67540	66660	65950	63560	65550
30	60900	61670	62290	66210	---	66480	67190	66700	66830	65860	63560	65730
31	60900	---	62210	66170	---	66340	---	66390	---	65730	63560	---
MAX	61300	61880	62290	73050	69110	67590	86020	74660	69020	68300	65600	65730
MIN	60690	60080	61380	62250	66260	66170	66080	66390	66340	65730	63560	63520
(†)	502.91	503.10	503.23	504.15	504.21	504.19	504.38	504.20	504.30	504.05	503.55	504.05
(ϕ)	-480	+770	+540	+3960	+260	-90	+850	-800	+440	-1100	-2170	+2170

CAL YR 1990 MAX 95090 MIN 60080 (ϕ) +1560
WTR YR 1991 MAX 86020 MIN 60080 (ϕ) +4350

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08105700 SAN GABRIEL RIVER AT LANEPORT, TX

LOCATION.--Lat 30°41'39", long 97°16'43", Williamson County, Hydrologic Unit 12070205, on right bank at upstream side of county bridge, 0.2 mi north of Laneport, 3.4 mi downstream from Willis Creek, 7.5 mi northwest of Thrall, and 26.2 mi upstream from mouth.

DRAINAGE AREA.--738 mi^2.

PERIOD OF RECORD.--July 1965 to current year.
Water-Quality records.--Chemical and biochemical analyses: July 1972 to August 1989. Continuous daily water temperature records: December 1976 to March 1982.

REVISED RECORDS.--WRD TX-74-1: 1965(M), 1966(P), 1967(M), 1968, 1969(P), 1973(P). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder, and data collection platform (DCP). Datum of gage is 412.60 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good including those of estimated daily discharges. Flow partly regulated by Granger Lake (station 08105600) since Jan. 21, 1980. U.S. Army Corps of Engineers satellite telemeter (DCP) at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years (water years 1966-79) unregulated, 289 ft^3/s (209,400 acre-ft/yr); 12 years (water years 1980-91) regulated, 204 ft^3/s (147,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft^3/s Oct. 31, 1974 (gage height, 30.80 ft); no flow Aug. 21 to Oct. 6 and Oct. 13-15, 1985.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1910, occurred during September 1921, 39.6 ft; in April 1957, 34.6 ft; and in October 1959, 33.8 ft; from floodmarks at present site and datum. Discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,620 ft^3/s Apr. 19 at 1800 hours (gage height, 10.07 ft); minimum daily, 3.5 ft^3/s Dec. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	6.2	5.7	4.6	100	163	162	366	11	14	55	56
2	4.6	6.2	5.8	5.9	4.0	163	116	367	11	14	56	60
3	4.7	6.1	5.7	5.2	3.7	163	89	272	16	17	56	58
4	4.6	6.8	5.6	4.8	19	163	88	85	150	23	56	57
5	4.6	6.2	5.2	4.8	5.7	163	92	84	447	30	56	58
6	4.6	6.1	4.8	5.0	392	165	92	294	592	49	56	58
7	4.8	5.7	5.1	4.8	849	165	89	780	341	49	56	58
8	4.9	13	5.3	4.4	622	86	120	611	170	59	55	58
9	6.6	6.2	5.3	274	166	6.4	161	13	168	72	56	57
10	5.8	4.6	5.0	87	163	6.0	163	592	335	87	56	56
11	5.4	4.5	4.5	5.3	163	5.6	163	1170	595	87	56	56
12	5.0	4.6	3.5	62	163	36	160	1170	595	90	57	56
13	5.0	4.6	5.1	243	240	94	166	1170	374	90	57	57
14	5.0	5.0	5.2	335	301	95	178	1170	165	91	58	58
15	5.0	5.8	5.4	320	177	95	217	1170	168	92	58	58
16	5.0	6.0	5.4	305	7.1	99	800	1040	198	93	57	57
17	5.2	6.1	5.5	302	6.4	98	1420	596	348	92	57	56
18	5.5	6.3	7.4	434	6.0	133	1420	168	594	92	57	56
19	5.3	6.8	4.6	315	103	165	1490	168	588	90	e55	57
20	5.0	7.2	4.4	302	361	168	1590	166	464	90	e55	59
21	5.9	7.5	4.9	308	542	168	1580	262	327	90	e55	57
22	6.4	8.2	4.8	482	485	184	1580	352	327	78	e55	56
23	6.4	7.5	4.8	829	296	222	1570	352	327	63	e56	59
24	5.7	7.4	4.8	829	295	223	1570	355	326	63	56	58
25	5.3	8.2	4.8	825	295	192	1560	426	281	63	56	58
26	5.2	8.5	5.6	820	230	163	1380	643	232	61	56	57
27	5.3	8.1	4.8	683	163	163	967	1160	137	57	56	57
28	5.4	5.4	4.5	434	163	123	960	996	15	57	56	57
29	5.4	5.4	4.6	314	---	104	680	720	14	56	56	57
30	5.4	5.8	4.6	249	---	157	365	579	14	56	56	57
31	5.8	---	4.6	174	---	157	---	291	---	55	56	---
TOTAL	163.4	196.0	157.3	8970.8	6320.9	4088.0	20988	17588	8330	2020	1739	1719
MEAN	5.27	6.53	5.07	289	226	132	700	567	278	65.2	56.1	57.3
MAX	6.6	13	7.4	829	849	223	1590	1170	595	93	58	60
MIN	4.6	4.5	3.5	4.4	3.7	5.6	88	13	11	14	55	56
AC-FT	324	389	312	17790	12540	8110	41630	34890	16520	4010	3450	3410

CAL YR 1990 TOTAL 23014.3 MEAN 63.1 MAX 2120 MIN 1.8 AC-FT 45650
WTR YR 1991 TOTAL 72280.4 MEAN 198 MAX 1590 MIN 3.5 AC-FT 143400

e Estimated

08106310 SAN GABRIEL RIVER NEAR ROCKDALE, TX

LOCATION.--Lat 30°43'39", long 97°02'19", Milam County, Hydrologic Unit 12070204, on left bank at downstream side of Farm Road 487, 1.2 mi downstream from Brushy Creek, 4.3 mi upstream from mouth, and 5.3 mi north of Rockdale.

DRAINAGE AREA.--1,359 mi².

PERIOD OF RECORD.--October 1974 to current year. Prior to October 1980, gage-height record only (not published).

GAGE.--Water-stage recorder and data collection platform. Datum of gage is 311.59 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period Jan. 10-12, 15, 19, 20, Apr. 14-16, and May 8-10, 15, 16, which are poor, because of backwater from Little River. Flow largely regulated by Granger Lake (station 08105600). Flow is affected at times by discharge from the flood-detention pools of 46 floodwater-retarding structures with a combined detention capacity of 46,140 acre-ft. These structures control runoff from 144 mi² in the Brushy Creek drainage basin. Backwater from Little River occurs at times. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter (DCP) at station.

AVERAGE DISCHARGE.--11 years, 418 ft³/s (302,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 32.91 ft July 27, 1979 (discharge not determined, but may have been in backwater from Little River). Maximum discharge, 15,600 ft³/s June 14, 1981 (gage height, 32.11 ft); minimum daily, 0.08 ft³/s July 13, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,900 ft³/s Jan. 10 at 1500 hours (gage height, 31.18 ft); minimum daily, 4.1 ft³/s Oct. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	14	23	29	312	306	222	421	140	74	73	708
2	4.5	14	23	49	189	380	218	409	97	73	72	121
3	4.2	13	22	453	146	320	161	402	96	69	71	213
4	4.1	12	22	226	1170	290	156	280	196	75	71	387
5	4.4	11	22	119	2240	273	1040	476	390	75	71	233
6	4.3	14	22	86	682	265	1740	512	562	83	72	205
7	4.5	33	21	104	1050	257	549	671	599	92	71	217
8	4.7	33	21	102	968	248	475	963	548	92	71	144
9	6.6	632	21	2450	425	143	382	866	330	107	70	122
10	21	249	21	12300	331	115	317	561	264	120	70	109
11	37	85	22	6100	311	110	286	1340	556	128	68	100
12	24	52	21	1180	296	108	271	1290	563	125	148	94
13	15	38	20	822	300	142	268	1250	598	124	101	136
14	11	31	20	806	420	166	1660	1310	248	122	85	164
15	8.6	27	19	2210	406	165	1890	1380	403	120	87	114
16	7.4	25	19	902	177	170	847	1130	418	121	166	122
17	7.2	25	20	588	130	379	1350	857	664	129	136	117
18	7.3	24	27	3350	130	375	3270	372	771	119	149	99
19	7.5	23	58	4730	762	313	3510	313	613	117	133	93
20	9.7	23	48	1300	828	281	1770	320	562	115	99	93
21	8.7	23	37	803	725	269	1600	308	372	113	88	97
22	17	25	28	638	693	263	1510	412	356	113	83	89
23	64	27	27	925	642	308	1450	403	347	91	81	93
24	37	55	27	1160	561	310	1410	395	341	85	90	154
25	23	42	25	1230	492	302	1390	1300	336	84	86	137
26	19	30	27	943	459	241	1360	1010	271	82	81	104
27	17	29	29	856	310	238	882	1070	262	78	78	90
28	16	28	32	661	293	235	810	1030	106	74	77	83
29	16	26	31	466	---	173	776	773	74	74	75	79
30	15	24	29	442	---	212	496	575	70	74	75	78
31	15	---	27	315	---	228	---	523	---	73	170	---
TOTAL	445.6	1687	811	46345	15448	7585	32066	22922	11153	3021	2868	4595
MEAN	14.4	56.2	26.2	1495	552	245	1069	739	372	97.5	92.5	153
MAX	64	632	58	12300	2240	380	3510	1380	771	129	170	708
MIN	4.1	11	19	29	130	108	156	280	70	69	68	78
AC-FT	884	3350	1610	91930	30640	15040	63600	45470	22120	5990	5690	9110

CAL YR 1990 TOTAL 52014.4 MEAN 143 MAX 6300 MIN 2.0 AC-FT 103200
WTR YR 1991 TOTAL 148946.6 MEAN 408 MAX 12300 MIN 4.1 AC-FT 295400

08106350 LITTLE RIVER NEAR ROCKDALE, TX

LOCATION.--Lat 30°45'38", long 97°00'49", Milam County, Hydrologic Unit 12070204, on right bank downstream from Alcoa pumping station, 200 ft downstream from mouth of San Gabriel River, and 6.8 mi north of Rockdale.

DRAINAGE AREA.--6,959 mi^2.

PERIOD OF RECORD.--February 1981 to current year.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is 299.12 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good, except those for estimated daily discharges which are fair. Daily discharges are not published above 1,000 ft^3/s. There are numerous diversions for irrigation and municipal supply above station. For statement regarding regulations by the Soil Conservation Service floodwater-retarding structures, see station Nos. 08104500 and 08106310. The Aluminum Co. of America diverts water from Little River to their plant reservoir. Several observations of water temperature were made during the year. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 35.67 ft June 15, 1981 (maximum discharge not determined); minimum daily, 13 ft^3/s May 9, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 34.75 ft Jan. 10 at 1700 hours (maximum discharge not determined); minimum daily discharge, 132 ft^3/s Oct. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	145	259	e226	---	879	449	826	---	539	219	---
2	135	143	259	e196	---	---	437	754	821	526	211	486
3	136	140	256	e680	---	---	373	681	777	502	206	557
4	135	139	257	e181	---	---	355	---	---	496	203	876
5	134	406	252	e227	---	---	---	---	---	552	209	628
6	133	351	249	e192	---	985	---	---	---	602	202	620
7	132	212	252	e379	---	967	---	---	---	694	204	807
8	135	210	e240	423	---	942	741	---	---	685	192	881
9	160	---	e220	---	---	777	621	---	---	679	188	822
10	---	---	e190	---	---	585	662	---	---	629	185	743
11	384	482	e175	---	---	561	672	---	---	646	184	720
12	229	309	e162	---	---	550	654	---	---	650	258	704
13	197	251	166	---	900	438	---	---	---	608	221	726
14	180	225	166	---	---	421	---	---	---	409	225	810
15	171	210	165	---	976	401	---	---	---	358	285	732
16	159	248	168	---	705	406	---	---	---	345	437	779
17	153	280	181	---	626	654	---	---	---	357	324	743
18	155	277	176	---	641	699	---	---	---	329	314	649
19	145	275	200	---	---	584	---	---	---	324	287	347
20	150	273	181	---	---	671	---	---	---	316	246	---
21	159	273	170	---	---	694	---	---	---	308	231	---
22	---	285	196	---	---	688	---	---	---	301	225	498
23	554	336	247	---	---	728	---	---	---	281	219	531
24	251	335	196	---	---	726	---	---	---	268	291	---
25	201	309	183	---	---	715	---	---	---	266	243	718
26	179	279	186	---	---	644	---	---	---	374	231	604
27	164	277	207	---	---	636	---	---	---	312	219	677
28	158	274	218	---	881	632	---	---	752	278	358	661
29	153	270	209	---	---	455	---	---	559	249	414	574
30	148	261	e196	---	---	486	---	---	533	230	392	530
31	145	---	e209	---	---	479	---	---	---	224	443	---
TOTAL	---	---	6391	---	---	---	---	---	---	13337	8066	---
MEAN	---	---	206	---	---	---	---	---	---	430	260	---
MAX	---	---	259	---	---	---	---	---	---	694	443	---
MIN	---	---	162	---	---	---	---	---	---	224	184	---
AC-FT	---	---	12680	---	---	---	---	---	---	26450	16000	---

CAL YR 1990	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---		
WTR YR 1991	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---		

e Estimated

08106500 LITTLE RIVER AT CAMERON, TX

LOCATION.--Lat 30°49'53", long 96°57'01", Milam County, Hydrologic Unit 12070204, on right bank at site of old McCowan bridge, 2,020 ft upstream from bridge on U.S. Highway 77, 1.1 mi upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 2 mi southeast of Cameron, and 33.6 mi upstream from mouth.

DRAINAGE AREA.--7,065 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1916 to current year.

REVISED RECORDS.--WSP 718: 1918-20, 1922. WSP 1512: 1918-20(M), 1921, 1922(M), 1924(M), 1926, 1929-30, 1934, 1935(M), 1936, 1940(M), 1941, 1944-45(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is 281.89 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Nov. 2, 1916, to Sept. 30, 1922, nonrecording gage at site 1.8 mi upstream at different datum. Oct. 1, 1922, to Apr. 8, 1926, nonrecording gage at McCowan bridge 30 ft downstream at same datum. Apr. 9, 1926, to Oct. 9, 1933, nonrecording gage at bridge on U.S. Highway 77, 2,020 ft downstream at 1.58 ft lower datum.

REMARKS.--Records good, except those for estimated daily discharges, which are fair. Many small diversions for irrigation and municipal supply affect low flows. Since Mar. 8, 1954, 50 percent of the drainage area has been regulated by Belton Lake (station 08102000) on the Leon River, since Sept. 21, 1966, an additional 19 percent of the drainage area by Stillhouse Hollow Lake (station 08104050) on the Lampasas River, and since Jan. 21, 1980, an additional 10 percent of the drainage area by Granger Lake (station 08105700) on the San Gabriel River. The Aluminum Co. of American diverts water 10.9 mi upstream from the gage for use at their Rockdale plant. The city of Cameron diverts water 2.1 mi upstream from the gage for municipal use. Treated effluent is returned to the river upstream from gage. Flow is slightly affected at times by discharge from the flood-detention pools of 65 floodwater-retarding structures with a combined detention capacity of 68,500 acre-ft. These structures control runoff from 209 mi in the Nolan, Donahoe, and Brushy Creeks drainage basins. Satellite telemeter (DCP) at station.

AVERAGE DISCHARGE.--36 years (water years 1918-53) unregulated, 1,807 ft³/s (1,309,000 acre-ft/yr); 38 years (water years 1954-91) regulated, 1,526 ft³/s (1,106,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 647,000 ft³/s Sept. 10, 1921 (gage height, 53.2 ft, present datum, from floodmark), from rating curve extended above 110,000 ft³/s on basis of slope-area measurement of 647,000 ft³/s; no flow July 12-27, 1956.
Maximum stage since 1852, that of Sept. 10, 1921.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1852 reached about the same stage as that of Sept. 10, 1921. Flood in December 1913 reached a stage of 49.0 ft. Stages based on information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,800 ft³/s Jan. 11 at 0400 hours (gage height, 33.05 ft); minimum daily, 124 ft³/s Nov. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	127	266	184	1550	852	425	926	966	520	e170	1040
2	135	128	266	182	1410	1020	408	825	819	508	e147	464
3	137	124	261	595	1050	1100	351	750	785	482	e142	432
4	135	127	256	627	2090	1040	324	1820	1200	461	e139	778
5	136	303	246	349	4960	990	851	3710	1450	510	e141	608
6	136	417	241	263	2300	971	2320	1880	1200	538	e151	557
7	134	196	243	297	1950	957	960	1480	1160	650	e151	714
8	134	207	216	455	2390	939	785	3740	2030	642	143	812
9	151	928	175	2290	1910	829	634	8510	1670	640	138	761
10	528	1570	169	15300	1420	605	630	5420	1320	585	134	678
11	502	590	167	18600	1360	560	667	4700	1530	601	132	655
12	222	343	165	4010	1300	553	642	4720	1550	608	175	635
13	181	266	164	1660	965	439	647	4580	1750	575	175	623
14	166	233	165	1480	1010	410	7270	4480	1410	384	161	741
15	158	215	163	3560	1010	382	7960	4940	1510	298	192	661
16	149	232	162	3090	794	398	2380	4900	4210	286	359	702
17	142	280	168	2020	662	569	2010	3510	3080	298	264	677
18	148	277	159	4970	666	722	4080	2920	3170	267	242	615
19	132	276	173	9900	1790	592	5470	2720	e2510	264	221	314
20	137	275	170	4600	2020	647	2790	2710	2320	256	188	494
21	149	277	159	2590	1420	695	2480	2670	e2060	248	174	702
22	530	281	165	2240	1360	695	2300	2590	e1770	242	168	415
23	770	342	210	2360	1340	717	2230	2220	1580	225	165	460
24	258	326	183	2680	1320	728	2140	1950	1530	212	208	1450
25	186	326	170	2870	1360	718	2080	3430	1500	209	192	747
26	162	282	170	2480	1320	655	e2010	5170	1380	e214	177	532
27	147	283	182	2350	1160	635	e1470	2990	999	e215	168	602
28	138	280	190	2130	872	634	e1390	2440	802	e215	244	599
29	134	276	188	1750	---	477	e1420	1980	571	e201	341	520
30	130	271	179	1670	---	446	e1280	1420	524	e188	316	466
31	126	---	172	1560	---	453	---	1320	---	e188	349	---
TOTAL	6428	10058	5963	99112	42759	21428	60404	97421	48356	11730	6067	19454
MEAN	207	335	192	3197	1527	691	2013	3143	1612	378	196	648
MAX	770	1570	266	18600	4960	1100	7960	8510	4210	650	359	1450
MIN	126	124	159	182	662	382	324	750	524	188	132	314
AC-FT	12750	19950	11830	196600	84810	42500	119800	193200	95910	23270	12030	38590

CAL YR 1990 TOTAL 497944 MEAN 1364 MAX 13100 MIN 67 AC-FT 987700
WTR YR 1991 TOTAL 429180 MEAN 1176 MAX 18600 MIN 124 AC-FT 851300

e Estimated

08106500 LITTLE RIVER AT CAMERON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1959 to September 1974. Chemical and biochemical analyses: January 1968 to current year. Sediment analyses: February 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1959 to current year.
WATER TEMPERATURES: October 1959 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,280 microsiemens Sept. 25, 26, 1963; minimum daily, 154 microsiemens Sept. 13, 1974.
WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 6, 1964, Aug. 1, 1969; minimum daily, 0.0°C Dec. 25, 26, 29, 30, 1983.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 772 microsiemens Aug. 13; minimum daily, 255 microsiemens Jan. 18.
WATER TEMPERATURE: Maximum daily, 30.0°C Aug. 2, 29; minimum daily, 4.0°C Dec. 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
DEC												
05...	1245	269	612	8.1	11.0	10	10.7	97	1.3	31	40	220
JAN												
16...	1225	3100	373	8.2	10.5	450	9.4	85	3.8	2700	8400	140
MAR												
05...	1115	867	545	8.4	15.0	46	9.7	98	1.1	40	50	200
MAY												
22...	1055	2740	568	8.2	20.0	85	8.4	93	0.7	120	1000	200
AUG												
01...	1010	171	585	8.3	29.0	25	8.5	112	0.8	31	K18	220
SEP												
04...	1120	753	424	8.1	25.5	240	7.9	98	3.4	K1800	3700	160

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
DEC											
05...	36	62	16	42	1	4.3	0	226	186	31	63
JAN											
16...	29	46	7.1	21	0.8	3.8	0	140	115	18	41
MAR											
05...	39	63	11	31	0.9	4.1	0	200	164	32	48
MAY											
22...	41	57	14	32	1	3.9	0	195	160	25	62
AUG											
01...	38	68	13	41	1	4.1	0	227	186	45	40
SEP											
04...	29	51	7.3	26	0.9	4.9	0	157	129	33	36

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
DEC											
05...	0.40	6.6	324	343	1.08	--	0.020	<0.010	1.10	1.10	0.020
JAN											
16...	0.20	7.0	225	219	1.13	1.13	0.070	0.070	1.20	1.20	0.050
MAR											
05...	0.30	3.9	298	298	1.08	1.09	0.020	0.010	1.10	1.10	0.020
MAY											
22...	0.30	7.6	290	302	0.680	--	0.050	<0.010	0.730	0.730	0.010
AUG											
01...	0.40	8.4	327	342	1.96	1.97	0.040	0.030	2.00	2.00	0.030
SEP											
04...	0.30	9.0	252	250	1.09	1.08	0.010	0.020	1.10	1.10	0.030

08106500 LITTLE RIVER AT CAMERON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	SEDIMENT, SUSPENDED (MG/L)
DEC											
05...	0.020	0.58	--	--	0.60	0.340	0.310	0.290	0.290	0.89	26
JAN											
16...	0.090	0.25	--	--	0.30	0.140	0.140	0.140	0.120	0.43	1120
MAR											
05...	<0.010	0.18	--	--	0.20	0.190	0.170	0.140	0.130	0.43	72
MAY											
22...	0.020	0.59	--	--	0.60	0.130	0.060	0.050	0.090	0.15	323
AUG											
01...	0.020	0.77	0.78	0.80	0.80	0.290	0.240	0.220	0.220	0.67	34
SEP											
04...	0.020	0.47	--	--	0.50	0.440	0.230	0.160	0.180	0.49	638

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
DEC											
05...	19	84	20	2	68	<0.5	<1.0	<1	<3	1	5
JAN											
16...	9370	91	--	--	--	--	--	--	--	--	--
MAR											
05...	169	93	<10	1	59	0.7	<1.0	<1	<3	4	5
MAY											
22...	2390	77	<10	2	56	<0.5	1.0	1	<3	5	12
AUG											
01...	16	97	<10	4	73	<0.5	<1.0	1	<3	3	6
SEP											
04...	1300	98	--	--	--	--	--	--	--	--	--

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
DEC											
05...	1	16	3	<0.1	<10	1	<1	<1.0	800	<6	<3
JAN											
16...	--	--	--	--	--	--	--	--	--	--	--
MAR											
05...	1	11	2	<0.1	<10	1	<1	<1.0	570	<6	<3
MAY											
22...	1	16	2	<0.1	<10	1	<1	<1.0	790	<6	4
AUG											
01...	<1	11	1	<0.1	<10	2	<1	<1.0	650	8	8
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1990 TO SEPTEMBER 1991

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICROSIEMENS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1990	6428	468	260	4510	33	576	28	492	180
NOV.	1990	10058	495	275	7470	36	982	32	859	190
DEC.	1990	5963	613	342	5500	48	767	44	700	220
JAN.	1991	99112	367	203	54400	25	6560	20	5340	150
FEB.	1991	42759	491	273	31500	35	4100	31	3550	190
MAR.	1991	21428	572	318	18400	43	2510	39	2250	210
APR.	1991	60404	394	219	35700	27	4380	22	3620	160
MAY	1991	97421	449	249	65500	32	8340	27	7100	180
JUNE	1991	48356	479	266	34800	34	4500	30	3880	190
JULY	1991	11730	583	325	10300	45	1410	40	1270	210
AUG.	1991	6067	564	314	5140	43	698	38	625	210
SEPT	1991	19454	411	228	12000	28	1480	23	1220	170
TOTAL		429180	**	**	285000	**	36300	**	30900	**
WTD.AVG.		1176	443	246	**	31	**	27	**	170

08106500 LITTLE RIVER AT CAMERON, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	491	544	611	588	522	556	609	500	533	637	584	425
2	525	550	610	587	523	530	608	497	574	641	575	405
3	535	553	611	592	536	542	603	509	578	645	570	436
4	534	562	617	488	486	515	638	460	579	647	579	422
5	533	542	620	540	358	535	560	341	422	643	580	364
6	526	538	621	512	409	531	398	350	463	627	586	383
7	526	524	626	527	441	538	483	420	448	618	588	400
8	521	462	629	540	437	536	533	489	508	579	605	414
9	513	398	643	480	506	536	572	260	453	545	601	412
10	515	373	651	271	533	565	576	354	481	537	608	414
11	480	335	662	347	544	579	599	483	493	540	607	424
12	470	341	659	345	546	608	599	483	491	530	599	430
13	372	370	660	364	551	629	606	485	535	529	772	434
14	385	419	646	378	552	620	294	487	553	530	631	430
15	399	451	634	341	543	630	315	395	546	537	547	429
16	421	493	630	397	553	621	350	394	381	548	567	432
17	441	531	634	444	621	607	360	517	330	551	644	449
18	480	542	621	255	626	650	378	544	330	567	524	453
19	504	561	608	265	527	550	324	562	498	559	596	452
20	514	594	598	371	463	567	400	560	498	555	576	471
21	521	600	628	424	490	584	406	564	497	568	520	445
22	480	606	597	447	485	590	416	560	505	568	520	289
23	399	590	597	453	513	600	418	547	519	574	498	315
24	431	600	577	454	556	579	422	563	538	595	495	300
25	430	620	568	445	524	579	423	477	540	601	524	317
26	432	639	568	484	527	581	425	384	544	608	540	382
27	436	636	567	487	536	581	438	427	550	610	558	488
28	437	637	639	499	552	606	455	496	554	605	554	498
29	460	630	545	511	---	604	459	517	611	618	521	483
30	496	612	553	499	---	630	485	523	634	603	545	485
31	526	---	570	504	---	618	---	512	---	556	455	---
MEAN	475	528	613	446	516	581	472	473	506	583	570	416

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	18.5	14.0	5.5	9.0	14.0	16.5	21.0	26.0	26.5	28.5	25.0
2	25.0	19.0	15.0	6.5	9.5	16.0	18.0	22.5	26.5	27.0	30.0	26.0
3	25.0	20.0	14.0	6.0	10.0	14.0	18.0	22.5	26.0	26.5	29.0	26.0
4	25.0	19.0	11.5	6.0	12.0	15.0	19.5	22.5	24.5	27.0	29.5	25.0
5	25.0	16.5	11.0	7.0	13.5	15.0	19.5	21.0	25.0	27.0	29.0	25.0
6	25.0	16.0	10.5	8.0	14.0	16.0	18.0	20.0	25.5	27.0	29.0	25.0
7	26.0	16.0	10.0	7.0	13.0	16.0	20.5	20.0	26.0	27.5	29.0	25.5
8	27.0	15.0	9.0	7.0	12.0	15.0	21.0	20.0	25.0	27.5	29.0	26.0
9	24.0	13.0	9.0	9.0	12.0	15.0	22.5	19.0	24.0	27.5	29.0	25.0
10	20.0	12.0	9.0	11.0	12.0	15.0	22.0	21.0	23.0	27.0	29.5	25.0
11	19.0	11.5	10.5	10.0	13.0	15.0	22.5	20.0	23.0	27.0	29.5	25.0
12	18.0	12.5	13.0	10.0	14.0	17.0	23.0	20.0	24.5	27.0	29.5	25.0
13	17.5	13.0	13.0	10.0	15.0	15.5	23.5	20.5	25.5	27.0	29.0	25.0
14	19.0	14.0	14.0	9.5	14.0	15.0	21.0	20.5	25.0	27.5	28.5	25.0
15	21.0	15.0	16.0	11.0	13.5	14.0	21.0	20.5	24.0	29.0	28.0	25.0
16	22.0	16.0	15.0	10.0	12.0	13.0	21.0	22.5	25.0	28.5	28.0	25.0
17	22.5	16.5	17.0	10.5	13.0	14.0	22.0	20.5	25.0	28.5	28.0	25.0
18	20.0	17.0	16.0	10.0	15.0	14.5	21.5	20.0	25.5	28.5	28.0	25.0
19	19.0	18.0	15.0	10.0	14.0	15.0	22.5	20.0	25.0	28.5	28.0	22.0
20	21.0	19.0	15.0	10.0	13.0	17.0	20.5	20.0	25.0	29.0	28.0	21.0
21	19.0	20.0	14.0	10.0	12.5	18.0	21.0	20.0	25.0	29.5	29.0	20.0
22	16.0	21.0	7.0	8.0	12.5	19.0	21.5	20.5	25.0	29.0	29.5	20.0
23	15.5	19.5	5.0	9.0	12.5	18.0	21.0	21.5	24.5	28.5	28.5	21.0
24	14.5	17.0	4.0	9.0	13.0	18.0	22.0	21.5	25.0	28.0	28.5	23.0
25	15.0	19.5	5.0	9.0	13.0	18.5	21.5	22.0	25.0	29.0	28.0	21.0
26	15.0	20.5	5.0	9.5	12.0	20.0	22.0	24.0	25.0	28.5	28.0	20.0
27	19.0	21.0	5.0	10.0	12.0	20.5	23.0	25.0	25.5	28.5	28.0	20.5
28	19.0	16.0	7.0	11.0	12.5	19.5	22.0	25.0	26.5	29.0	28.0	20.0
29	17.5	15.0	10.0	12.0	---	17.0	21.0	25.0	26.5	29.0	30.0	19.0
30	20.0	12.5	8.0	10.0	---	16.0	21.0	25.0	26.0	28.5	28.5	19.0
31	19.0	---	5.0	9.0	---	16.0	---	26.0	---	28.5	27.5	---
MEAN	20.5	16.6	10.7	9.0	12.6	16.2	21.0	21.6	25.1	28.0	28.7	23.3

08109000 BRAZOS RIVER NEAR BRYAN, TX

LOCATION.--Lat 30°36'50", long 96°29'11", Brazos-Burleson County line, Hydrologic Unit 12070101, on left bank 2.4 mi downstream from Little Brazos River, 5 mi downstream from Texas and New Orleans Railroad Co. bridge, 9 mi southwest of Bryan, and at mile 281.1.

DRAINAGE AREA.--39,515 mi², approximately, of which 9,566 mi² probably is noncontributing.

PERIOD OF RECORD.--August 1899 to December 1902, February 1918 to January 1926, June 1926 to current year. Monthly figures only for some periods, published in WSP 1312. Prior to September 1925, published as "near College Station".

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is 192.33 ft above National Geodetic Vertical Datum of 1929. Aug. 1, 1899, to Dec. 31, 1902, and Feb. 23, 1918, to Sept. 17, 1925, nonrecording gage at site 7.5 mi downstream at different datum. Sept. 11, 1925, to Oct. 24, 1932 nonrecording a gage at site 3,000 ft upstream at present datum.

REMARKS.--Records good. Flow is partly regulated by six upstream reservoirs with a combined capacity of 4,828,600 acre-ft, of which 3,482,690 acre-ft is for flood control. Many small diversions above station for irrigation, municipal, industrial, and oil field operation. Flow is affected at times by discharge from the flood-detention pools of 145 floodwater-retarding structures with a combined detention capacity of 152,800 acre-ft. These structures control runoff from 450 mi². Since 1941, at least 10 percent of drainage area is regulated by upstream reservoirs. Several observations of water temperature were made during the year. Satellite telemeter (DCP) at station.

AVERAGE DISCHARGE.--24 years (water years 1900-1902, 1919-25, 1927-40) unregulated, 5,652 ft³/s (4,095,000 acre-ft/yr); 51 years (water years 1941-91) regulated, 4,841 ft³/s (3,507,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 54 ft Sept. 12, 1921, present site and datum (discharge not determined); minimum daily, 89 ft³/s Aug. 24, 1934. Maximum stage since at least 1854, that of Sept. 12, 1921.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 5, 1913, reached a stage of 51 ft, present site and datum, from information by Texas and New Orleans Railroad Co. at their bridge 5 mi upstream and from comparison of maximum stages reached by floods in 1913 and 1921 at gage near College Station. Flood in 1854 reached about the same stage as flood of Dec. 5, 1913.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43,700 ft³/s Jan. 11 at 1000 hours (gage height, 23.62 ft); minimum daily, 433 ft³/s Nov. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	748	2270	862	1300	3720	2900	1690	2580	3510	2370	793	2560
2	800	1400	1010	1460	3810	3300	1670	2390	2870	2380	993	3100
3	1080	961	977	3210	3410	3830	1790	2760	2490	1920	742	1950
4	1160	658	1410	4630	4530	3520	1530	4360	2470	1830	1020	1790
5	1180	484	1160	4430	15900	2490	2130	16000	3480	1860	1110	2530
6	1590	433	892	3920	17400	1930	2470	13000	4100	2080	1050	2610
7	1980	750	684	3160	12700	1820	3850	7620	6090	1950	968	2250
8	1970	709	1560	3460	10000	1700	2680	5680	8460	1920	922	2360
9	1620	1760	1260	7040	6610	1540	2220	11100	16600	1950	950	2810
10	1470	5230	1050	31200	4510	1410	2840	16800	19300	2960	956	2610
11	1830	5210	932	42800	4110	1380	e2920	11300	19300	2010	959	2010
12	2340	3240	727	35300	3640	1500	e2080	10000	19300	1630	1170	1970
13	1740	2140	591	15700	3260	1400	e1940	9310	19200	1510	1100	1920
14	1820	2670	673	10400	2900	1300	10300	9240	19500	1190	1100	1960
15	1890	1550	865	10100	2990	1210	24600	10100	19400	1050	3610	1980
16	1880	1000	692	10400	2640	1410	17900	19200	19300	1250	9370	1730
17	1600	781	565	8890	2510	1490	11900	15900	18600	958	6820	1690
18	1600	737	496	10400	2450	1480	12000	11600	16200	876	5790	1340
19	1430	723	434	21200	4280	1630	15100	10400	14000	1290	4330	1170
20	1380	886	438	18300	9930	1480	13600	8190	13000	1430	3570	1100
21	1620	1210	455	10200	6820	1430	9630	7440	12500	1470	3760	2930
22	1210	1190	503	6330	4650	1340	7390	6650	9930	1510	3600	3240
23	1650	1320	694	4570	3720	1250	6330	5770	7140	1260	2390	1700
24	2670	1410	774	5150	3600	1230	5950	5320	6160	861	4940	1870
25	2330	1660	749	5470	3400	1280	5350	5140	5290	701	3540	5010
26	1310	1630	847	5480	2920	1360	4330	9930	4830	1060	3040	3740
27	825	1360	775	4600	2530	1420	4000	10900	4420	1530	2720	3870
28	1080	1090	762	4220	2270	1550	3270	9120	3840	1580	2570	3890
29	703	848	963	4310	---	1690	3030	6780	3540	1560	2580	3730
30	979	685	900	4020	---	1560	2890	4890	2890	1330	2650	3160
31	2050	---	1220	3770	---	1930	---	3840	---	1130	2560	---
TOTAL	47535	45995	25920	305420	151210	54760	187380	273310	307710	48406	81673	74580
MEAN	1533	1533	836	9852	5400	1766	6246	8816	10260	1561	2635	2486
MAX	2670	5230	1560	42800	17400	3830	24600	19200	19500	2960	9370	5010
MIN	703	433	434	1300	2270	1210	1530	2390	2470	701	742	1100
AC-FT	94290	91230	51410	605800	299900	108600	371700	542100	610300	96010	162000	147900

CAL YR 1990 TOTAL 2633296 MEAN 7215 MAX 59700 MIN 294 AC-FT 5223000
WTR YR 1991 TOTAL 1603899 MEAN 4394 MAX 42800 MIN 433 AC-FT 3181000

e Estimated

08109700 MIDDLE YEGUA CREEK NEAR DIME BOX, TX

LOCATION.--Lat 30°20'21", long 96°54'16", Lee County, Hydrologic Unit 12070102, on right bank 25 ft upstream from centerline of State Highway 21, 4.5 mi upstream from West Yegua Creek, 5.0 mi southwest of Dime Box, and 17.5 mi upstream from mouth.

DRAINAGE AREA.--236 mi^2.

PERIOD OF RECORD.--August 1962 to current year.

GAGE.--Water-stage recorder, and data collection platform (DCP). Datum of gage is 295.4 ft above State Department of Highways and Public Transportation datum. June 30 to July 21, 1970, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records fair. Several observations of water temperature were made during the year. A U.S. Army Corps of Engineers satellite (DCP) telemeter at station.

AVERAGE DISCHARGE.--29 years, 50.7 ft^3/s (2.92 in/yr), 36,730 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft^3/s May 24, 1975 (gage height, 15.16 ft); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1851, 16 ft in December 1913, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 10	2000	*4,830	*13.11	Feb. 6	1500	1,760	11.07
Jan. 18	1700	1,430	10.72	Apr. 9	1100	687	9.65
Jan. 20	1600	1,870	11.17				

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	30	33	15	24	8.2	.87	.00	.00
2	.00	.00	.00	21	26	47	14	20	9.2	.91	.00	.78
3	.00	.00	.00	20	24	46	14	21	8.3	.94	.00	27
4	.00	.00	.00	8.5	302	35	17	60	9.6	5.0	.00	33
5	.00	.00	.00	52	677	27	104	126	10	4.6	.00	11
6	.00	.00	.00	24	1400	22	113	62	8.6	2.0	.00	6.9
7	.00	.00	.00	13	1030	20	222	42	6.9	1.5	.00	4.4
8	.00	.00	.00	9.1	628	18	435	57	20	.93	.00	3.4
9	.00	.00	.00	330	191	15	640	43	28	.58	.00	2.6
10	.00	.01	.00	1910	61	14	276	36	29	.22	.00	2.2
11	.00	.01	.00	2830	43	13	75	36	19	.19	.00	1.8
12	.00	3.4	.00	1370	38	12	47	28	13	.11	.00	1.6
13	.00	10	.00	817	34	12	36	21	9.9	.07	.00	1.3
14	.00	7.0	.00	455	30	12	44	28	7.3	7.6	.00	1.2
15	.00	3.0	.00	337	27	12	51	43	5.2	4.8	.00	1.4
16	.00	1.5	.00	337	25	15	58	37	4.6	5.7	.00	1.1
17	.00	.83	.00	318	28	24	55	27	3.7	4.1	.00	.64
18	.00	.71	.00	899	30	42	139	21	2.8	1.8	.00	.41
19	.00	.26	.00	895	30	58	153	22	2.2	.92	.00	.22
20	.00	.13	.00	1480	26	35	197	39	1.9	.40	.00	.12
21	.00	.08	.00	1130	24	25	244	33	1.6	.21	.00	.09
22	.00	.05	.00	674	22	20	136	22	1.4	.11	.00	.08
23	.00	.04	.00	241	20	18	56	30	1.3	.07	.00	.06
24	.00	.03	.00	122	19	18	37	14	1.2	.03	.00	.06
25	.00	.02	.00	125	18	19	30	13	1.2	.01	.00	36
26	.00	.02	.00	145	17	17	26	12	1.4	.00	.00	76
27	.00	.01	.00	157	17	16	23	12	1.7	.00	.00	32
28	.00	.01	.00	85	17	15	22	14	1.3	.00	.00	16
29	.00	.01	.00	49	---	18	22	13	1.1	.00	.00	9.2
30	.00	.01	.00	37	---	16	25	10	1.1	.00	.00	5.0
31	.00	---	.00	33	---	15	---	9.3	---	.00	.00	---
TOTAL	0.00	27.13	0.00	14923.60	4834	709	3326	975.3	220.7	43.67	0.00	275.56
MEAN	.000	.90	.000	481	173	22.9	111	31.5	7.36	1.41	.000	9.19
MAX	.00	10	.00	2830	1400	58	640	126	29	7.6	.00	76
MIN	.00	.00	.00	.00	17	12	14	9.3	1.1	.00	.00	.00
AC-FT	.00	54	.00	29600	9590	1410	6600	1930	438	87	.00	547

CAL YR 1990	TOTAL	1658.11	MEAN	4.54	MAX	151	MIN	.00	AC-FT	3290
WTR YR 1991	TOTAL	25334.96	MEAN	69.4	MAX	2830	MIN	.00	AC-FT	50250

08109800 EAST YEGUA CREEK NEAR DIME BOX, TX

LOCATION.--Lat 30°24'26", long 96°49'02", Burleson County, Hydrologic Unit 12070102, on left bank 49 ft upstream from centerline of State Highway 21, 0.8 mi downstream from Buffalo Creek, 3.5 mi north of Dime Box, and 12.2 mi upstream from mouth.

DRAINAGE AREA.--244 mi².

PERIOD OF RECORD.--August 1962 to current year.
Water-quality records.--Chemical and biochemical analyses: November 1980 to August 1987.
Sediment analyses: June 1966 to September 1975.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is 284.00 ft, State Department of Highways and Public Transportation datum. Nov. 6 to Dec. 10, 1970, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records fair. Diversions above station for irrigation. Several observations of water temperature were made during the year. Gage-height telemeter (DCP) at station.

AVERAGE DISCHARGE.--29 years, 56.4 ft³/s (40,860 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s May 24, 1975 (gage height, 13.91 ft); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1886, 17 ft in 1899 and 1957, from information by local residents.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 11	1000	*1,900	*10.20	Jan. 20	0300	1,800	10.12
Jan. 16	1800	1,270	9.68	Feb. 6	0300	*1,900	*10.20

Minimum daily discharge, no flow for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.46	1.6	.95	29	42	4.5	12	1.0	1.6	10	2.7
2	.02	.52	.64	19	20	67	3.0	11	.91	1.5	7.0	1.7
3	.01	.56	.15	25	16	39	3.5	11	1.6	1.1	4.9	8.6
4	.04	.58	.02	64	554	23	18	10	2.0	1.7	2.7	8.4
5	.03	.63	.00	28	1530	16	379	13	16	1.8	1.2	7.1
6	.02	.67	.00	16	1620	14	483	12	16	1.5	.72	10
7	.01	.67	.00	9.2	712	11	191	6.7	16	1.1	1.1	12
8	.00	4.8	.00	4.8	201	9.6	75	99	31	3.1	1.6	7.5
9	.01	3.8	.00	535	72	8.4	48	79	31	2.8	.91	4.4
10	.02	37	.00	1390	49	6.5	32	34	22	1.5	.76	4.0
11	.02	27	.00	1720	35	6.0	25	18	19	.98	6.1	3.9
12	.01	14	.00	1060	28	8.5	21	13	18	.95	16	11
13	.07	7.3	.00	269	25	11	27	9.6	10	1.1	17	15
14	.18	3.7	.00	89	24	9.5	58	19	4.5	1.2	18	12
15	.08	2.3	.00	292	22	11	74	42	3.8	1.4	12	5.8
16	.01	1.1	.00	1100	16	22	62	22	4.0	3.5	40	3.6
17	.04	.65	.01	962	15	40	34	12	13	4.6	30	2.7
18	.31	.62	.02	852	17	47	50	8.9	15	14	21	1.9
19	.05	4.4	.03	1360	18	29	124	11	9.8	8.6	19	1.1
20	.03	5.1	.04	1520	15	18	131	39	4.0	3.4	17	.71
21	.63	3.9	.07	659	14	14	39	34	2.4	2.5	15	.38
22	.26	3.5	.07	149	14	12	23	14	2.0	2.7	15	.51
23	.02	1.7	.05	60	12	8.8	18	7.7	1.8	7.1	13	2.1
24	.00	1.4	.05	120	11	5.2	19	5.1	1.4	4.0	9.0	2.8
25	.56	2.3	.22	186	13	4.4	19	3.9	1.0	2.9	6.5	5.1
26	1.2	2.0	2.0	209	16	3.7	17	15	.96	2.7	6.0	16
27	.44	.94	3.2	78	16	4.9	15	13	1.5	3.9	5.6	20
28	.34	1.5	16	50	16	7.9	15	3.8	1.7	4.4	6.2	13
29	.37	2.1	9.9	51	---	13	15	2.0	1.6	4.0	6.5	5.3
30	.35	2.7	3.6	43	---	8.8	15	1.3	2.1	3.4	5.6	3.1
31	.51	---	1.4	38	---	7.6	---	1.4	---	9.1	7.1	---
TOTAL	5.66	137.90	39.07	12958.95	5130	528.8	2038.0	583.4	255.07	104.13	322.49	192.40
MEAN	.18	4.60	1.26	418	183	17.1	67.9	18.8	8.50	3.36	10.4	6.41
MAX	1.2	37	16	1720	1620	67	483	99	31	14	40	20
MIN	.00	.46	.00	.95	11	3.7	3.0	1.3	.91	.95	.72	.38
AC-FT	11	274	77	25700	10180	1050	4040	1160	506	207	640	382

CAL YR 1990 TOTAL 6002.12 MEAN 16.4 MAX 2340 MIN .00 AC-FT 11910
WTR YR 1991 TOTAL 22295.87 MEAN 61.1 MAX 1720 MIN .00 AC-FT 44220

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX

LOCATION.--Lat 30°19'20", long 96°31'32", Burleson County, Hydrologic Unit 12070102, in intake structure of Somerville Dam on Yegua Creek, at the southwest edge of the city limits of Somerville, and 20.0 mi upstream from mouth.

DRAINAGE AREA.--1,007 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1966 to current year. Prior to October 1970, published as Somerville Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 20,210 ft long, with a 4,715-foot-long dike and a 1,250-foot long uncontrolled spillway. Deliberate impoundment began Jan. 3, 1967, and the dam was completed Oct. 27, 1967. The spillway is an uncontrolled ogee weir 1,250 ft wide located near right end of dam. The low-flow outlet consists of one 10.0-foot-diameter conduit that is controlled by two 5.0- by 10.0-foot tractor-type gates. Capacity table is based on Geological Survey topographic maps dated 1959. The lake was designed for flood control and water conservation. Gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	280.0	-
Design flood	274.5	1,028,800
Crest of spillway	258.0	507,500
Top of conservation pool	238.0	160,100
Lowest gated outlet (invert of 10-foot conduit)	206.0	200

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 311,000 acre-ft June 9, 1979 (elevation, 248.55 ft); minimum, 88,800 acre-ft Oct. 5, 1984 (elevation, 230.70 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 288,500 acre-ft Feb. 8 (elevation, 247.22 ft); minimum daily, 132,800 acre-ft Dec. 25 (elevation, 235.48 ft).

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

235.0	127,900	241.0	198,800	246.0	268,800
237.0	148,900	243.0	223,900	247.0	284,900
239.0	171,800	245.0	253,300	248.0	301,600

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	138500	135700	135400	133900	266900	224900	172400	195000	165900	158600	154900	151300
2	138300	135700	135500	135400	263500	223500	170600	193400	164600	158600	154800	151400
3	138200	135700	135300	136900	260500	222000	168500	192800	163800	158700	154400	152400
4	137900	135900	135000	138000	266400	220100	168200	194300	163300	158700	154200	153300
5	138000	135600	134700	138400	276000	218300	178100	197700	162400	158500	154000	153500
6	137900	135300	134700	138700	284400	216300	185800	199300	161000	158400	153900	154000
7	137700	135300	134400	138700	287900	214600	192000	198500	162100	158400	153700	154100
8	137700	137000	134200	138800	288500	212500	194600	198300	162300	158400	153500	154100
9	137900	136700	134100	144100	287200	210500	194700	198400	163000	158200	153200	154100
10	137400	136500	134100	158200	284600	208700	194000	197900	163000	157900	152900	154000
11	137100	136400	134100	172800	281500	206600	193100	196400	161700	157700	152800	153900
12	137000	136500	134100	183500	278200	205000	191600	195000	161000	157500	152400	154200
13	136800	136400	134000	188700	275200	203100	190100	193400	160600	157300	152200	154000
14	136700	136400	134000	199400	272000	200900	197100	191900	160300	157000	152300	154100
15	136600	136300	134000	217600	268200	199600	204900	190200	162100	156900	153200	154000
16	136500	136400	134000	225600	265500	198900	205700	189900	162900	156700	153100	154000
17	137600	136400	134200	228200	261900	198100	204700	189600	163000	156600	152900	153900
18	137300	136300	134100	249800	259900	196300	206600	188200	161500	156200	153000	153800
19	137000	136300	133900	271700	256300	195000	211200	187200	160300	156000	152900	153100
20	136900	136200	133900	279200	253000	193300	212800	186000	160100	155800	152800	152800
21	137200	136300	133900	282400	250400	191600	212100	184400	160100	155600	152500	152500
22	136900	136400	133600	282900	246800	190200	211000	182800	159800	156600	152300	152400
23	136800	136400	133300	282600	243200	188500	209400	181300	159800	156700	152000	152500
24	136600	136300	133000	283600	240100	186200	207800	179400	159700	156400	151900	153200
25	136400	136300	132800	283900	237600	184500	206100	177600	159800	156200	151700	152900
26	136300	136300	133600	283300	234100	182700	204500	176000	159800	156000	151500	152700
27	136300	136200	134000	281600	230600	180700	202600	174000	159100	155900	151200	152700
28	136200	135900	134100	278700	228000	180200	200900	171900	158700	155800	151000	152500
29	136100	135700	134300	275600	---	177900	198800	170500	158700	155800	150900	152500
30	136000	135500	134100	273100	---	176100	196900	168700	158500	155500	150700	152400
31	135900	---	133900	269700	---	174100	---	167200	---	155200	151300	---
MAX	138500	137000	135500	283900	288500	224900	212800	199300	165900	158700	154900	154200
MIN	135900	135300	132800	133900	228000	174100	168200	167200	158500	155200	150700	151300
(†)	235.78	235.74	235.59	246.06	243.29	239.19	241.01	238.61	237.86	237.57	237.22	237.22
(ϕ)	-2800	-400	-1600	+135800	-41700	-53900	+22800	-29700	-8700	-3300	-3900	+1100

CAL YR 1990 MAX 171800 MIN 132800 (ϕ) -8700
WTR YR 1991 MAX 288500 MIN 132800 (ϕ) +13700

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1969 to August 1991 (discontinued).

301908096313101 - SOMERVILLE LAKE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	RESERVOIR STORAGE (AC-FT)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
DEC												
06...	0810	135000	1.00	515	8.1	14.5	0.70	8.9	88	K16	--	140
06...	0812	--	10.0	515	8.1	14.5	--	8.6	85	--	--	--
06...	0814	--	20.0	515	8.1	14.5	--	8.6	85	--	--	--
06...	0816	--	27.0	515	8.1	14.0	--	8.6	84	--	--	140
MAY												
01...	0810	195000	1.00	285	7.4	24.0	0.60	6.2	74	<2	<2	86
01...	0812	--	10.0	285	7.4	24.0	--	6.1	73	--	--	--
01...	0814	--	15.0	284	7.4	24.0	--	6.0	72	--	--	--
01...	0816	--	20.0	284	7.1	23.0	--	3.5	41	--	--	--
01...	0818	--	25.0	285	7.0	23.0	--	1.8	21	--	--	--
01...	0820	--	31.0	289	7.3	22.5	--	0.1	1	--	--	83
AUG												
21...	0810	153000	1.00	323	7.5	29.5	0.40	5.5	73	K1	K18	92
21...	0812	--	10.0	323	7.2	29.0	--	2.6	34	--	--	--
21...	0814	--	20.0	323	7.2	29.0	--	2.6	34	--	--	--
21...	0816	--	28.0	323	7.1	29.0	--	0	0	--	--	95

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
DEC											
06...	64	41	9.9	40	1	8.8	79	61	62	0.50	11
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	63	41	9.9	40	1	8.4	80	67	62	0.30	11
MAY											
01...	42	25	5.8	19	0.9	5.9	44	38	31	0.20	8.1
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	36	24	5.5	19	0.9	5.9	47	41	32	0.20	10
AUG											
21...	39	27	6.0	22	1	6.1	53	42	34	0.20	12
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	36	28	6.1	21	0.9	6.3	59	44	36	0.20	12

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
DEC											
06...	282	--	0.020	<0.050	0.030	1.1	1.1	0.050	0.010	5	<1
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	288	--	0.030	<0.050	0.040	1.2	1.2	0.060	0.020	8	16
MAY											
01...	159	0.270	0.030	0.300	0.040	0.76	0.80	0.060	0.010	39	3
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	0.380	0.070	0.450	0.060	0.84	0.90	0.080	0.030	40	10
01...	--	--	--	--	--	--	--	--	--	--	--
01...	166	0.410	0.100	0.510	0.200	0.90	1.1	0.120	0.070	50	450
AUG											
21...	181	0.051	0.010	0.061	0.030	0.97	1.0	0.080	0.020	<3	40
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	0.034	0.030	0.064	0.100	1.0	1.1	0.090	0.040	<10	240
21...	190	--	0.020	<0.050	0.220	1.4	1.6	0.140	0.020	90	930

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

301940096315801 - SOMERVILLE LAKE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
DEC							
06...	0830	1.00	514	8.0	15.0	8.6	86
06...	0832	10.0	514	8.0	15.0	8.5	85
06...	0834	22.0	514	8.0	15.0	8.4	84
MAY							
01...	0845	1.00	284	7.4	24.0	6.2	74
01...	0847	10.0	284	7.4	24.0	6.0	72
01...	0849	15.0	284	7.0	23.5	3.3	39
01...	0851	20.0	286	7.0	23.0	2.2	26
01...	0853	25.0	285	7.1	23.0	1.6	19
AUG							
21...	0830	1.00	323	8.6	30.0	7.4	99
21...	0832	10.0	323	8.4	29.5	7.1	94
21...	0834	21.0	323	7.5	29.0	3.8	50

302026096341501 - SOMERVILLE LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
DEC							
06...	0840	1.00	515	8.1	14.0	8.8	86
06...	0842	12.0	515	8.1	14.0	8.4	82
MAY							
01...	0905	1.00	284	7.7	24.5	7.0	85
01...	0907	14.0	286	7.3	24.5	5.2	63
AUG							
21...	0845	1.00	320	8.8	31.0	7.8	106
21...	0847	12.0	323	7.6	30.0	3.7	49

301805096332501 - SOMERVILLE LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
DEC							
06...	0916	1.00	514	8.0	14.5	8.5	84
06...	0918	15.0	514	8.2	13.5	9.2	89
MAY							
01...	0955	1.00	288	7.4	24.0	6.0	72
01...	0957	10.0	288	7.4	24.0	5.6	67
01...	0959	16.0	287	7.3	23.5	5.4	64
AUG							
21...	0900	1.00	323	7.4	29.5	3.4	45
21...	0902	10.0	323	7.4	29.5	3.1	41
21...	0904	15.0	323	7.1	29.0	0	0

301847096334601 - SOMERVILLE LAKE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
DEC							
06...	0910	1.00	515	7.9	15.0	8.2	82
06...	0912	10.0	515	7.9	15.0	8.1	81
06...	0914	20.0	515	7.9	15.0	8.1	81
MAY							
01...	0945	1.00	285	7.4	24.0	5.8	69
01...	0947	10.0	285	7.3	24.0	5.6	67
01...	0949	23.0	286	7.1	23.5	2.1	25
AUG							
21...	0910	1.00	321	8.7	30.0	7.5	100
21...	0912	10.0	323	8.2	29.5	5.4	71
21...	0914	20.0	323	7.6	29.5	3.9	52

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

301904096335601 - SOMERVILLE LAKE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
DEC											
06...	0855	1.00	514	8.1	14.5	0.60	8.9	88	K10	--	140
06...	0857	10.0	514	8.1	14.5	--	8.8	87	--	--	--
06...	0859	24.0	514	8.1	14.5	--	8.6	85	--	--	140
MAY											
01...	0915	1.00	286	7.5	24.5	0.60	6.4	77	K2	K2	81
01...	0917	10.0	285	7.4	24.0	--	5.8	69	--	--	--
01...	0919	15.0	284	7.3	24.0	--	5.7	68	--	--	--
01...	0921	20.0	286	7.1	23.5	--	4.2	50	--	--	--
01...	0923	28.0	289	7.0	23.0	--	0.6	7	--	--	81
AUG											
21...	0920	1.00	318	8.7	30.5	0.60	7.0	94	K4	K14	95
21...	0922	10.0	321	7.9	30.0	--	4.9	65	--	--	--
21...	0924	20.0	323	7.0	29.0	--	0.2	3	--	--	--
21...	0926	25.0	324	7.2	29.0	--	0	0	--	--	95

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
DEC											
06...	63	41	10	40	1	8.8	81	65	61	0.50	10
06...	--	--	--	--	--	--	--	--	--	--	--
06...	64	41	10	40	1	8.7	80	66	65	0.60	10
MAY											
01...	36	23	5.6	19	0.9	5.9	45	38	32	0.20	7.9
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	35	23	5.8	19	0.9	5.9	46	38	31	0.20	9.7
AUG											
21...	41	28	6.1	22	1	6.2	54	43	33	0.20	12
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	39	28	6.1	22	1	6.1	56	41	33	0.20	12

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
DEC											
06...	285	--	0.020	<0.050	0.020	1.4	1.4	0.070	0.020	6	4
06...	--	--	--	--	--	--	--	--	--	--	--
06...	289	--	0.030	<0.050	0.050	1.2	1.2	0.060	0.020	<3	18
MAY											
01...	159	0.270	0.030	0.300	0.030	0.87	0.90	0.080	0.020	36	4
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	0.340	0.060	0.400	0.070	0.83	0.90	0.090	0.040	30	10
01...	160	0.360	0.130	0.490	0.200	1.1	1.3	0.120	0.070	50	180
AUG											
21...	183	--	<0.010	<0.050	<0.010	--	1.0	0.060	<0.010	<3	5
21...	--	--	0.010	<0.050	0.030	0.97	1.0	0.070	0.030	<10	70
21...	--	--	--	--	--	--	--	--	--	--	--
21...	183	0.130	0.020	0.150	0.190	1.1	1.3	0.150	0.020	130	680

301817096364101 - SOMERVILLE LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
DEC							
06...	0930	1.00	515	8.1	14.5	9.0	89
06...	0932	16.0	515	8.1	14.0	8.4	82
MAY							
01...	1010	1.00	282	7.4	25.0	6.1	74
01...	1012	10.0	279	7.3	24.5	5.4	65
01...	1014	21.0	281	7.1	24.0	3.0	36
AUG							
21...	0955	1.00	330	8.2	30.0	5.4	72
21...	0957	10.0	330	7.8	30.0	3.7	49
21...	0959	18.0	335	7.4	29.5	0.1	1

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

301754096380801 - SOMERVILLE LAKE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
DEC											
06...	0945	1.00	524	8.0	12.5	0.40	9.0	85	K15	--	150
06...	0947	8.00	524	8.0	12.0	--	8.6	80	--	--	150
MAY											
01...	1030	1.00	279	7.3	25.5	0.40	5.8	71	K2	K6	82
01...	1032	11.0	286	7.1	24.5	--	3.1	37	--	--	85
AUG											
21...	1010	1.00	360	8.6	31.0	0.40	6.8	92	K8	K8	110
21...	1012	9.00	385	7.2	30.5	--	0.6	8	--	--	110

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
DEC											
06...	64	42	10	41	1	8.7	82	62	65	0.60	9.0
06...	62	42	10	41	1	8.9	84	71	68	0.50	9.1
MAY											
01...	39	23	6.0	18	0.9	6.0	43	38	29	0.10	9.6
01...	41	24	6.2	18	0.8	6.1	44	41	30	0.20	12
AUG											
21...	54	31	7.1	28	1	6.4	53	55	41	0.20	12
21...	53	33	7.7	29	1	6.6	61	59	42	0.20	12

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
DEC											
06...	288	--	0.030	<0.050	0.030	1.3	1.3	0.090	0.040	62	14
06...	301	--	0.050	<0.050	0.070	1.2	1.3	0.120	0.070	<3	15
MAY											
01...	156	0.240	0.100	0.340	0.050	1.0	1.1	0.120	0.040	58	9
01...	164	0.160	0.180	0.340	0.190	1.2	1.4	0.160	0.090	110	180
AUG											
21...	212	--	<0.010	<0.050	<0.010	--	1.2	0.100	<0.010	7	35
21...	226	--	<0.010	<0.050	0.010	1.2	1.2	0.170	0.030	11	450

Somerville Lake AC (301908096313101)

Phytoplankton Analyses October 1990 to September 1991

Date	12-6-90
Time	0810
TOTAL CELLS/mL	986,743
NUMBER OF SPECIES	38
DEPTH COLLECTED (ft.)	1.2

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Cyclotella meneghiniana	5,375
Cyclotella ocellata	5,375
Cyclotella operculata	896
Melosira granulata	5,375
Melosira granulata var. *angustissima*	6,271
Melosira italica	896
Stephanodiscus astraea	1,344
Stephanodiscus astraea var. *minutula*	2,240
Order Pennales	
Achnanthes minutissima	2,811
Diploneis puella	2,378
Navicula cryptocephala var. *veneta*	649
Navicula sp.	1,297
Nitzschia acicularis	2,811
Nitzschia denticula	649
Nitzschia palea	3,243
Synedra rumpens	865
CHLOROPHYTA (Green algae)	
Ankistrodesmus convolutus	6,535
Ankistrodesmus falcatus	21,238
Chlorella sp.	14,703
Chlorococcum humicola	17,971
Kirchneriella lunaris	11,436
Scenedesmus bijuga	3,267
Scenedesmus denticulatus	3,267
Selenastrum minutum	1,634
Tetraëdron minimum	3,267
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	145,398
Aphanocapsa elachista	225,448
Aphanothece nidulans	62,080
Chroococcus dispersus	22,872
Chroococcus multicoloratus	3,267
Dactylococcopsis fascicularis	8,168
Lyngbya nana	4,901
Merismopedia tenuissima	150,299
Oscillatoria angusta	169,903
Oscillatoria angustissima	50,644
EUGLENOPHYTA (Euglenoids)	
Euglena minuta	8,168
CRYPTOPHYTA (Cryptomonads)	
Chroomonas sp.	6,535
Cryptomonas erosa	3,267

Somerville Lake FC (301754096380801)

Phytoplankton Analyses October 1990 to September 1991

Date	12-6-90
Time	0945
TOTAL CELLS/mL	2,989,640
NUMBER OF SPECIES	35
DEPTH COLLECTED (ft.)	0.6

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Cyclotella meneghiniana	420
Cyclotella ocellata	2,240
Cyclotella operculata	980
Melosira granulata	2,240
Melosira granulata var. *angustissima*	18,064
Stephanodiscus astraea	280
Stephanodiscus astraea var. *minutula*	280
Order Pennales	
Achnanthes minutissima	5,035
Diploneis puella	25,177
Navicula sp.	4,028
Nitzschia acicularis	19,134
Nitzschia denticula	5,035
Nitzschia palea	9,064
Synedra delicatissima	2,014
Synedra rumpens	4,028
CHLOROPHYTA (Green algae)	
Ankistrodesmus convolutus	114,358
Ankistrodesmus falcatus	73,516
Chlorella sp.	89,853
Chlorococcum humicola	32,674
Golenkinia radiata	8,168
Kirchneriella lunaris	32,674
Micractinium pusillum	32,674
Oocystis pusilla	32,674
Pediastrum duplex var. *clathratum*	32,674
Tetraëdron minimum	24,505
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	857,684
Aphanocapsa elachista	285,895
Aphanothece nidulans	122,526
Lyngbya nana	24,505
Merismopedia tenuissima	179,705
Oscillatoria angusta	677,979
Oscillatoria angustissima	122,526
Pseudanabaena catenata	73,516
EUGLENOPHYTA (Euglenoids)	
Euglena minuta	8,168
CRYPTOPHYTA (Cryptomonads)	
Chroomonas sp.	65,347

Somerville Lake AC (301908096313101)

Phytoplankton Analyses October 1990 to September 1991

Date	5-1-91
Time	0810
TOTAL CELLS/mL	276,091
NUMBER OF SPECIES	14
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Aulacoseira granulata	2,985
Cyclotella meneghiniana	2,786
Cyclotella ocellata	10,548
Melosira varians	398
Stephanodiscus astraea var. *minutula*	2,886
Order Pennales	
Navicula sp.	2,178
Nitzschia acicularis	1,089
CHLOROPHYTA (Green algae)	
Chlamydomonas sp.	3,267
Chlorococcum humicola	8,168
Kirchneriella lunaris	1,634
Micratinium pusillum	6,535
CHRYSOPHYTA (Golden-brown algae)	
Unknown flagellate	1,634
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	230,349
CRYPTOPHYTA (Cryptomonads)	
Cryptomonas erosa	1,634

Somerville Lake FC (301754096380801)

Phytoplankton Analyses October 1990 to September 1991

Date	5-1-91
Time	1030
TOTAL CELLS/mL	856,510
NUMBER OF SPECIES	17
DEPTH COLLECTED (ft.)	0.6

Organisms	Cells/mL
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
Aulacoseira granulata	230
Cyclotella meneghiniana	2,876
Cyclotella ocellata	12,540
Melosira varians	690
Stephanodiscus astraea var. *minutula*	460
Order Pennales	
Achnanthes hauckiana	467
Navicula arvensis	467
Navicula sp.	467
Nitzschia acicularis	233
CHLOROPHYTA (Green algae)	
Chlorella ellipsoidea	4,901
Chlorococcum humicola	4,901
Kirchneriella lunaris	1,634
Oocystis pusilla	6,535
CHRYSOPHYTA (Golden-brown algae)	
Kephyrion sp.	3,267
CYANOPHYTA (Blue-green algae)	
Aphanocapsa delicatissima	475,402
Aphanocapsa elachista	17,971
Microcystis aeruginosa	323,469

08110000 YEGUA CREEK NEAR SOMERVILLE, TX

LOCATION.--Lat 30°19'18", long 96°30'26", Burleson County, Hydrologic Unit 12070102, on left bank 40 ft downstream from bridge on State Highway 36, 860 ft downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 1.0 mi downstream from Somerville Lake, 2.0 mi south of Somerville, 5.0 mi upstream from Davidson Creek, and 18.4 mi upstream from mouth.

DRAINAGE AREA.--1,009 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to September 1991. Beginning October 1991, discharge measurements only.

REVISED RECORDS.--WSP 1512: 1926(M), 1929, 1935. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder, and data collection platform (DCP). Datum of gage is 199.21 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 30, 1934, nonrecording gage at railway bridge 860 ft upstream at datum 34.30 ft higher. Jan. 30, 1934, to Nov. 30, 1970, water-stage recorder at highway bridge 100 ft upstream at same datum.

REMARKS.--Records good above 1.0 ft³/s, and fair below, except those for estimated daily discharges, which are poor. Flow regulated by Somerville Lake (station 08109900) since Feb. 3, 1965. U.S. Army Corps of Engineers telemeter (DCP) at station.

AVERAGE DISCHARGE.--41 years (water years 1925-65) unregulated, 290 ft³/s (210,100 acre-ft/yr); 26 years (water years 1966-91) regulated, 276 ft³/s (200,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,800 ft³/s July 1, 1940 (gage height, 19.27 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 22 ft Dec. 5, 1913, present site and datum, from information by Gulf, Colorado, and Santa Fe Railway Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,940 ft³/s Feb. 19 at 0200 hours (gage height, 8.56 ft); no flow on several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.91	.28	.09	1.3	1720	1880	942	1080	728	.45	.10	.00
2	1.0	.27	.08	1.6	1720	1600	953	1080	727	.43	.10	.00
3	1.2	.23	.09	2.9	1740	1040	958	1080	729	.52	.09	.00
4	1.3	.28	.08	1.9	1630	931	970	1080	608	.53	.08	.01
5	1.4	.29	.07	1.4	300	926	814	1070	579	.24	.07	.02
6	1.4	.28	2.5	1.2	313	931	66	1060	829	.13	.06	.02
7	1.4	.28	1.7	1.1	863	929	18	1060	249	.11	.06	.02
8	1.4	.37	1.3	.93	1370	928	287	1070	16	.13	.06	.02
9	1.8	.69	1.1	3.4	1710	933	821	1070	5.4	.15	.05	.01
10	1.6	.73	1.0	20	1760	936	1020	1070	145	.16	.04	.01
11	1.2	.68	1.1	24	1760	937	1030	1060	643	.15	.03	.00
12	.88	.54	1.2	72	1770	940	1040	1070	458	.15	.02	.00
13	.70	.43	1.3	260	1770	939	1040	1060	140	.15	.02	.00
14	.59	.30	1.3	523	1780	931	1010	1060	70	.12	.02	.00
15	.55	e.24	1.3	566	1790	935	125	1050	16	.10	.11	.00
16	.55	e.20	1.2	49	1830	937	435	1060	8.3	.10	.20	.00
17	.78	e.18	1.1	313	1870	939	1030	1060	341	.11	.22	.00
18	1.1	e.15	1.1	581	1890	931	1050	1040	944	.11	.23	.00
19	1.1	e.14	1.0	74	1900	932	1060	1030	506	.10	.20	.00
20	1.1	e.13	.97	317	1850	930	1070	1030	6.6	.10	.18	.00
21	1.1	.12	.91	892	1830	938	1060	1030	.24	.10	.14	.00
22	1.3	.12	.82	1400	1820	930	1070	1020	.14	.10	.13	.00
23	1.2	.14	.77	1720	1830	918	1070	1020	.21	.14	.12	.00
24	1.0	.14	.70	1680	1860	917	1070	1020	.30	.15	.10	.00
25	.86	.14	.70	1140	1830	922	1080	1010	.37	.14	.07	.00
26	.68	.14	.85	990	1770	927	1080	1010	.37	.13	.03	.00
27	.57	.14	1.2	1150	1790	923	1080	1010	.37	.13	.02	.00
28	.48	.13	1.3	1650	1820	919	1080	1010	.46	.11	.01	.00
29	.41	.12	1.4	1720	---	926	1080	1010	.51	.11	.00	.00
30	.33	.10	1.4	1710	---	926	1080	1000	.52	.11	.00	.00
31	.29	---	1.4	1720	---	928	---	890	---	.11	.00	---
TOTAL	30.18	7.98	31.03	18586.73	45886	30559	26489	32270	7751.79	5.37	2.56	0.11
MEAN	.97	.27	1.00	600	1639	986	883	1041	258	.17	.083	.004
MAX	1.8	.73	2.5	1720	1900	1880	1080	1080	944	.53	.23	.02
MIN	.29	.10	.07	.93	300	917	18	890	.14	.10	.00	.00
AC-FT	60	16	62	36870	91010	60610	52540	64010	15380	11	5.1	.2

CAL YR 1990	TOTAL	7605.02	MEAN	20.8	MAX	823	MIN	.00	AC-FT	15080
WTR YR 1991	TOTAL	161619.75	MEAN	443	MAX	1900	MIN	.00	AC-FT	320600

e Estimated

08110000 YEGUA CREEK NEAR SOMERVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1942 to March 1959, September 1961 to September 1967, October 1968 to September 1980. Chemical and biochemical analyses: October 1980 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1961 to September 1967.
WATER TEMPERATURE: September 1961 to June 1967.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,380 microsiemens Apr. 14, 1962; minimum daily, 53 microsiemens Sept. 13, 1961.
WATER TEMPERATURE: Maximum daily, 33.0°C June 11, July 31, 1965; minimum daily, 1.5°C Jan. 14, 1964.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)
DEC											
06...	1330	2.2	577	8.7	14.0	6	7.5	10.8	105	1.0	130
MAY											
01...	1215	4910	295	7.2	24.0	55	17	8.0	95	1.3	83

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
DEC											
06...	99	37	10	50	2	8.4	35	95	81	0.40	5.6
MAY											
01...	39	24	5.6	19	0.9	5.8	44	38	30	0.20	8.6

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)
DEC											
06...	309	7	<1	--	--	0.010	<0.100	0.020	--	--	0.060
MAY											
01...	158	23	12	11	0.340	0.050	0.390	0.060	0.74	0.80	0.090

DATE	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
DEC											
06...	--	8.5	1	110	<0.5	<1.0	<5	<3	<10	5	<10
MAY											
01...	0.030	8.6	1	76	<0.5	<1.0	<5	<3	20	12	<10

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
DEC										
06...	19	15	<0.1	<10	<10	<1	<1.0	380	<6	7
MAY										
01...	10	28	<0.1	<10	<10	<1	<1.0	200	<6	10

08110100 DAVIDSON CREEK NEAR LYONS, TX

LOCATION.--Lat 30°25'10", long 96°32'24", Burleson County, Hydrologic Unit 12070102, on left bank 83 ft downstream from Farm Road 60, 1.2 mi downstream from Berry Creek, 2.8 mi northeast of Lyons, and 10.7 mi upstream from mouth.

DRAINAGE AREA.--195 mi².

PERIOD OF RECORD.--October 1962 to current year.
Water-quality records.--Sediment records: June 1966 to September 1975.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is 220.26 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. The city of Caldwell discharges sewage effluent into creek above station. Several observations of water temperature were made during the year. Satellite telemeter (DCP) at station.

AVERAGE DISCHARGE.--29 years, 64.7 ft³/s (4.51 in/yr), 46,880 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,200 ft³/s June 24, 1968 (gage height, 18.67 ft); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1902, that of June 24, 1968. Flood in 1947 reached a stage of 17 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 10	0800	*6,580	*16.75	Feb. 5	1300	1,980	15.03
Jan. 15	0930	5,850	16.52	Apr. 6	0330	3,140	15.63
Jan. 19	0430	2,870	15.54	Apr. 14	2330	1,850	14.94

Minimum daily discharge, no flow on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.00	1.1	.59	15	77	8.2	6.5	1.4	.38	4.6	.36
2	.10	.00	1.3	5.5	13	110	6.4	6.5	1.4	.71	2.1	1.1
3	.09	.00	1.2	72	11	57	6.0	8.2	1.7	1.7	.90	21
4	.08	.00	1.5	23	477	29	6.6	10	1.6	.55	.40	158
5	.05	.00	1.4	7.4	1580	17	1400	8.5	1.1	.41	.25	26
6	.03	.00	1.5	4.6	1100	13	2510	6.3	.81	.41	.19	8.5
7	.02	.00	1.6	2.4	539	10	1170	5.5	5.3	.50	.12	5.5
8	.00	.00	1.5	1.7	91	8.9	274	5.3	11	.63	.11	3.2
9	.01	3.7	1.7	483	45	7.4	90	5.2	3.4	2.5	.09	2.0
10	.00	21	2.2	4460	32	6.5	43	4.8	4.8	1.9	.77	1.8
11	.00	5.2	2.5	1620	24	6.1	27	5.1	2.4	1.8	.42	.97
12	.00	1.2	2.7	941	20	6.0	20	5.3	1.4	1.1	.17	.86
13	.00	.38	2.7	216	18	6.5	17	5.2	.77	.75	.15	.84
14	.00	.13	3.0	292	15	5.8	867	4.6	.05	.55	.17	1.4
15	.00	.03	3.0	4020	13	6.2	1210	3.8	2.3	.35	.33	.80
16	.00	.01	3.1	1470	12	11	162	22	1.0	.26	.30	.43
17	.00	.00	3.1	536	11	82	66	15	88	.22	.21	14
18	.00	.00	3.4	1470	11	53	134	10	20	.26	.16	12
19	.00	.00	3.4	2260	12	28	131	15	7.2	.26	.30	4.7
20	.00	.01	3.1	1150	12	17	135	34	3.7	.21	.52	1.9
21	.00	.04	1.2	552	11	17	46	13	2.2	.33	.29	.84
22	.00	.06	.90	84	9.8	11	27	9.2	1.6	.36	.22	.61
23	.00	.09	.73	42	9.1	9.6	18	8.1	1.3	.41	.14	.45
24	.00	.04	.58	588	9.1	8.7	14	8.0	1.3	.30	.07	.47
25	.00	.23	.55	672	8.8	8.0	11	5.3	1.2	.28	.02	60
26	.00	.55	1.1	155	8.5	7.1	10	4.0	.74	.23	.00	22
27	.00	1.2	3.4	64	8.7	8.3	9.2	3.1	.58	.18	.00	7.1
28	.00	1.4	7.5	38	11	8.7	8.4	2.7	.49	.13	.00	3.5
29	.00	.65	5.9	28	---	12	7.4	3.9	.41	6.8	.00	1.8
30	.00	.80	2.5	22	---	14	6.6	2.1	.37	52	.00	.98
31	.00	---	1.1	17	---	10	---	2.0	---	8.8	.07	---
TOTAL	0.51	36.72	70.46	21297.19	4127.0	671.8	8440.8	248.2	169.52	85.27	13.07	363.11
MEAN	.016	1.22	2.27	687	147	21.7	281	8.01	5.65	2.75	.42	12.1
MAX	.13	21	7.5	4460	1580	110	2510	34	88	52	4.6	158
MIN	.00	.00	.55	.59	8.5	5.8	6.0	2.0	.05	.13	.00	.36
AC-FT	1.0	73	140	42240	8190	1330	16740	492	336	169	26	720

CAL YR 1990 TOTAL 19154.88 MEAN 52.5 MAX 6350 MIN .00 AC-FT 37990
WTR YR 1991 TOTAL 35523.65 MEAN 97.3 MAX 4460 MIN .00 AC-FT 70460

08110200 BRAZOS RIVER AT WASHINGTON, TX

LOCATION.--Lat 30°21'40", long 96°09'18", Washington County, Hydrologic Unit 12070101, near right bank beneath floor of bridge on State Highway 105, 2.4 mi upstream from Navasota River, 2.5 mi north of Washington, and at mile 228.8.

DRAINAGE AREA.--41,192 mi², approximately, of which 9,566 mi² probably is noncontributing.

PERIOD OF RECORD.--November 1965 to September 1983. Stage only site October 1983 to current year. Gage heights collected in this vicinity since 1915 are contained in reports of the National Weather Service.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 140.13 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated gage heights. Records good. Backwater at times from the Navasota River. There are many diversions above station for irrigation, municipal, industrial, and oil field operations. At times, flow affected by five upstream reservoirs with a combined capacity of 4,955,000 acre-ft. Flow is also affected by discharge from the flood-detention pools of 147 floodwater-retarding structures with a combined detention capacity of 153,200 acre-ft. These structures control runoff from 451 mi² above station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--17 years (1965-83), 5,153 ft³/s (3,733,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,500 ft³/s Jan. 24, 1968 (gage height, 33.60 ft); maximum gage height, 36.74 ft Apr. 28, 1966 (backwater from Navasota River); minimum discharge, 170 ft³/s Oct. 22, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1856, 62.0 ft Dec. 6, 1913, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 30.23 ft Jan. 12 at 1400 hours; minimum, 3.10 ft Dec. 22.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.51	5.97	3.56	4.52	9.98	9.79	6.27	8.43	8.56	6.40	3.92	6.16
2	3.57	4.93	4.09	5.12	9.74	10.15	6.15	7.94	8.00	6.15	3.79	6.74
3	3.71	4.30	3.79	7.18	9.39	10.30	6.22	8.62	7.42	5.89	3.77	6.90
4	4.14	3.88	4.33	8.07	11.10	9.92	6.82	10.58	7.43	5.64	3.62	6.19
5	4.14	3.52	4.38	8.57	16.72	8.77	10.74	16.09	7.26	5.51	4.20	6.79
6	4.36	3.32	4.04	8.27	18.22	7.67	10.55	16.10	8.80	5.66	4.16	6.54
7	4.97	3.29	3.67	7.29	16.41	7.22	12.54	13.10	10.02	5.68	3.95	6.39
8	5.34	3.95	3.88	7.23	14.84	7.10	10.59	11.85	11.32	5.51	3.83	5.98
9	5.10	4.24	4.56	11.70	13.24	6.95	8.13	12.91	15.29	5.45	3.93	6.41
10	4.76	7.46	4.15	23.28	11.66	6.85	7.92	16.70	16.57	6.37	4.02	6.37
11	4.61	8.81	3.91	29.20	12.68	6.67	7.97	14.56	16.93	6.10	3.96	5.82
12	5.75	7.51	3.74	29.48	12.86	6.67	7.30	13.81	17.03	5.12	4.10	5.45
13	5.22	6.08	3.48	22.69	12.37	6.45	6.78	13.72	16.79	5.02	4.32	5.41
14	4.97	6.32	3.33	21.37	11.68	6.21	14.88	13.84	16.92	4.61	4.23	5.32
15	5.11	5.63	3.60	23.01	11.07	6.05	21.17	13.84	17.23	4.24	4.72	6.04
16	5.13	4.79	3.66	22.42	10.26	6.13	19.59	17.95	16.89	4.42	11.45	5.30
17	4.98	4.32	3.41	20.92	9.44	6.39	17.05	17.34	16.91	4.21	10.63	5.12
18	4.80	4.04	3.27	23.85	8.69	6.27	16.65	15.03	16.25	3.90	9.59	4.70
19	4.71	3.96	3.18	25.57	8.94	6.29	17.95	14.27	15.12	4.08	8.90	4.38
20	4.48	3.94	3.16	24.53	13.10	6.20	17.20	13.18	14.10	4.55	7.67	4.18
21	4.74	4.27	3.11	20.48	12.23	6.08	15.42	12.60	13.75	4.70	7.21	4.68
22	4.67	4.52	3.14	17.30	10.47	5.94	14.62	12.11	13.28	4.75	7.91	7.15
23	4.12	4.48	3.27	14.92	9.46	5.79	13.54	11.34	11.20	4.82	6.38	5.57
24	5.78	4.58	3.67	15.10	9.21	5.70	12.96	10.77	10.34	4.09	7.04	4.72
25	5.93	4.84	3.62	14.48	9.33	5.65	12.35	10.49	9.82	3.69	8.22	7.90
26	5.08	5.02	3.96	13.98	9.06	5.78	11.12	12.30	9.04	3.62	6.88	7.63
27	4.19	4.64	4.03	12.74	8.86	5.75	10.46	13.74	8.64	4.33	6.28	7.37
28	4.01	4.36	3.85	12.06	8.95	5.93	10.03	12.64	8.00	4.98	6.06	7.38
29	3.99	4.00	3.88	11.72	---	6.46	9.12	11.76	7.66	4.96	6.04	7.36
30	3.72	3.74	3.96	11.18	---	6.06	8.81	10.39	6.91	4.68	6.19	6.88
31	4.11	---	3.97	10.44	---	6.27	---	9.22	---	4.54	6.57	---
MAX	5.93	8.81	4.56	29.48	18.22	10.30	21.17	17.95	17.23	6.40	11.45	7.90
MIN	3.51	3.29	3.11	4.52	8.69	5.65	6.15	7.94	6.91	3.62	3.62	4.18

CAL YR 1990 MAX 31.37 MIN 1.82
WTR YR 1991 MAX 29.48 MIN 3.11

08110325 NAVASOTA RIVER ABOVE GROESBECK, TX

LOCATION.--Lat 31°34'27", long 96°31'14", Limestone County, Hydrologic Unit 12070103, in city of Groesbeck at water supply pumping plant, 1.2 mi downstream from Springfield Lake, 3.7 mi north of Groesbeck, and 161.4 mi upstream from mouth.

DRAINAGE AREA.--239 mi^2.

PERIOD OF RECORD.--July 1975 to May 1978 (periodic gage-height and low-flow measurements only), June 1978 to current year.
Water-quality records.--Chemical analyses: November 1967 to June 1989.

GAGE.--Water-stage recorder, data collection platform (DCP), and concrete control. Datum of gage is 396.65 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow is partly regulated by Lake Mexia 7.4 mi upstream (capacity, 9,400 acre-ft) and by Springfield Lake 1.2 mi upstream (approximate capacity, 3,100 acre-ft). There are several diversions above station for irrigation, municipal supply, and oil field operation (total amount unknown). The city of Groesbeck diverts water from pool at gage for municipal use, and returns washwater and sewage effluent into river downstream from gage. Gage-height telemeter (DCP) at station.

AVERAGE DISCHARGE.--13 years, 105 ft^3/s (76,070 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,200 ft^3/s May 11, 1979 (gage height, 15.06 ft); no flow at times, most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1910, 26 ft in 1910 and 1944, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,380 ft^3/s Jan. 10 at 1800 hours (gage height, 8.42 ft); minimum daily discharge 0.01 ft 3/s Oct. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.38	.51	4.7	20	466	15	7.6	7.9	1.9	1.5	1.5
2	.12	.34	.66	9.5	17	854	11	6.4	7.4	1.7	1.8	1.2
3	.14	.34	.43	145	16	302	10	8.9	17	1.9	1.5	1.0
4	.18	.36	.30	679	679	80	9.3	175	14	1.8	1.5	.95
5	.15	.32	.26	329	4690	45	8.0	838	13	1.6	1.2	.76
6	.09	.31	.13	176	3030	34	7.3	343	11	1.6	.94	.62
7	.08	.33	.08	320	780	26	7.5	113	9.6	1.6	.90	.65
8	.17	4.8	.07	345	203	21	6.5	1150	7.8	1.6	.66	.71
9	1.5	5.5	.21	709	80	16	6.2	1590	6.1	1.7	.67	.73
10	.41	.71	.35	4800	46	12	4.8	538	7.9	1.6	1.0	.75
11	.27	.52	.39	3870	34	9.2	3.8	164	8.4	1.4	1.1	.59
12	.22	.45	.29	1060	28	11	3.8	72	6.6	1.2	1.3	.79
13	.07	.41	.42	293	24	12	506	44	5.5	1.3	1.2	.70
14	.07	.42	.45	113	21	9.0	2680	60	4.9	1.5	5.0	.64
15	.02	.48	.49	354	16	8.5	1390	763	6.1	1.3	124	.78
16	.01	.55	.57	750	11	14	303	777	6.0	1.2	217	.90
17	.04	.73	.69	381	11	19	95	223	5.1	1.5	72	1.3
18	.14	.84	1.0	234	16	19	62	78	4.0	1.5	38	.84
19	.18	.89	.53	446	753	15	509	45	3.6	1.0	25	1.0
20	.17	.77	.51	396	753	14	210	33	3.1	.63	17	.84
21	3.1	.64	4.1	182	259	12	66	26	2.4	.70	12	.68
22	.98	.83	1.0	95	411	14	43	20	2.3	.48	8.2	.97
23	.41	.95	.78	70	416	12	30	16	4.0	.17	6.5	1.3
24	.27	.85	1.0	59	204	9.8	22	14	3.6	.51	4.9	2.1
25	.28	.86	1.7	47	89	8.7	19	18	2.5	1.9	4.3	2.2
26	.31	.79	2.2	39	44	7.5	16	25	2.0	3.0	3.5	.84
27	.26	.73	2.9	33	33	9.8	13	27	2.1	1.9	2.5	.48
28	.29	.68	2.4	29	26	19	13	24	2.0	1.6	1.5	.61
29	.36	.56	2.9	28	---	35	12	17	2.2	1.7	.84	.59
30	.32	.54	11	29	---	26	8.6	13	2.2	1.2	1.6	.64
31	.34	---	5.4	22	---	20	---	9.2	---	1.2	2.1	---
TOTAL	11.06	26.88	43.72	16047.2	12710	2160.5	6090.8	7238.1	180.3	43.89	561.21	27.66
MEAN	.36	.90	1.41	518	454	69.7	203	233	6.01	1.42	18.1	.92
MAX	3.1	5.5	11	4800	4690	854	2680	1590	17	3.0	217	2.2
MIN	.01	.31	.07	4.7	11	7.5	3.8	6.4	2.0	.17	.66	.48
AC-FT	22	53	87	31830	25210	4290	12080	14360	358	87	1110	55

CAL YR 1990	TOTAL	63017.51	MEAN	173	MAX	7180	MIN	.00	AC-FT	125000
WTR YR 1991	TOTAL	45141.32	MEAN	124	MAX	4800	MIN	.01	AC-FT	89540

08110430 BIG CREEK NEAR FREESTONE, TX

LOCATION.--Lat 31°30'24", long 96°19'28", Limestone County, Hydrologic Unit 12070103, 12 ft to left and 25 ft downstream from left end of bridge on State Highway 164, 5.1 mi southwest of Freestone, and 8.2 mi upstream from mouth.

DRAINAGE AREA.--57.1 mi^2.

PERIOD OF RECORD.--July 1975 to June 1978 (periodic gage-height and low-flow measurements only), July 1978 to current year.

GAGE.--Water-stage recorder, and data collection platform (DCP). Datum of gage is 362.94 ft above National Geodetic Vertical Datum of 1929. Apr. 25, 1985, to Aug. 17, 1987, at site 62 ft downstream at the same datum.

REMARKS.--Records, good except those for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Satellite telemeter (DCP) at station.

AVERAGE DISCHARGE.--13 years, 42.3 ft^3/s (10.06 in/yr), 30,650 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,950 ft^3/s May 17, 1989 gage height, 15.37 ft (from rating curve extended above 2,200 ft^3/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1950, 19 ft in April 1957, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 9	0100	1,120	12.94	Mar. 2	1600	503	11.44
Jan. 10	1230	*4,950	*14.63	Mar. 29	0830	796	12.74
Feb. 5	0930	2,240	13.64	Apr. 14	1100	1,470	13.17
Feb. 19	2200	1,350	13.08	May 6	0330	589	12.00

Minimum daily discharge, no flow Oct. 1-8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.63	2.8	16	28	213	42	8.2	4.5	2.4	.94	2.6
2	.00	.35	2.4	34	23	404	28	6.9	4.6	2.2	.68	1.7
3	.00	.20	2.2	188	21	254	22	35	228	2.1	.52	2.4
4	.00	.20	2.1	221	450	72	18	259	116	1.8	.33	6.5
5	.00	.13	2.0	76	1990	44	16	505	32	2.1	.25	24
6	.00	.12	1.8	70	947	34	15	518	16	2.4	.17	41
7	.00	.40	1.8	197	422	26	17	147	34	2.1	.13	30
8	.00	202	1.8	122	155	22	19	129	88	1.8	.10	46
9	55	747	1.7	421	71	19	16	230	32	1.5	.09	18
10	84	366	1.7	3470	49	17	13	115	17	1.3	.17	7.8
11	11	49	1.7	1390	39	17	11	47	16	1.2	.18	4.2
12	3.9	16	1.8	501	33	17	9.9	30	11	1.3	.15	2.7
13	2.0	8.7	1.8	282	30	15	131	21	7.6	1.2	.13	1.8
14	1.3	5.3	1.7	185	28	14	1110	19	7.5	.90	12	1.6
15	.89	3.7	1.8	133	23	13	649	62	15	.87	169	1.3
16	.57	3.1	1.9	103	20	20	315	76	85	.68	127	1.1
17	.40	2.6	2.1	83	21	26	88	34	242	.53	22	.88
18	.40	2.5	3.2	70	181	22	70	21	100	1.1	9.4	.97
19	.29	2.0	4.9	62	738	18	71	25	29	1.0	5.2	2.2
20	.21	2.0	5.0	55	796	15	154	37	14	.69	3.2	1.8
21	72	2.2	81	50	328	16	50	40	9.1	.47	2.3	1.3
22	102	22	319	46	256	16	28	47	6.5	.57	1.7	.76
23	22	50	363	43	342	14	22	22	15	.45	1.6	72
24	5.6	14	76	50	139	12	18	15	17	.35	1.0	230
25	2.6	6.9	25	54	64	11	15	12	7.5	.58	.83	313
26	1.4	4.9	21	43	44	11	14	13	4.8	11	.66	135
27	.81	4.0	106	34	34	11	12	9.4	3.8	20	.48	28
28	.56	6.0	144	32	29	74	12	7.3	3.2	6.4	.38	13
29	.38	5.6	49	31	---	644	11	5.7	2.8	3.0	.29	7.1
30	.47	3.4	29	31	---	416	10	5.3	2.5	1.8	.71	4.6
31	.78	---	21	32	---	119	---	4.9	---	1.3	2.8	---
TOTAL	368.56	1530.93	1280.2	8125	7301	2626	3006.9	2506.7	1171.4	75.09	364.39	1003.31
MEAN	11.9	51.0	41.3	262	261	84.7	100	80.9	39.0	2.42	11.8	33.4
MAX	102	747	363	3470	1990	644	1110	518	242	20	169	313
MIN	.00	.12	1.7	16	20	11	9.9	4.9	2.5	.35	.09	.76
AC-FT	731	3040	2540	16120	14480	5210	5960	4970	2320	149	723	1990

CAL YR 1990 TOTAL 24370.99 MEAN 66.8 MAX 2380 MIN .00 AC-FT 48340
WTR YR 1991 TOTAL 29359.48 MEAN 80.4 MAX 3470 MIN .00 AC-FT 58230

08110470 LAKE LIMESTONE NEAR MARQUEZ, TX

LOCATION.--Lat 31°19'30", long 96°19'08", Leon County, Hydrologic Unit 12070103, in left end bypass pier of Sterling C. Robertson Dam on the Navasota River, 7.5 mi northwest of Marquez, and 124 mi upstream from mouth.

DRAINAGE AREA.--675 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1978 to current year.

GAGE.--Water-stage recorder and data collection platform (DCP). Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 11,395 ft long, including the spillway. The lake was built for water conservation. Deliberate impoundment began on Oct. 16, 1978. The spillway is an uncontrolled broad-crested weir 3,000 ft long located near left end of dam. The spillway for normal flood releases is a gated concrete gravity structure with an ogee weir section and stilling basin located near center of dam. It is controlled by five 40- by 28-foot tainter gates. There are two 4- by 8-foot slide gates located in each of the two center piers of the spillway that discharge into the stilling basin. These gates can also be opened during extreme floods. A low-flow outlet, consisting of a 10-inch-diameter cast iron pipe, is located in the left end of pier. In addition, there are two 36-inch (outside diameter) steel cylinder pipes located in the right end pier for water supply releases. The lowest invert for low flow and water supply releases is at elevation 325.50 ft. The city of Mexia releases various amounts of sewage effluent into stream above lake. Gage-height telemeter (DCP) at station. Figures given herein represent total contents. Data regarding dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	380.0	-
Design flood	370.0	334,735
Crest of spillway	369.6	327,760
Top of gates	365.0	253,905
Top of conservation pool	363.0	225,445
Concrete gated spillway	337.0	21,125
Lowest gated outlet (invert)	322.0	265

COOPERATION.--Records of daily lake elevations are obtained in cooperation with the Brazos River Authority. Area and capacity tables were furnished by the Brazos River Authority and are based on Geological Survey topographic maps.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 242,300 acre-ft May 17, 1989 (elevation, 364.19 ft); minimum, 10,740 acre-ft Nov. 30, 1978 (elevation, 332.63 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 236,900 acre-ft Jan. 10 at 1100 hours (elevation, 363.81 ft); minimum, 195,500 acre-ft Oct. 20 at 0900 hours (elevation, 360.69 ft).

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

360.0	187,000	362.0	212,200	364.0	239,600
361.0	199,400	363.0	225,600		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	196700	198500	215200	221300	224600	228200	224700	224900	225000	222700	217700	215300
2	196100	198500	215200	223400	224700	231700	224500	224500	226300	223700	216900	215000
3	196500	198300	215300	225000	225000	229000	225000	224900	227800	223700	216500	215800
4	196600	199500	214800	225000	230400	227100	225300	228700	227900	224200	216100	215900
5	196500	198200	214100	224600	234600	225800	225200	230700	227200	223800	215600	215900
6	196100	198000	215800	225200	230600	226300	225400	230400	226300	223200	215300	216200
7	196100	197800	214000	225200	226700	225400	225300	227100	225300	223100	214800	216300
8	197300	204900	213800	225600	224900	225000	225400	227900	224900	222700	214200	216500
9	198200	211200	213500	232400	224200	224700	225600	231300	224600	222400	214400	216300
10	197600	213300	213500	234600	224700	224200	225000	231500	224900	222000	214900	216200
11	197300	213600	213300	229000	225000	224100	225000	229600	224100	221700	214600	215900
12	197100	213700	213300	227100	224700	224800	225300	227800	223200	221300	214400	216100
13	196700	213700	213500	224500	225700	224600	231300	225600	223000	221200	213800	215900
14	196500	213600	213200	225600	225600	224500	235600	225200	223000	220900	216600	215700
15	196300	213500	213300	227900	225400	224700	232200	226800	223400	220700	217400	215400
16	196200	213800	213500	229600	225300	225200	228300	227800	224300	220400	218100	215400
17	197300	213600	213700	228900	225700	225600	226100	226700	226000	220100	218200	215200
18	196500	213700	213300	230300	230600	225400	224100	225800	226300	219600	218200	215600
19	195800	213800	213200	230700	233500	225000	224100	225400	226100	219000	218100	214500
20	195800	213600	213300	228500	230400	225400	223500	224900	225700	218600	217700	213800
21	200100	214000	216500	225200	228200	225400	223400	224500	225600	218500	217400	213300
22	200000	215400	218500	224600	228100	225800	224100	224300	225600	218100	217300	213200
23	200100	215600	219200	225600	226800	225800	224100	224300	226000	217700	217000	216000
24	200000	215400	218300	226000	224900	225800	224200	224500	225700	217700	216900	217400
25	199900	215200	218300	225800	224100	225600	224100	225300	225400	217900	216500	217500
26	199500	215200	219700	225300	224200	225200	223700	225800	225200	218600	216200	217800
27	199500	216900	220200	225600	224100	226300	224500	225700	224700	218600	215800	217500
28	199300	216100	220800	225400	225600	227800	225200	225700	224500	218500	215400	217400
29	199300	215400	221900	226700	---	229300	225000	225400	224500	218900	215200	217100
30	199000	214900	222400	225700	---	227600	224600	225000	224100	218600	215800	217300
31	199000	---	221300	225000	---	225700	---	225000	---	218100	215700	---
MAX	200100	216900	222400	234600	234600	231700	235600	231500	227900	224200	218200	217800
MIN	195800	197800	213200	221300	224100	224100	223400	224300	223000	217700	213800	213200
(†)	360.97	362.21	362.69	362.96	363.00	363.01	362.93	362.96	362.89	362.45	362.27	362.39
(ϕ)	+1900	+15900	+6400	+3700	+600	+100	-1100	+400	-900	-6000	-2400	+1600

CAL YR 1990 MAX 245400 MIN 189200 (ϕ) +31300
WTR YR 1991 MAX 235600 MIN 195800 (ϕ) +20200

(†) Elevation, in feet, at end of month.
(ϕ) Change in contents, in acre-feet.

08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1980 to current year.

311937096194601 - LAKE LIMESTONE SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
DEC							
05...	1100	1.00	214	7.9	15.0	8.4	83
05...	1102	10.0	214	7.9	15.0	8.4	83
05...	1104	20.0	214	7.8	15.0	8.4	83
05...	1106	30.0	214	7.8	15.0	8.5	84
05...	1108	38.0	214	7.7	14.5	8.5	83
APR							
30...	1045	1.00	196	7.5	22.5	6.7	78
30...	1047	10.0	196	7.5	22.5	6.5	76
30...	1049	20.0	196	7.5	22.0	6.5	75
30...	1051	31.0	200	7.5	21.0	3.6	41
JUL							
24...	0850	1.00	228	7.3	29.0	4.8	63
24...	0852	10.0	228	7.1	28.5	3.4	44
24...	0854	20.0	228	7.0	28.5	3.1	40
24...	0856	30.0	236	6.8	26.0	0	0
24...	0858	37.0	256	6.9	24.0	0	0

311941096191401 - LAKE LIMESTONE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	RESERVOIR STORAGE (AC-FT)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
DEC											
05...	1115	214000	1.00	213	7.8	15.0	0.60	8.2	81	73	15
05...	1117	--	10.0	213	7.7	15.0	--	8.2	81	--	--
05...	1119	--	20.0	213	7.7	15.0	--	8.2	81	--	--
05...	1121	--	30.0	213	7.7	15.0	--	8.2	81	--	--
05...	1123	--	44.0	213	7.7	15.0	--	8.1	80	70	12
APR											
30...	1105	225000	1.00	197	7.5	22.5	0.40	6.7	78	56	12
30...	1107	--	10.0	197	7.4	22.5	--	6.5	76	--	--
30...	1109	--	20.0	197	7.3	22.0	--	5.9	68	--	--
30...	1111	--	30.0	201	7.0	21.0	--	3.4	39	--	--
30...	1113	--	40.0	204	7.0	20.5	--	1.7	19	--	--
30...	1115	--	45.0	204	7.0	20.5	--	1.3	15	65	17
JUL											
24...	0915	218000	1.00	228	7.2	28.5	1.40	3.8	50	73	17
24...	0917	--	10.0	228	7.2	28.5	--	3.4	44	--	--
24...	0919	--	20.0	228	7.1	28.0	--	3.0	39	--	--
24...	0921	--	25.0	228	6.9	28.0	--	1.1	14	--	--
24...	0923	--	30.0	236	6.8	26.5	--	0	0	--	--
24...	0925	--	43.0	252	7.0	23.0	--	0	0	83	0

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
DEC											
05...	23	3.8	13	0.7	4.6	58	18	21	<0.10	6.3	124
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	22	3.7	13	0.7	4.4	58	18	20	<0.10	6.3	122
APR											
30...	17	3.3	11	0.6	4.0	44	16	18	0.10	6.6	103
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	20	3.6	10	0.5	4.1	48	16	18	0.10	8.0	109
JUL											
24...	22	4.3	14	0.7	4.1	56	19	23	0.20	4.7	125
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	25	4.9	14	0.7	4.0	85	11	19	0.10	15	154

08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

311941096191401 - LAKE LIMESTONE SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
DEC										
05...	--	0.020	<0.066	0.020	0.48	0.50	0.040	0.020	15	2
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	0.030	<0.080	0.040	0.66	0.70	0.050	0.030	9	21
APR										
30...	0.460	0.020	0.480	0.030	0.67	0.70	0.080	0.030	120	3
30...	--	--	--	--	--	--	--	--	--	--
30...	0.470	0.020	0.490	0.030	0.67	0.70	0.080	0.040	110	<10
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	0.440	0.090	0.530	0.130	0.67	0.80	0.130	0.090	180	310
JUL										
24...	--	<0.010	<0.050	0.040	0.56	0.60	0.040	<0.010	9	4
24...	--	--	--	--	--	--	--	--	--	--
24...	--	<0.010	<0.050	0.030	0.37	0.40	0.030	<0.010	150	170
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	0.030	<0.050	1.30	0.90	2.2	0.600	0.510	6100	3800

312458096205101 - LAKE LIMESTONE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)
DEC											
05...	1145	1.00	215	8.0	14.5	0.70	9.0	88	68	10	21
05...	1147	10.0	215	8.0	14.5	--	8.9	87	--	--	--
05...	1149	20.0	215	8.0	14.5	--	8.8	86	--	--	--
05...	1151	27.0	215	7.9	14.5	--	8.5	83	71	13	22
APR											
30...	1225	1.00	208	7.9	23.0	0.40	7.7	91	64	19	19
30...	1227	10.0	204	7.4	22.0	--	6.2	72	--	--	--
30...	1229	15.0	208	7.2	22.0	--	5.4	62	--	--	--
30...	1231	20.0	206	7.0	21.0	--	3.0	34	--	--	--
30...	1233	28.0	209	7.0	21.0	--	2.4	27	63	17	19
JUL											
24...	1000	1.00	240	7.8	30.0	0.60	5.5	74	73	14	22
24...	1002	10.0	240	7.7	29.5	--	5.2	69	--	--	--
24...	1004	20.0	240	7.6	29.5	--	5.2	69	--	--	--
24...	1006	27.0	240	7.4	29.5	--	1.0	13	73	16	22

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
DEC										
05...	3.7	12	0.6	4.6	58	15	18	<0.10	6.1	115
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	3.8	12	0.6	5.2	58	17	21	<0.10	6.2	122
APR										
30...	4.0	12	0.7	4.0	45	17	20	0.20	5.5	109
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	3.7	12	0.7	4.1	46	17	19	0.10	7.3	110
JUL										
24...	4.4	15	0.8	4.2	59	18	22	0.10	4.8	126
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	4.5	15	0.8	4.1	57	19	20	<0.10	5.1	124

08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

312458096205101 - LAKE LIMESTONE SITE BC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
DEC										
05...	--	0.020	<0.050	0.020	0.78	0.80	0.040	0.010	13	2
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	0.030	<0.050	0.030	1.2	1.2	0.050	0.020	80	25
APR										
30...	0.300	0.020	0.320	0.020	0.78	0.80	0.090	0.020	27	2
30...	0.400	0.020	0.420	0.030	0.67	0.70	0.080	0.040	40	20
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	0.350	0.070	0.420	0.240	0.86	1.1	0.190	0.090	45	70
JUL										
24...	--	<0.010	<0.050	0.030	0.67	0.70	0.050	0.020	5	19
24...	--	--	--	--	--	--	--	--	--	--
24...	--	<0.010	<0.050	0.020	0.48	0.50	0.050	<0.010	30	80
24...	--	0.020	<0.050	0.100	1.0	1.1	0.080	0.030	9	260

312625096205901 - LAKE LIMESTONE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
DEC							
05...	1206	1.00	213	8.1	13.5	9.2	88
05...	1208	10.0	213	8.1	13.5	9.2	88
05...	1210	18.0	213	8.1	13.5	9.1	87
APR							
30...	1250	1.00	207	7.8	23.5	7.3	87
30...	1252	10.0	206	7.4	22.5	5.5	64
30...	1254	17.0	209	7.5	22.5	5.8	68
JUL							
24...	1030	1.00	241	8.1	30.0	6.0	80
24...	1032	10.0	241	8.0	30.0	5.7	76
24...	1034	17.0	241	7.7	29.5	5.0	66

312622096224201 - LAKE LIMESTONE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
DEC							
05...	1220	1.00	220	8.1	13.5	9.1	87
05...	1222	10.0	220	8.1	13.5	9.0	86
05...	1224	21.0	220	8.1	13.5	8.9	85
APR							
30...	1310	1.00	224	8.4	24.0	8.5	102
30...	1312	10.0	229	7.8	22.5	6.7	78
30...	1314	20.0	231	7.7	22.5	6.4	75
JUL							
24...	1050	1.00	260	8.1	30.0	6.0	80
24...	1052	10.0	266	7.6	30.0	4.8	64
24...	1054	20.0	278	7.3	29.5	2.9	39

08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

312726096240001 - LAKE LIMESTONE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)
DEC											
05...	1230	1.00	223	8.1	12.5	0.30	9.4	88	70	10	22
05...	1232	14.0	223	8.0	12.0	--	9.1	84	70	11	22
APR											
30...	1325	1.00	231	8.9	24.5	0.30	10.8	131	79	13	26
30...	1327	5.00	232	8.7	24.0	--	9.4	113	--	--	--
30...	1329	10.0	236	7.6	23.0	--	4.4	52	--	--	--
30...	1331	13.0	241	7.4	23.0	--	2.9	34	83	13	27
JUL											
24...	1115	1.00	289	7.9	30.0	0.50	5.8	78	90	18	28
24...	1117	13.0	288	7.5	30.0	--	4.1	55	87	15	27

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
DEC										
05...	3.6	13	0.7	4.6	60	15	21	<0.10	6.2	121
05...	3.6	14	0.7	4.5	59	18	24	<0.10	6.3	128
APR										
30...	3.3	13	0.6	4.1	66	16	18	0.20	4.4	125
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	3.7	13	0.6	4.2	70	18	18	0.10	5.6	132
JUL										
24...	4.8	20	0.9	4.4	72	21	27	<0.10	6.4	155
24...	4.8	19	0.9	4.5	72	19	29	0.20	6.4	153

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
DEC										
05...	--	0.030	<0.050	0.030	1.1	1.1	0.070	0.040	15	1
05...	--	0.040	<0.050	0.030	0.97	1.0	0.090	0.050	17	9
APR										
30...	--	0.040	<0.050	0.020	1.3	1.3	0.130	0.020	19	7
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	0.008	0.080	0.088	0.110	0.99	1.1	0.180	0.070	39	160
JUL										
24...	--	0.010	<0.050	0.060	0.74	0.80	0.090	0.020	<3	4
24...	--	0.030	<0.050	0.090	1.0	1.1	0.120	0.030	4	44

08110500 NAVASOTA RIVER NEAR EASTERLY, TX

LOCATION.--Lat 31°10'12", long 96°17'51", Leon-Robertson County line, Hydrologic Unit 12070103, at left downstream end of bridge on U.S. Highway 79, 1.0 mi upstream from Missouri Pacific Railroad Co. bridge, 7 mi northeast of Easterly, and 105.7 mi upstream from mouth.

DRAINAGE AREA.--968 mi².

PERIOD OF RECORD.--March 1924 to current year.
Water-quality records.--Chemical analyses: December 1941 to September 1947, February 1966 to August 1985. Sediment records: October 1968 to September 1973.

REVISED RECORDS.--WSP 898: 1924, 1926-27, 1928(M), 1929-30, 1931(M). WSP 1512: 1932(M), 1936. WDR TX-76-2: Drainage area. WDR TX-78-2: 1974(M), 1977.

GAGE.--Water-stage recorder, and data collection platform (DCP). Datum of gage is 271.46 ft above National Geodetic Vertical Datum of 1929. Prior to June 11, 1932, nonrecording gage at railroad bridge 1.0 mi downstream at 19.86-foot higher datum. June 11, 1932, to Sept. 30, 1978, water-stage recorder 46 ft upstream at 5.00-foot higher datum.

REMARKS.--No estimated daily discharges. Records good. Flow is largely regulated by Lake Mexia (capacity, 9,400 acre-ft) and Lake Limestone (station 08110470). There are numerous diversions above station for irrigation, municipal supply, and oil field operation. Several observations of water temperature were made during the year. Satellite telemeter (DCP) at station.

AVERAGE DISCHARGE.--36 years (water years 1925-60) unregulated, 406 ft³/s(5.70in/yr), 294,100 acre-ft/yr; 31 years (water years 1961-91) regulated, 431 ft³/s (6.05 in/yr), 312,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,300 ft³/s May 2, 1944 (gage height, 27.13 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1845, 29 ft in June 1899, from information by local residents (discharge, 90,000 ft³/s), from rating curve extended above 60,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,800 ft³/s Jan. 11 at 0700 hours (gage height, 23.78 ft); minimum daily, 8.5 ft³/s July 24,25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	9.2	18	39	313	997	1230	167	64	15	65	9.3
2	11	9.1	18	51	104	1960	277	60	39	16	65	10
3	11	9.0	17	167	59	2210	64	52	36	15	66	10
4	11	12	21	291	456	1860	51	1080	217	18	66	13
5	11	12	17	810	2940	1420	48	2650	548	18	66	41
6	11	11	16	996	11100	631	48	3000	415	35	65	23
7	11	10	15	697	7830	322	48	2910	310	28	63	21
8	10	32	17	411	4740	302	51	2760	314	20	63	19
9	17	428	15	764	2700	159	48	2030	301	16	63	19
10	17	701	15	5690	844	61	46	1820	304	17	64	19
11	14	722	15	21200	104	49	54	1790	333	16	65	17
12	17	242	15	9380	78	46	51	1640	322	13	64	14
13	13	51	11	4870	72	43	46	1630	176	11	64	12
14	12	31	9.6	3550	67	41	1310	1570	51	10	71	12
15	11	23	9.6	2560	61	39	7810	1170	37	9.9	96	11
16	11	20	9.3	2410	57	44	8490	1170	53	9.7	106	10
17	11	17	9.6	2210	57	55	4900	1090	76	9.4	78	11
18	11	16	13	2110	64	53	3170	1000	87	9.2	72	10
19	12	15	13	2540	906	49	2800	759	51	9.1	68	10
20	12	14	12	2890	2290	44	2570	534	36	8.9	45	11
21	21	14	12	3310	3960	42	1050	359	29	8.7	15	9.8
22	118	39	16	2840	3760	40	121	324	26	9.4	12	9.4
23	120	83	105	849	2700	36	75	109	23	9.0	11	9.9
24	65	62	80	162	2280	34	63	59	25	8.5	11	41
25	34	38	37	431	1900	32	57	166	27	8.5	10	29
26	22	27	37	450	824	31	53	341	25	11	9.7	26
27	16	23	160	367	98	31	51	251	22	12	9.2	13
28	13	22	148	125	75	32	194	80	19	11	8.7	10
29	11	20	87	75	---	432	735	68	17	18	8.8	9.3
30	10	18	62	74	---	1150	498	77	16	23	11	9.1
31	9.4	---	53	275	---	1630	---	103	---	45	9.6	---
TOTAL	684.4	2730.3	1083.1	72594	50439	13875	36009	30819	3999	468.3	1491.0	468.8
MEAN	22.1	91.0	34.9	2342	1801	448	1200	994	133	15.1	48.1	15.6
MAX	120	722	160	21200	11100	2210	8490	3000	548	45	106	41
MIN	9.4	9.0	9.3	39	57	31	46	52	16	8.5	8.7	9.1
AC-FT	1360	5420	2150	144000	100000	27520	71420	61130	7930	929	2960	930

CAL YR 1990 TOTAL 170060.7 MEAN 466 MAX 22600 MIN 9.0 AC-FT 337300
WTR YR 1991 TOTAL 214660.9 MEAN 588 MAX 21200 MIN 8.5 AC-FT 425800

08111000 NAVASOTA RIVER NEAR BRYAN, TX

LOCATION.--Lat 30°52'10", long 96°11'32", Brazos-Madison County line, Hydrologic Unit 12070103, on right bank at upstream side of bridge on U.S. Highway 190, 2.5 mi upstream from Shepard Creek, 17 mi northeast of Bryan, and 68.4 mi upstream from mouth.

DRAINAGE AREA.--1,454 mi².

PERIOD OF RECORD.--January 1951 to current year.
Water-quality records.--Chemical and biochemical analyses: October 1958 to September 1981. Sediment records: October 1973 to September 1981.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 224.64 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow is largely regulated by Lake Limestone (station 08110470). There are numerous diversions above the station for irrigation, municipal, and oil field operations. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years (water years 1952-60) unregulated, 437 ft³/s (316,600 acre-ft/yr); 31 years (water years 1961-91) regulated, 578 ft³/s (418,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,200 ft³/s Apr. 29, 1966 (gage height, 16.57 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1840, 19.5 ft in June 1899, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,200 ft³/s Jan. 12 at 2300 hours, (gage height, 15.54 ft); minimum daily, no flow Oct. 1-4, 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.57	4.8	40	204	1080	749	685	206	9.0	1.9	.67
2	.00	.43	4.3	36	324	847	1130	602	153	8.1	8.3	.85
3	.00	.33	4.0	242	278	1240	1210	230	78	8.5	18	2.5
4	.00	1.1	3.7	211	429	1930	462	198	50	10	21	3.0
5	.01	2.3	3.8	285	2090	2430	105	286	125	8.5	20	2.9
6	.09	1.9	3.4	385	1990	2540	60	722	330	6.2	20	4.3
7	.01	2.5	3.3	656	3900	2300	60	1290	426	7.2	20	13
8	.00	6.4	2.5	853	12100	1500	63	2040	336	9.1	20	14
9	.64	117	2.5	1950	9100	638	56	2830	258	11	19	13
10	1.2	191	2.3	6910	6670	329	47	3400	251	8.3	19	10
11	4.0	418	2.4	4530	5100	144	35	3230	233	6.3	21	7.6
12	3.9	572	2.5	13000	3420	71	29	2700	250	3.9	21	5.2
13	2.8	564	3.0	17300	1700	53	30	2430	256	2.8	23	3.4
14	2.1	211	3.6	10100	432	46	272	2320	217	1.7	24	2.5
15	1.7	44	4.0	8070	163	42	722	2220	103	1.1	32	3.4
16	1.1	17	3.0	6320	96	43	1030	2090	48	.71	69	2.0
17	.83	10	2.3	5320	76	60	3290	1870	68	.52	92	1.4
18	.43	7.8	2.6	5380	74	100	9160	1590	89	.46	70	1.3
19	.26	5.7	3.1	5560	82	100	7060	1370	96	.41	40	2.1
20	.68	4.4	4.5	4380	208	74	5640	1140	66	.30	29	5.5
21	1.4	3.9	6.4	3910	735	56	4560	864	35	.22	23	10
22	2.6	3.9	6.7	4010	1540	48	3870	531	25	.18	15	8.1
23	14	4.0	6.0	4310	2690	44	2870	334	32	.19	5.9	3.6
24	71	15	6.9	4510	4530	40	1310	221	23	.18	1.2	2.5
25	59	53	43	3690	4360	36	325	93	29	.24	.53	2.5
26	25	35	40	2270	3530	32	138	100	22	.38	.47	19
27	9.4	19	26	1370	2880	30	80	361	16	.44	.49	25
28	2.5	12	67	899	2100	30	64	654	13	4.3	.39	18
29	1.4	8.3	168	532	---	31	71	696	12	7.8	29	10
30	1.1	6.1	145	222	---	78	391	357	11	2.7	.53	4.7
31	.78	---	74	172	---	377	---	256	---	1.0	.89	---
TOTAL	207.93	2337.63	654.6	117423	70801	16369	44889	37710	3857	121.73	636.89	202.02
MEAN	6.71	77.9	21.1	3788	2529	528	1496	1216	129	3.93	20.5	6.73
MAX	71	572	168	17300	12100	2540	9160	3400	426	11	92	25
MIN	.00	.33	2.3	36	74	30	29	93	11	.18	.29	.67
AC-FT	412	4640	1300	232900	140400	32470	89040	74800	7650	241	1260	401

CAL YR 1990 TOTAL 158097.16 MEAN 433 MAX 15500 MIN .00 AC-FT 313600
WTR YR 1991 TOTAL 295209.80 MEAN 809 MAX 17300 MIN .00 AC-FT 585500

08111500 BRAZOS RIVER NEAR HEMPSTEAD, TX

LOCATION.--Lat 30°07'44", long 96°11'15", Washington-Waller County line, Hydrologic Unit 12070101, at downstream side of bridge on U.S. Highway 290, 6,000 ft upstream from Texas and New Orleans Railroad Co. bridge, 6.5 mi northwest of Hempstead, 10.5 mi upstream from Caney Creek, and at mile 193.8.

DRAINAGE AREA.--43,880 mi², approximately, of which 9,566 mi² probably is non-contributing.

PERIOD OF RECORD.--October 1938 to current year. Gage-height records collected in this vicinity at intermitten periods since 1903 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1512: 1941. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 107.90 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1940, nonrecording gage at railroad bridge 6,000 ft downstream at datum 4.20 ft higher. Nov. 1, 1940, to Sept. 30, 1963, nonrecording gage at site 1,500 ft downstream at datum 10.00 ft higher. Oct. 1, 1964, to July 31, 1974, water-stage recorder 1,500 ft downstream at datum 10.00 ft higher. Aug. 1, 1974, to Dec. 31, 1988, water-stage recorder at present site at datum 10.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. There are many diversions above station for irrigation, municipal and industrial uses, and oil field operations. At times, flow is affected by reservoirs on the Brazos River above Waco (station 08096500) and by reservoirs on the Lampasas and Little Rivers above Cameron. For statement regarding regulation by Soil Conversation Service floodwater-retarding structures, see station 081102000. Gage-height telemeter at station.

AVERAGE DISCHARGE.--53 years, 6,503 ft³/s (4,711,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 143,000 ft³/s May 2, 1957 (gage height, 54.21 ft); at site 1,500 ft downstream at present datum; minimum daily, 137 ft³/s Nov. 6, 1952.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1899, 66.1 ft Dec. 8, 1913, at site 1,500 ft downstream at present datum, from information by Texas and New Orleans Railroad Co., obtained at bridge 6,000 ft downstream. Flood of July 4, 1899, reached a stage of 63.6 ft, at site 1,500 ft downstream at present datum, from information by Texas and New Orleans Railroad Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 52,800 ft³/s Jan. 12 at 2400 hours (gage height, 38.09 ft); minimum daily, 743 ft³/s Dec. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	967	1280	1160	1380	8570	6760	3340	6210	6110	3770	1650	3570
2	985	2100	1030	1800	7530	7930	3420	5640	5410	3290	1430	3470
3	1020	2030	1090	3400	6870	8570	3400	6170	4950	2980	1210	4480
4	1080	1580	1160	4000	7520	8710	3580	7380	4460	2830	1260	5350
5	1270	1280	1200	4510	13700	8070	4890	13100	4320	2580	1110	3970
6	1370	1070	1440	5120	20500	6550	11300	19200	4300	2470	1300	3890
7	1430	939	1300	5000	22100	5370	11000	17000	5240	2450	1420	3810
8	1730	899	1110	4340	18900	4890	12400	12600	7110	2500	1380	3610
9	1980	1200	1030	4160	16000	4750	9240	11300	9660	2390	1300	3390
10	1980	1420	1460	16900	13100	4690	5920	14200	16300	2340	1260	3650
11	1830	3160	1380	37400	11300	4680	5080	18300	19100	2660	1280	3610
12	1750	5030	1230	49400	13200	4590	4860	15000	19400	2890	1280	3170
13	2070	4280	1130	49400	13700	4440	4380	13800	19100	2260	1300	2730
14	2120	3060	995	35000	12800	4110	7510	13700	18900	2040	1450	2600
15	1910	2790	892	42300	11500	3750	23900	14200	19200	1860	1520	2530
16	1940	2670	911	38200	10300	3840	28800	15500	19600	1630	2140	2870
17	2030	2170	1050	34300	8890	4160	24700	21500	19600	1570	7040	2630
18	1970	1830	975	36100	7290	3930	20400	19300	19100	1590	7220	2430
19	1820	1480	864	44400	8040	3700	19900	16100	17500	1400	5960	2110
20	1770	1260	806	42600	8050	3570	21700	14700	15500	1360	5280	1840
21	1660	1170	767	38100	11800	3520	19800	12800	13800	1610	4430	1690
22	1670	1250	743	28900	11000	3390	17500	11600	13200	1710	4070	1940
23	1730	1460	e757	22000	8420	3250	16200	10700	11800	1770	4300	3540
24	1730	1460	e775	18200	6770	3100	14600	9440	8970	1800	3640	3070
25	2010	1510	e898	17800	6290	2970	13500	8480	7780	1550	3760	2340
26	2390	1630	e1100	16600	6410	2920	12200	7860	6950	1260	4650	3610
27	2100	1770	1450	15400	6290	2940	10400	10500	5760	1140	3840	4450
28	1630	1690	1440	13400	6270	2970	9160	12800	5200	1400	3400	4120
29	1370	1530	1460	12000	---	3090	8620	11100	4630	1780	3150	4120
30	1360	1340	1370	11100	---	3390	7150	9780	4250	1850	3050	4110
31	1160	---	1370	9920	---	3370	---	7680	---	1780	3260	---
TOTAL	51832	56338	34343	663130	303110	141970	358850	387640	337200	64510	89340	98700
MEAN	1672	1878	1108	21390	10830	4580	11960	12500	11240	2081	2882	3290
MAX	2390	5030	1460	49400	22100	8710	28800	21500	19600	3770	7220	5350
MIN	967	899	743	1380	6270	2920	3340	5640	4250	1140	1110	1690
AC-FT	102800	111700	68120	1315000	601200	281600	711800	768900	668800	128000	177200	195800

CAL YR 1990 TOTAL 2953772 MEAN 8093 MAX 58700 MIN 533 AC-FT 5859000
WTR YR 1991 TOTAL 2586963 MEAN 7088 MAX 49400 MIN 743 AC-FT 5131000

e Estimated

08111700 MILL CREEK NEAR BELLVILLE, TX

LOCATION.--Lat 29°52'51", long 96°12'18", Austin County, Hydrologic Unit 12070104, on left bank at upstream side of abandoned bridge pier, about 5 ft downstream from State Highway 36, 5.0 mi southeast of Bellville, 6.0 mi upstream from Brazos River, and 9.0 mi upstream from mouth.

DRAINAGE AREA.--376 mi².

PERIOD OF RECORD.--July 1963 to current year.
Water-quality records.--Chemical analyses: October 1968 to September 1985. Sediment records: October 1966 to September 1985.

REVISED RECORDS.--WSP 2122: 1965(P). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 122.82 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. During the year, the city of Bellville discharged about 490 acre-ft of sewage effluent into a tributary of Mill Creek above gage. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--28 years, 223 ft³/s (8.06 in/yr), 161,600/acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,400 ft³/s June 13, 1973 (gage height, 17.95 ft); minimum daily, 0.08 ft³/s July 22, 23, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1899, 22.8 ft in 1940, from information by local residents and the Texas Department of Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan 15	1300	6,090	13.50	Apr 7	0300	6,810	13.66
Jan 19	1800	7,870	13.86	Apr 15	1500	*11,500	*14.41

Minimum daily discharge, 1.4 ft³/s (estimated) Oct. 8, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.8	1.3	6.2	16	56	70	35	69	32	23	6.1	34
2	e1.7	1.6	6.7	23	53	73	34	66	27	22	5.9	24
3	e1.7	2.0	7.3	500	51	64	34	331	26	26	5.7	34
4	e1.6	5.3	6.7	498	434	55	34	1350	26	44	5.4	303
5	e1.6	7.3	6.9	143	1930	50	891	931	48	117	5.2	294
6	e1.5	5.5	7.0	58	1260	48	4760	791	41	40	5.0	116
7	e1.5	5.1	7.5	38	206	46	5890	455	66	26	4.6	89
8	e1.4	8.3	7.4	29	122	44	4640	141	117	21	3.8	51
9	e1.8	51	7.6	33	97	41	1580	354	193	23	4.3	36
10	e1.7	56	7.7	711	82	39	207	864	124	19	4.4	44
11	e1.7	26	8.1	1610	74	39	129	205	165	18	9.8	26
12	e1.6	17	8.8	345	68	40	106	112	84	14	9.8	20
13	e1.6	11	9.2	e92	65	39	93	85	52	13	9.5	199
14	e1.5	8.6	9.1	106	62	38	3710	76	40	12	6.6	65
15	e1.5	7.6	8.8	3960	56	39	10500	74	447	10	15	35
16	e1.4	7.2	9.7	4290	50	117	5510	71	573	9.3	24	27
17	5.6	7.6	9.8	922	54	395	820	152	1460	14	89	20
18	42	7.9	10	1460	58	531	3470	113	487	12	31	23
19	30	7.8	9.3	6540	261	136	3690	93	122	9.3	16	24
20	10	8.2	9.2	3720	265	86	820	91	71	8.0	8.9	16
21	6.0	8.3	9.6	295	120	71	218	124	51	7.2	7.4	15
22	7.4	9.0	9.1	129	98	63	158	82	43	7.6	5.0	14
23	6.0	8.3	8.7	104	80	57	131	64	44	17	5.2	12
24	3.9	7.3	8.2	98	69	50	114	56	36	20	5.0	16
25	2.9	7.2	8.5	95	65	46	104	49	34	14	4.9	84
26	2.4	7.4	13	94	66	45	98	44	34	13	4.2	301
27	2.2	6.9	135	79	61	43	93	39	30	11	4.0	109
28	2.1	7.7	73	72	58	42	88	36	27	9.8	4.0	41
29	2.0	6.7	41	67	---	45	87	34	26	9.3	4.0	26
30	1.8	6.3	25	61	---	44	77	37	24	8.4	4.0	20
31	1.6	---	19	58	---	39	---	36	---	7.4	25	---
TOTAL	151.5	327.4	513.1	26246	5921	2535	48121	7025	4550	605.3	342.7	2118
MEAN	4.89	10.9	16.6	847	211	81.8	1604	227	152	19.5	11.1	70.6
MAX	42	56	135	6540	1930	531	10500	1350	1460	117	89	303
MIN	1.4	1.3	6.2	16	50	38	34	34	24	7.2	3.8	12
AC-FT	301	649	1020	52060	11740	5030	95450	13930	9020	1200	680	4200
CFSM	.01	.03	.04	2.25	.56	.22	4.27	.60	.40	.05	.03	.19
IN.	.01	.03	.05	2.60	.59	.25	4.76	.70	.45	.06	.03	.21

CAL YR 1990	TOTAL	9734.0	MEAN	26.7	MAX	958	MIN	1.0	AC-FT	19310	CFSM	.07	IN. .96
WTR YR 1991	TOTAL	98456.0	MEAN	270	MAX	10500	MIN	1.3	AC-FT	195300	CFSM	.72	IN. 9.74

e Estimated

08114000 BRAZOS RIVER AT RICHMOND, TX

LOCATION.--Lat 29°34'56", long 95°45'27", Fort Bend County, Hydrologic Unit 12070104, on right bank at downstream side of upstream bridge on U.S. Highway 90 in Richmond, 850 ft downstream from Texas and New Orleans Railroad Co. bridge, and at mile 92.0.

DRAINAGE AREA.--45,007 mi², approximately, of which 9,566 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1903 to June 1906, October 1922 to current year. Published as "at Rosenberg" October 1922 to September 1931 and equivalent except for diversion by Richmond Irrigation Co.'s canal. June to November 1901 and June to September 1902 in U.S. Department of Agriculture, Office of Experiment Stations, Bulletin Nos. 119 and 133. Gage-height records collected in this vicinity since 1914 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1392: 1933. WSP 1632: 1958. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 27.94 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1922, various types of nonrecording gages at railroad bridge 925 ft upstream at different datums. Oct. 1, 1922, to Sept. 30, 1931, nonrecording chain gage at Rosenberg 7.6 mi upstream at datum about 17 ft higher; Oct. 1, 1931, to Sept. 30, 1975, water-stage recorder at present site at datum 13.00 ft higher; Oct. 1, 1975 to Dec. 31, 1988, water stage recorder at present site and at datum 10.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Considerable water is diverted above station for irrigation and municipal supply. For statement regarding regulation by upstream reservoirs and by Soil Conservation Service Floodwater-retarding structures, see station 08110200. Gage-height telemeter at station.

AVERAGE DISCHARGE.--20 years (water years 1904-05, 1923-40) unregulated, 7,209 ft³/s (5,223,000 acre-ft/yr); 51 years (water years 1941-91) regulated, 7,184 ft³/s (5,205,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 123,000 ft³/s June 6, 1929 (gage height, 53.6 ft, from floodmarks), present site and datum; minimum daily, 35 ft³/s Aug. 23, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 61.2 ft Dec. 10, 1913, present datum, from floodmarks on right bank 1,000 ft upstream from gage. From information by Texas and New Orleans Railroad Co., stages of other floods at railroad bridge, present datum, are as follows: May 1884, 56.7 ft; June 13, 1885, 57.7 ft; July 1899, 58.6 ft; May 2, 1915, 56.3 ft; and May 9, 1922, 53.9 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 51,400 ft³/s Jan 20 at 1430 hours (gage height, 37.53 ft); minimum daily, 846 ft³/s Dec. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1200	1200	1610	1510	11600	7580	3220	9170	9420	5320	1920	3290
2	994	1140	1500	1550	10300	7710	3140	8020	7760	4940	1830	3660
3	876	1190	1330	1960	9330	8490	3040	7310	6630	4480	1680	3860
4	882	1770	1140	4070	9740	9310	3170	8190	6090	3890	1490	4120
5	906	2060	980	5550	11700	9530	4660	11300	5460	3520	1190	6660
6	939	1650	1000	5180	17400	9280	9130	15300	5060	3410	1120	6490
7	1030	1280	1070	5460	22600	8290	16600	20900	4870	3030	1030	5060
8	1150	1180	1390	5740	23200	6810	17500	19200	5960	2790	1110	4850
9	1160	1170	1420	5610	20400	5910	16500	15300	7080	2780	1250	4540
10	1360	1050	1210	6780	17300	5410	13100	13600	10000	2740	1270	4070
11	1630	1160	1030	20400	14600	5410	9970	15600	16600	2610	1250	3800
12	1790	1460	1250	34900	12600	5210	7750	19400	19600	2560	1250	3830
13	1750	3560	1400	45300	13500	5100	6430	17100	19900	2930	1230	3590
14	1710	5220	1350	45200	14400	4960	7870	14900	19400	3050	1200	3480
15	1840	4360	1250	40100	13900	4690	22800	14800	19300	2470	1400	2980
16	1970	3360	1150	46000	12800	4320	34200	14900	20400	2150	1500	2710
17	1800	3180	985	43300	11700	4060	34100	16400	20800	2020	1490	2610
18	1860	3010	937	37600	10500	4600	29400	21700	20800	1840	3220	2770
19	2180	2410	909	44000	9280	5030	25700	20600	19500	1670	7740	2460
20	2060	1920	896	50800	9330	4210	24100	17600	17800	1560	7400	2190
21	1950	1630	846	47800	10100	3780	23800	15900	16000	1440	6400	1940
22	1790	1490	932	39400	11700	3620	21800	14300	14600	1400	5440	1740
23	1660	1370	922	30000	12500	3440	19500	12800	14100	1640	4580	1650
24	1610	1390	891	23600	10300	3330	17900	11900	13200	1810	4280	1920
25	1640	1510	876	19700	8470	3170	16200	10800	11100	1870	4290	3230
26	1540	1540	896	18600	7630	3000	15000	9890	9540	1890	3460	2950
27	1790	1490	1020	e17700	7520	2800	13900	9150	8540	1660	3940	2640
28	2290	1560	1190	e16500	7560	2710	12300	9930	7590	1410	4530	4060
29	2070	1690	1540	e14700	---	2880	11000	13000	6730	1240	3730	4490
30	1650	1660	1600	13400	---	2910	10200	12400	5990	1410	3230	4180
31	1280	---	1580	12500	---	3020	---	10900	---	1840	3060	---
TOTAL	48357	58660	36100	704910	351960	160570	453980	432260	369820	77370	88510	105820
MEAN	1560	1955	1165	22740	12570	5180	15130	13940	12330	2496	2855	3527
MAX	2290	5220	1610	50800	23200	9530	34200	21700	20800	5320	7740	6660
MIN	876	1050	846	1510	7520	2710	3040	7310	4870	1240	1030	1650
AC-FT	95920	116400	71600	1398000	698100	318500	900500	857400	733500	153500	175600	209900

CAL YR 1990 TOTAL 2875546 MEAN 7878 MAX 55200 MIN 699 AC-FT 5704000
WTR YR 1991 TOTAL 2888317 MEAN 7913 MAX 50800 MIN 846 AC-FT 5729000

e Estimated

08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1941 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: October 1967 to May 1982. Sediment analyses: April 1957 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1941 to current year.
WATER TEMPERATURE: November 1950 to current year.
SUSPENDED-SEDIMENT DISCHARGE: January 1966 to September 1986.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,600 microsiemens Sept. 4, 1978; minimum daily, 172 microsiemens Oct. 31, 1984.
WATER TEMPERATURE: Maximum daily, 33.0°C Aug. 5, 1951; minimum daily, 1.0°C Jan. 8, 1970, Dec. 23, 24, 1989.
SEDIMENT CONCENTRATION: Maximum daily mean, 13,500 mg/L Apr. 4, 1979; minimum daily mean, 8 mg/L Nov. 29, 1967, Sept. 20, Oct. 6, 7, 1980.
SEDIMENT LOAD: Maximum daily, 1,860,000 tons Apr. 4, 1979; minimum daily, 9.8 tons Oct. 11, 1983.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,390 microsiemens June 25; minimum daily 187 microsiemens Jan. 18.
WATER TEMPERATURE: Maximum daily, 31.0°C on several days during July and August; minimum daily, 5.0°C Dec. 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV											
13...	1315	3830	738	8.3	15.5	120	9.5	94	2.7	250	140
JAN											
08...	1455	5700	420	8.0	9.0	390	10.2	87	3.5	3100	5500
MAR											
04...	1115	9240	382	8.3	15.0	140	11.6	114	1.2	190	130
APR											
22...	1350	21700	448	8.0	23.0	76	6.8	80	0.8	2000	650
JUN											
11...	1057	17000	685	8.0	27.0	37	6.5	81	1.0	620	720
AUG											
14...	0925	1190	1100	8.3	30.5	20	7.2	96	1.7	56	64

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)
NOV											
13...	200	47	59	12	71	2	4.8	0	184	152	56
JAN											
08...	120	30	38	6.9	37	1	4.7	0	114	94	37
MAR											
04...	120	29	38	6.6	30	1	4.6	0	114	94	41
APR											
22...	130	39	44	5.4	34	1	4.8	0	113	92	36
JUN											
11...	170	63	53	9.6	65	2	4.6	0	133	109	67
AUG											
14...	250	82	68	18	120	3	4.9	0	199	163	110

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
NOV											
13...	98	0.40	8.7	418	403	0.380	0.370	0.020	0.030	0.400	0.400
JAN											
08...	46	0.20	7.0	243	241	1.41	1.43	0.090	0.070	1.50	1.50
MAR											
04...	43	0.20	7.7	225	230	0.470	0.500	0.040	0.020	0.510	0.520
APR											
22...	51	0.30	9.0	238	245	0.810	0.950	0.290	0.020	1.10	0.970
JUN											
11...	100	0.20	8.4	378	377	0.470	0.630	0.180	0.040	0.650	0.670
AUG											
14...	180	0.30	9.8	650	610	--	--	0.010	<0.010	<0.050	<0.050

08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	SEDIMENT, SUSPENDED (MG/L)
NOV											
13...	0.080	0.080	0.42	--	0.50	0.200	0.110	0.110	0.130	0.34	314
JAN											
08...	0.120	0.120	0.58	--	0.70	0.320	0.130	0.130	0.120	0.40	715
MAR											
04...	0.040	0.030	0.66	--	0.70	0.150	0.080	0.070	0.090	0.21	446
APR											
22...	0.190	0.020	0.61	--	0.80	0.400	0.100	0.060	0.250	0.18	1600
JUN											
11...	0.110	0.050	0.79	--	0.90	0.220	0.070	0.050	0.190	0.15	2110
AUG											
14...	0.020	<0.010	0.58	0.30	0.60	0.130	0.040	0.040	0.060	0.12	32

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
NOV											
13...	3250	93	30	3	110	<0.5	<1.0	<1	<3	2	38
JAN											
08...	11000	93	120	2	74	<0.5	<1.0	<1	<3	3	100
MAR											
04...	11100	75	40	1	73	0.5	<1.0	20	<3	4	30
APR											
22...	93700	84	--	--	--	--	--	--	--	--	--
JUN											
11...	96800	78	20	3	99	<0.5	<1.0	<1	<3	3	15
AUG											
14...	103	92	10	3	140	<0.5	<1.0	1	<3	2	6

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
NOV											
13...	<1	13	6	<0.1	<10	2	<2	<1.0	570	<6	<3
JAN											
08...	5	9	3	--	<10	3	<1	<1.0	320	<6	5
MAR											
04...	<1	7	2	<0.1	<10	1	<1	<1.0	340	<6	<3
APR											
22...	--	--	--	--	--	--	--	--	--	--	--
JUN											
11...	1	12	<1	<0.1	<10	1	<1	<1.0	540	<6	7
AUG											
14...	<1	16	1	<0.1	<10	2	<1	<1.0	880	<6	3

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1990 TO SEPTEMBER 1991

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICROSIEMENS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1990	48357	760	429	56000	110	13900	76	9910	200
NOV.	1990	58660	613	345	54600	80	12600	59	9410	170
DEC.	1990	36100	859	485	47300	130	12300	88	8540	220
JAN.	1991	704910	253	142	269000	26	48900	22	42700	79
FEB.	1991	351960	368	207	196000	40	38000	33	31800	110
MAR.	1991	160570	466	262	114000	54	23500	43	18800	140
APR.	1991	453980	393	221	270000	44	53500	36	44100	120
MAY	1991	432260	464	261	304000	54	63300	43	50500	140
JUNE	1991	369820	978	555	554000	160	158400	100	103800	240
JULY	1991	77370	1130	640	134000	190	39800	120	25500	270
AUG.	1991	88510	1060	601	144000	180	42300	110	27300	250
SEPT	1991	105820	921	521	149000	140	40400	96	27300	230
TOTAL		2888317	**	**	2292000	**	547000	**	400000	**
WTD.AVG.		7913	521	294	**	70	**	51	**	140

08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e620	777	735	763	366	456	534	450	448	1140	1210	953
2	628	686	767	720	385	493	536	435	458	1180	1240	1020
3	633	683	831	710	411	443	561	456	495	1170	1250	1150
4	666	662	845	688	431	410	606	475	512	1160	1160	1190
5	620	595	815	471	406	410	596	435	569	1230	1290	1150
6	672	688	817	409	399	412	468	371	e575	1230	1290	832
7	680	717	828	518	367	435	402	380	595	1170	1210	779
8	704	725	842	462	395	462	343	450	566	1220	1200	773
9	722	718	e850	651	314	484	322	365	555	1160	1210	932
10	739	804	865	512	311	456	314	345	590	1180	1230	712
11	803	833	832	443	315	448	382	335	690	1170	1170	845
12	830	805	836	266	301	442	342	362	862	1160	1150	930
13	820	746	864	243	321	438	357	402	996	1180	1020	940
14	853	820	876	226	316	437	433	374	1030	e1120	1100	945
15	837	652	898	214	317	432	366	380	1070	1070	1120	944
16	843	453	897	199	332	429	314	442	1100	1030	1050	924
17	827	489	897	190	332	443	468	431	1080	1030	1140	928
18	830	431	873	187	344	474	298	495	1070	1130	1190	953
19	e770	406	854	206	377	494	317	571	1250	1190	1310	935
20	e720	410	912	200	392	438	361	496	911	1160	1080	964
21	695	401	938	218	401	463	393	434	992	1110	954	957
22	698	407	916	210	374	504	468	515	1040	1070	493	861
23	592	423	898	213	581	534	412	582	1240	1020	505	997
24	672	e455	896	232	386	560	422	594	1330	1000	1100	983
25	765	500	913	240	393	570	427	571	1390	864	1180	952
26	808	551	918	248	379	574	432	569	1300	902	1230	881
27	818	611	874	278	386	572	429	570	1250	1060	1200	865
28	835	682	887	280	414	586	453	565	1240	971	1150	990
29	794	690	868	304	---	598	455	605	1170	1010	1120	664
30	843	685	910	336	---	546	440	668	1160	1030	969	795
31	814	---	822	342	---	532	---	507	---	1160	652	---
MEAN	747	617	864	361	373	483	422	472	918	1110	1100	925

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	20.0	16.0	9.0	10.0	15.0	19.0	25.0	28.0	29.0	31.0	29.0
2	27.0	20.0	17.0	10.0	10.0	16.0	20.0	25.0	28.0	30.0	31.0	29.0
3	27.0	22.0	18.0	10.0	12.0	15.0	20.0	25.0	26.0	30.0	31.0	29.0
4	28.0	23.0	14.0	10.0	12.0	15.0	21.0	25.0	28.0	30.0	31.0	29.0
5	28.0	18.0	13.0	10.0	13.0	16.0	20.0	25.0	29.0	30.0	31.0	28.0
6	28.0	17.0	13.0	12.0	14.0	17.0	20.0	24.0	---	30.0	31.0	28.0
7	28.0	18.0	14.0	10.0	14.0	19.0	20.0	23.0	29.0	31.0	31.0	28.0
8	29.0	18.0	12.0	10.0	13.0	16.0	21.0	23.0	29.0	30.0	31.0	27.0
9	28.0	16.0	---	10.0	14.0	18.0	22.0	22.0	28.0	30.0	30.0	27.0
10	20.0	14.0	13.0	11.0	15.0	17.0	22.0	22.0	27.0	30.0	30.0	28.0
11	20.0	15.0	14.0	10.0	15.0	17.0	22.0	23.0	29.0	30.0	31.0	28.0
12	20.0	16.0	15.0	10.0	15.0	18.0	24.0	23.0	27.0	30.0	31.0	28.0
13	20.0	16.0	16.0	9.0	16.0	18.0	24.0	24.0	27.0	30.0	31.0	28.0
14	20.0	15.0	16.0	9.0	16.0	18.0	24.0	25.0	27.0	---	31.0	29.0
15	24.0	16.0	19.0	11.0	15.0	18.0	22.0	25.0	27.0	30.0	31.0	29.0
16	24.0	18.0	20.0	11.0	14.0	15.0	23.0	25.0	27.0	31.0	31.0	29.0
17	24.0	18.0	21.0	11.0	14.0	16.0	23.0	25.0	28.0	29.0	29.0	29.0
18	24.0	18.0	20.0	11.0	17.0	16.0	23.0	24.0	28.0	31.0	29.0	29.0
19	---	19.0	17.0	11.0	17.0	16.0	23.0	25.0	29.0	30.0	30.0	28.0
20	---	19.0	18.0	11.0	15.0	17.0	23.0	25.0	29.0	30.0	30.0	25.0
21	23.0	20.0	20.0	10.0	14.0	19.0	22.0	25.0	29.0	30.0	30.0	25.0
22	19.0	21.0	14.0	10.0	14.0	20.0	23.0	25.0	29.0	30.0	30.0	24.0
23	18.0	21.0	7.0	10.0	13.0	20.0	22.0	26.0	29.0	28.0	30.0	25.0
24	18.0	---	5.0	10.0	13.0	19.0	23.0	26.0	29.0	28.0	29.0	25.0
25	18.0	20.0	7.0	10.0	15.0	20.0	23.0	26.0	29.0	29.0	30.0	24.0
26	18.0	22.0	7.0	10.0	13.0	22.0	24.0	26.0	29.0	30.0	30.0	23.0
27	19.0	22.0	9.0	10.0	13.0	22.0	25.0	28.0	29.0	30.0	29.0	24.0
28	19.0	22.0	10.0	11.0	14.0	22.0	25.0	28.0	29.0	30.0	29.0	24.0
29	19.0	18.0	12.0	12.0	---	21.0	25.0	28.0	29.0	31.0	29.0	23.0
30	19.0	16.0	15.0	11.0	---	20.0	25.0	28.0	29.0	30.0	29.0	24.0
31	---	---	9.0	10.0	---	19.0	---	28.0	---	30.0	29.0	---
MEAN	22.5	18.5	14.0	10.5	14.0	18.0	22.5	25.0	28.5	30.0	30.0	27.0

08115000 BIG CREEK NEAR NEEDVILLE, TX

LOCATION.--Lat 29°28'35", long 95°48'45", Fort Bend County, Hydrologic Unit 12070104, near center of stream at downstream side of bridge on State Highway 36, 1.5 mi downstream from Coon Creek, 5.5 mi north of Needville, and 10.5 mi upstream from Fairchild Creek, and 33.0 mi upstream from mouth.

DRAINAGE AREA.--42.8 mi².

PERIOD OF RECORD.--May 1947 to June 1950, March 1952 to current year.

REVISED RECORDS.--WSP 1148: 1947. WSP 1712: 1957-58, 1959(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 59.39 ft above National Geodetic Vertical Datum of 1929. Prior to June 30, 1950, and May 29, 1959, to Mar. 29, 1960, nonrecording gage at 10.00 ft higher datum. March 1952 to May 28, 1959, and Mar. 30, 1960, to Sept. 30, 1967, water-stage recorder at 10.00 ft higher datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Channel was rectified in 1956. No diversion above station. Low flow supplemented by drainage from irrigated fields. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--41 years (water years 1948-49, 1953-91), 34.9 ft³/s (25,290 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,400 ft³/s June 26, 1960 (gage height, 23.81 ft); maximum gage height, 24.03 ft Oct. 31, 1959; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1913, 24.4 ft in August 1945 before channel rectification, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 5	1800	*1,690	*20.46	No other peak greater than base discharge.			

Minimum daily discharge, 0.26 ft³/s Oct. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.0	.77	.50	3.5	109	1.1	.98	4.9	9.2	2.2	3.8
2	1.2	1.0	.75	17	3.3	20	1.1	.97	4.8	5.5	2.2	1.9
3	1.2	1.2	.81	173	3.2	8.0	1.1	.96	4.1	7.4	2.5	1.9
4	1.7	1.5	.74	35	605	4.0	149	.83	4.2	6.7	1.9	10
5	14	1.2	.70	11	259	2.5	962	1.1	4.5	8.3	2.7	12
6	2.7	1.1	.76	79	76	2.0	532	1.1	4.3	90	3.6	8.4
7	1.4	1.1	.88	37	29	1.7	163	1.0	53	161	3.8	21
8	.80	3.3	.72	9.4	14	1.4	56	1.2	389	25	3.6	9.1
9	.33	20	.72	131	7.2	1.3	26	1.4	120	10	9.8	4.7
10	2.7	7.2	.81	845	5.5	1.3	13	1.0	137	5.6	7.4	3.0
11	1.0	3.6	.70	263	3.9	1.2	108	1.0	23	4.8	4.2	2.8
12	.61	1.8	.75	73	2.9	1.2	116	1.2	11	3.0	2.9	2.0
13	.28	1.3	.70	28	2.5	1.2	43	1.2	88	2.0	2.3	2.3
14	1.1	.88	.80	28	2.1	1.2	177	1.3	200	1.4	2.1	1.6
15	.57	.60	.70	310	1.9	1.2	321	1.3	34	1.1	75	1.0
16	.71	1.7	.94	82	1.6	3.1	111	3.1	95	.93	135	.75
17	.26	1.3	.91	29	1.9	13	39	11	712	.87	37	.56
18	.54	1.2	.81	471	1.8	3.3	14	19	78	.73	14	.54
19	.47	1.1	.75	272	1.7	2.2	5.4	17	21	.68	6.2	.53
20	.46	.97	.55	82	1.7	2.1	e2.0	4.6	8.8	.73	3.7	1.0
21	16	.93	.61	32	16	1.8	e1.6	4.8	5.8	.85	2.3	2.0
22	31	.93	.51	16	21	1.6	e1.2	2.2	16	2.6	2.3	1.4
23	5.4	1.2	.67	9.6	10	1.3	e1.6	2.6	27	3.1	7.2	1.5
24	1.9	1.1	.91	8.0	5.4	1.3	e1.5	2.9	6.2	2.6	2.0	1.2
25	1.1	1.1	.78	6.9	3.6	1.2	e1.4	3.3	43	2.5	1.1	1.3
26	.84	1.2	.94	5.5	5.5	1.2	e1.3	3.3	71	2.4	1.1	1.2
27	.85	1.1	7.6	4.8	3.8	.98	e1.2	3.5	14	2.0	1.7	1.2
28	.85	.95	1.7	4.2	5.9	1.0	e1.1	3.8	13	1.9	.96	1.0
29	.97	.77	.89	3.7	---	1.6	e1.1	5.7	22	1.9	.83	1.3
30	.81	.75	.73	3.5	---	1.3	e1.0	4.6	16	14	.90	1.5
31	.90	---	.49	3.5	---	1.1	---	4.3	---	3.4	1.5	---
TOTAL	94.05	63.08	31.10	3073.60	1098.9	195.28	2853.7	112.24	2230.6	382.19	343.99	102.48
MEAN	3.03	2.10	1.00	99.1	39.2	6.30	95.1	3.62	74.4	12.3	11.1	3.42
MAX	31	20	7.6	845	605	109	962	19	712	161	135	21
MIN	.26	.60	.49	.50	1.6	.98	1.0	.83	4.1	.68	.83	.53
AC-FT	187	125	62	6100	2180	387	5660	223	4420	758	682	203

CAL YR 1990	TOTAL	4245.31	MEAN	11.66	MAX	943	MIN	.26	AC-FT	8420
WTR YR 1991	TOTAL	10581.21	MEAN	29.0	MAX	962	MIN	.26	AC-FT	20990

e Estimated

08116650 BRAZOS RIVER NEAR ROSHARON, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°20'58", long 95°34'56", Fort Bend-Brazoria County line, Hydrologic Unit 12070104, on right bank at downstream side of bridge on Farm Road 1462, 2.0 mi downstream from Big Creek, 2.1 mi upstream from Cow Creek, and 7.3 mi west of Rosharon and at mile 56.7.

DRAINAGE AREA.--45,339 mi², approximately, of which 9,566 mi² probably is noncontributing.

PERIOD OF RECORD.--April 1967 to September 1980, Apr. 25, 1984, to current year.
Water-quality records.--Chemical and biochemical analyses: October 1967 to September 1980. Specific Conductance: October 1967 to September 1980. Water Temperature: October 1967 to September 1980. Sediment analyses: October 1974 to September 1980.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Water is diverted above station for irrigation, industrial, and municipal supply and materially affects low flow. For regulation by upstream reservoirs and by Soil Conservation Service floodwater-retarding structures, see Brazos River at Washington (station 08110200). Gage-height telemeter at station.

AVERAGE DISCHARGE.--20 years (water years 1968-80, 1985-91), 7,591 ft³/s (5,500,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,900 ft³/s May 14, 1968 (elevation, 50.74 ft); minimum daily, 40 ft³/s Apr. 7-10, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since at least 1884, 56.4 ft about Dec. 11, 1913, from information by the Texas Department of Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 53,400 ft³/s Jan. 20 at 2100 hrs (gage height, 42.29 ft); minimum daily, 598 ft³/s Aug. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1200	1360	1420	1420	11100	8310	2630	8560	9090	5240	1880	2600
2	1090	1220	1380	1400	10000	8310	2740	7450	7660	4780	1770	2880
3	930	1170	1300	2120	8950	7950	2600	6720	6370	4460	1570	3170
4	860	1270	1120	2650	11200	8540	3010	6320	5620	4000	1430	3350
5	950	1770	979	3990	18400	9090	13500	8300	5250	3520	1270	4060
6	972	1910	843	4570	19000	9130	22300	10600	4860	3380	969	5830
7	1020	1570	875	4580	21300	8600	22100	16800	4630	3590	831	5360
8	1100	1330	931	4810	24100	7510	23100	21000	4700	3090	700	4720
9	1210	1410	1170	4920	22700	6270	19400	19100	6020	2690	700	4320
10	1230	1260	1170	7400	19000	5410	16600	15000	e8010	2650	725	e3720
11	1390	1130	953	15200	15900	5070	12500	13500	12100	2490	751	e3190
12	1530	1240	828	31600	13100	4890	10300	17100	17100	2260	777	e2970
13	1600	1540	1050	41900	12200	4810	8210	18100	19300	2260	700	e2830
14	1580	3290	1140	46600	13300	4690	6610	15300	19700	2760	700	e2720
15	1560	3980	1090	48400	13500	4520	13600	14100	20100	2700	623	e2630
16	1690	3430	1010	48500	12700	4330	31600	14000	21100	2110	598	e2550
17	1690	2940	995	49000	11600	4200	39700	14500	23100	1960	675	e2440
18	1620	2740	1060	45700	10500	4270	36400	e17200	23500	1740	913	2370
19	1680	2480	936	48000	9460	4720	30800	e17900	22600	1570	2720	2390
20	1920	2070	913	52300	8590	4670	26700	e17400	19900	e1470	5670	2080
21	1860	1710	951	52600	10400	4030	25200	e16400	17700	e1430	5300	1940
22	1890	1490	893	47900	11300	3670	23900	15100	15200	e1330	5080	1720
23	1750	1340	941	38900	12400	3370	20700	13300	14000	e1370	4420	1580
24	1580	1230	953	28800	11500	3130	18100	11800	12900	e1500	3930	1510
25	1650	1260	944	21800	9340	3040	16200	e10700	11300	e1630	3830	1930
26	1690	1350	875	19000	7940	2870	14500	e9570	9670	e1770	3650	2750
27	1580	1360	978	18100	7380	2700	13300	e8680	8290	e1810	2990	2440
28	1790	1320	1020	16900	7320	2560	12100	e8110	7350	e1600	3680	2470
29	2090	1370	1080	15300	---	2560	10500	9760	6630	e1530	3610	3590
30	1860	1460	1340	13500	---	2650	9380	11500	6040	e1500	2970	3760
31	1550	---	1350	12100	---	2590	---	10500	---	e1630	2620	---
TOTAL	46112	53000	32488	749960	364180	158460	508280	404370	369790	75820	68052	89870
MEAN	1487	1767	1048	24190	13010	5112	16940	13040	12330	2446	2195	2996
MAX	2090	3980	1420	52600	24100	9130	39700	21000	23500	5240	5670	5830
MIN	860	1130	828	1400	7320	2560	2600	6320	4630	1330	598	1510
AC-FT	91460	105100	64440	1488000	722400	314300	1008000	802100	733500	150400	135000	178300

CAL YR 1990 TOTAL 2838572 MEAN 7777 MAX 51100 MIN 531 AC-FT 5630000
WTR YR 1991 TOTAL 2920382 MEAN 8001 MAX 52600 MIN 598 AC-FT 5793000

e Estimated

08117500 SAN BERNARD RIVER NEAR BOLING, TX

LOCATION.--Lat 29°18'48", long 95°53'38", Wharton-Fort Bend County line, Hydrologic Unit 12090401, on left bank at downstream side of bridge on Farm Road 442, 2.5 mi downstream from Snake Creek, and 4.5 mi northeast of Boling.

DRAINAGE AREA.--727 mi².

PERIOD OF RECORD.--May 1954 to current year.
Water-quality records.--Chemical and biochemical analyses: February 1978 to September 1986.

REVISED RECORDS.--WSP 1712: 1958. WSP 1922: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 30.81 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for days of estimated daily discharges which are poor. Part of low flow is drainage from areas irrigated with diversions from the Colorado River. There are numerous diversions above station for irrigation and for other uses. Several measurements of temperature were made during the year.

AVERAGE DISCHARGE.--37 years, 483 ft³/s (349,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,200 ft³/s June 28, 1960 (gage height, 42.41 ft); minimum daily, 1.7 ft³/s Dec. 7, 1988 and Dec. 18, 1989.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 43.5 ft in 1913 (probably December). Flood in September 1938 reached a stage of 43.3 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 19	0900	3,470	19.06	Apr. 18	1000	5,340	23.79
Apr. 6	0500	*8,590	*30.27				

Minimum daily discharge, 3.8 ft³/s Dec. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	17	5.2	20	107	63	13	119	180	460	163	74
2	90	12	5.1	18	87	80	11	105	197	464	132	94
3	90	8.7	5.1	85	73	65	9.8	97	174	428	111	177
4	92	6.4	4.6	274	906	49	638	99	148	501	98	269
5	98	6.4	4.0	346	2150	39	6210	115	128	558	84	338
6	105	8.5	3.8	399	1330	35	8280	139	111	483	75	542
7	103	11	4.2	370	1190	32	5920	163	96	393	71	742
8	103	13	4.5	302	909	29	3770	176	175	325	73	775
9	106	17	4.1	252	898	25	2940	261	222	286	81	652
10	113	43	4.6	1470	788	22	2450	334	330	286	80	561
11	136	185	4.5	2760	553	20	1650	436	330	301	78	469
12	135	182	4.2	2440	384	20	1910	476	368	296	81	369
13	131	130	5.7	2000	251	19	2080	487	350	308	78	278
14	128	103	7.4	1640	166	17	1710	514	317	312	84	220
15	119	88	6.9	2250	113	16	2280	472	277	284	160	164
16	107	63	6.0	1780	84	24	3110	355	293	246	140	112
17	107	45	5.6	1120	66	79	4640	236	965	234	148	88
18	107	33	5.1	1530	54	93	5280	172	1050	223	143	94
19	108	25	5.0	3280	46	81	4840	192	1450	219	159	135
20	118	18	4.6	2700	41	50	4120	165	1880	219	156	218
21	114	14	4.2	2570	56	36	3460	153	1440	235	149	221
22	96	13	4.7	3090	120	32	2710	182	939	241	145	222
23	70	12	e4.2	2920	102	27	1630	220	655	240	138	222
24	65	11	e4.4	1820	86	23	912	214	491	217	128	248
25	62	36	e4.4	1010	72	20	594	197	371	210	115	283
26	49	27	e4.6	670	63	18	425	155	349	199	99	279
27	41	18	e5.5	461	56	18	301	113	280	195	94	262
28	37	12	9.6	313	50	16	222	92	251	203	97	227
29	33	9.5	34	223	---	17	169	123	297	218	94	186
30	28	6.5	31	174	---	15	140	120	404	227	87	156
31	21	---	25	136	---	14	---	134	---	209	82	---
TOTAL	2803	1174.0	231.8	38423	10801	1094	72424.8	6816	14518	9220	3423	8677
MEAN	90.4	39.1	7.48	1239	386	35.3	2414	220	484	297	110	289
MAX	136	185	34	3280	2150	93	8280	514	1880	558	163	775
MIN	21	6.4	3.8	18	41	14	9.8	92	96	195	71	74
AC-FT	5560	2330	460	76210	21420	2170	143700	13520	28800	18290	6790	17210

CAL YR 1990 TOTAL 46886.0 MEAN 128 MAX 3350 MIN 3.8 AC-FT 93000
WTR YR 1991 TOTAL 169605.6 MEAN 465 MAX 8280 MIN 3.8 AC-FT 336400

e Estimated

Because the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than continuous stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage of those events. The data collected for special reasons are called measurements at miscellaneous sites.

Streamflow data collected at partial-record stations where water-quality data other than observations of water temperature are not obtained are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations; the second is a table of annual maximum stage and (or) discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low and high flows are given in a third table. Discharge measurements and water-quality data collected at partial-record stations are presented in downstream order in the section of this report entitled "Gaging-station records."

Low-flow partial-record stations

Measurements of streamflow at low-flow partial-record stations that are not published in the gaging-station section are given in the following table. Most of the measurements of low flow were made during periods when streamflow was sustained primarily by ground-water discharge. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will indicate the low-flow potential of the stream. The years listed in the column headed "Period of record" identifies the water years in which measurements were made at the same or at practically the same site.

Discharge measurements made at low-flow partial-record station during water year 1991

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Brazos River basin				
08104290	Salado Creek above Salado, Tex.	Lat 30'56'42", long 97'32'30", Bell County, 0.2 mi upstream from I.H. 35, at Salado.	--	1984-88, 1990-91	11-05-90	13.7
					12-27-90	10.3
					02-11-91	29.7
					04-01-91	13.4
					05-20-91	52.7
					07-09-91	16.0
08104310	Salado Creek below Salado Springs, Tex.	Lat 30'57'07", long 92'21'26", Bell County, on right bank downstream from low-water crossing in the Mill Creek Country Club and subdivision at Salado.	--	1984-87†, 1988, 1990-91	11-05-90	22.2
					12-27-90	17.6
					02-11-91	47.2
					04-01-91	31.4
					05-20-91	79.5
					07-09-91	39.8
					08-26-91	21.3
08104795	North Fork San Gabriel River upstream from State Highway 418 at Georgetown, Tex.	Lat 30'38'44", long 97'40'49", Williamson County 0.2 mi upstream from State Highway 418 at Georgetown.	--	1984-88, 1990-91	11-05-90	7.26
					12-27-90	5.31
					02-11-91	10.9
					04-01-91	8.59
					05-20-91	93.5
					07-09-91	92.5
					08-26-91	10.3
08104950	South Fork San Gabriel River upstream from State Highway 418 at Georgetown, Tex.	Lat 30'38'38", long 97'40'50", Williamson County 0.2 mi upstream from State Highway 418, at Georgetown.	--	1984-88, 1990-91	11-05-90	2.57
					12-27-90	2.17
					02-11-91	39.4
					04-01-91	27.0
					05-20-91	40.6
					07-09-91	19.0
					08-26-91	7.61
08105000	San Gabriel River at Georgetown, Tex.	Lat 30'39'14", long 97'39'18", Williamson County, on left bank 100 ft downstream from Missoiri-Kansas Railroad bridge, 1.2 mi below confluence of North and South Forks, about 1.5 mi northeast of Williamson County Courthouse in Georgetown.	399	1924-25†, 1934-73†, 1984-87†, 1988, 1990-91	11-05-90	21.5
					12-27-90	16.7
					02-11-91	75.1
					04-01-91	48.6
					05-20-91	163
					07-09-91	116
					08-26-91	17.1
08105095	Berry Creek upstream from I.H. 35 near Georgetown, Tex.	Lat 30'42'11", long 97'39'58", Williamson County, 1.4 mi upstream from I.H. 35 near Georgetown.	--	1984-88, 1990-91	11-05-90	0
					12-27-90	0
					02-11-91	12.3
					04-01-91	6.32
					05-20-91	17.8
					07-09-91	13.54
					08-26-91	0
08105160	Dry Berry Creek near Georgetown, Tex.	Lat 30'41'28", long 97'38'14", Williamson County, at downstream side of county road,0.4 mi upstream from mouth, and 4.0 mi northeast of Georgetown.	--	1986-88, 1990-91	11-05-90	0
					12-27-90	0
					02-11-91	3.05
					04-01-91	.72
					05-20-91	3.13
					07-09-91	.11
					08-26-91	0
08105200	Berry Creek at State Highway 971 near Georgetown, Tex.	Lat 30'40'33", long 97'36'52", Williamson County, at downstream side of State Highway 971 bridge and 4.7 mi northeast of Georgetown.	--	1964-73, 1984-87†, 1988, 1990-91	11-05-90	0
					12-27-90	.40
					02-11-91	27.7
					04-01-91	20.3
					05-20-91	44.4
					07-09-91	17.7
					08-26-91	5.11

See footnote at end of table.

Discharge measurements made at low-flow partial-record station during water year 1991--Continued

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Dis-charge (ft^3/s)
		Brazos River basin				
08105300	San Gabriel River near Weir, Tex.	Lat 30°38'45", long 97°35'06", Williamson County on left bank at downstream side of State Highway 29 bridge, 0.5 mi upstream from Manske Branch, 4.7 mi east of Georgetown, and 54.8 mi upstream from mouth.	563	1976-90† 1991	11-05-90	26.8
					12-27-90	16.3
					02-11-91	112
					04-01-91	71.2
					05-20-91	213
					07-09-91	144
					08-26-91	41.7

† Operated as a continuous-record station.

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), data are generally collected for use in stage-frequency studies of flood-profile definition. Gages at these stations usually consist of a device that will register the peak stage occuring between inspections of the gage. The years used in the column "Period of record" identify the years in which the annual maximum has been determined.

Annual maximum stage and (or) discharge during water year 1991

Station no.	Station name	Location	Drainage area (mi²)	Period of record	Annual maximum		
					Date	Gage height	Discharge (ft³/s)
		San Jacinto River basin					
08067525	Goose Creek at Baytown, Tex.	Lat 29°46'14", long 94°59'58", Harris County, at bridge on Baker Road in Baytown, 1.1 mi upstream from West Fork Goose Creek, and 2.0 mi upstream from East Fork Goose Creek.	a15.8	1984-91	04-05-91	*12.73	--
08068325	Willow Creek near Tomball, Tex.	Lat 30°06'19", long 95°32'47", Harris County, at bridge on Kuykendahl Road, 0.6 mi upstream from Cannon Gully, and 4.0 mi east of Tomball.	41.0	1984-91	04-14-91	27.69	1,060
08068700	Cypress Creek at Sharp Road near Hockley, Tex.	Lat 29°55'15", long 95°50'24", Harris County, at bridge on Sharp Road and 7.4 mi south of Hockley.	80.7	1976-78, 1979-91	04-016-91	67.27	--
08068900	Cypress Creek at Stubner Airline Road near Westfield, Tex.	Lat 30°00'23", long 95°30'42", Harris County, at bridge on Stubner Airline Road, 1.3 mi upstream from Spring Gully and 6.5 mi west of Westfield.	248	1982-87† 1987-91	04-14-91	34.09	4,340
08072350	Buffalo Bayou near Fulshear, Tex.	Lat 29°43'22", long 95°46'01", Harris County, at proposed location of Peek Road bridge, about 200 ft downstream from Little Prong Bayou, 4,300 ft upstream from Mason Road, 8.3 mi east-northeast of Fulshear.	81.7	1986-91	04-14-91	12.48	--
08072700	South Mayde Creek near Addicks, Tex.	Lat 29°48'03", long 95°41'33", Harris County, at bridge on Groeschke Road, 3.2 mi west of Adicks, and 4.6 mi upstream from Langham Creek.	32.3	1974-91	04-14-91	*107.32	--
08072800	Langham Creek near Addicks, Tex.	Lat 29°50'08", long 95°37'32", Harris County, at bridge on Clay Road, 3.6 mi north of Addicks, and 4.4 mi upstream from mouth.	48.9	1974-91	04-14-91	*100.56	--
08074020	Whiteoak Bayou at Alabonson Road at Houston, Tex.	Lat 29°52'14", long 95°28'49", Harris County, at bridge on Alabonson Road, in northwest Houston, 1.0 mi upstream from Vogel Creek, and 2.5 mi upstream from Cole Creek.	34.5	1984-91	04-14-91	*45.77	4,440
08074150	Cole Creek at Deihl Road, Houston, Tex.	Lat 29°51'04", long 95°29'16", Harris County, at bridge on Deihl Road in northwest Houston, 1.8 mi upstream from mouth.	7.50	1964-86† 1987-91	06-16-91	*77.05	1,720
08074250	Brickhouse Gully at Costa Rica Street, Houston, Tex.	Lat 29°49'40", long 95°28'09", Harris County, at bridge on Costa Rica Street in northwest Houston and 1.0 mi upstream from Whiteoak Bayou.	11.4	1964-81† 1984-85† 1986-91	06-16-91	*64.97	4,540
08074540	Little Whiteoak Bayou at Trimble Street at Houston, Tex.	Lat 29°47'33", long 95°22'06", Harris County, at bridge on Trimble Street, Houston.	18.0	1979-91	01-10-91	*34.48	--
08074760	Brays Bayou at Alief Road, Alief, Tex.	Lat 29°42'39", long 95°35'13", Harris County, at bridge on High Star Street in Alief.	14.1	1977-91	04-14-91	13.40	--
08074780	Keegans Bayou at Keegan Road near Houston, Tex.	Lat 29°39'55", long 95°35'42", Harris County, at bridge on Keegan Road and about 16 mi southwest of Houston.	a8.63	1965-71, 1975-91	02-04-91	*76.71	--
08074800	Keegans Bayou at Roark Road near Houston, Tex.	Lat 29°39'23", long 95°33'43", Harris County, at bridge on Roark Road in southwest Houston.	a12.7	1965-91	01-14-91	*72.29	2,500
08074810	Brays Bayou at Gessner Drive, Houston, Tex.	Lat 29°40'21", long 95°31'41", Harris County, at bridge on Gessnera Drive in southwest Houston amd 0.10 mi below mouth of Keegans Bayou.	53.2	1977-91	01-15-91	*59.42	9,470
08075780	Greens Bayou at Cutten Road near Houston, Tex.	Lat 29°56'56", long 95°31'10", Harris County, at bridge on Cutten Road and about 16.5 mi northwest of Houston.	a8.65	1965-91	04-14-91	*114.17	889
08076900	Carpenters Bayou near Channelview, Tex.	Lat 29°46'20", long 95°09'24", Harris County, at bridge on temporary Beltway 8, at western boundary of Channelview 4.9 mi upstream from mouth.	a25.8	1986-91	01-15-91	*10.77	--

See footnotes at end of table.

Annual maximum stage and (or) discharge during water year 1991—Continued

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum		
					Date	Gage height	Discharge (ft^3/s)
		Clear Creek basin					
08077505	Beamer Street Ditch at Houston, Tex.	Lat 29°35'30", long 95°13'19", Harris County, at bridge on Hughes Road in southeast Houston.	5.19	1984-91	05-08-91	*29.23	--
08077520	Turkey Creek near Friendswood, Tex.	Lat 29°35'02", long 95°11'13", Harris County, at bridge on Dixie Farm Road in southern Harris County, 2.4 mi upstream from Clear Creek, and 3.9 mi north-northeast of Friendswood.	6.78	1985-91	04-05-91	*24.78	--
08077600	Clear Creek near Friendswood, Tex.	Lat 29°31'02", long 95°10'42", Galveston County, at bridge on Farm Road 528 and 1.5 mi southeast of Friendswood.	--	1966-91	04-05-91	*14.16	--
08077630	Horsepen Bayou at Bay Area Blvd., Houston, Tex.	Lat 29°35'00", long 95°06'12", Harris County, at upstream bridge on Bay Area Blvd., in southeast Houston, and 2.0 mi upstream from Armand Bayou.	17.8	1985-91	04-05-91	*9.48	--
		Brazos River basin					
08079300	Blackwater Draw tributary near Floyd, N. Mex.	Lat 34°14'52", long 103°44'51", Roosevelt County, 0.5 mi below section road and 10 mi west of Floyd.	10	1963-91	07-13-91	1.68	123
08080600	Running Water Draw near Clovis, N. Mex.	Lat 34°31'55", long 103°12'05", Curry County, 0.25 mi upstream from State Highway 18 and 8 mi west of Clovis.	109	1953-56, 1957-64† 1965-91	07-15-91	5.18	2,710

* Elevation, in feet.
† Operated as a continuous-record station.
b Revised.
c Gage height not determined.
d Discharge not determined.
e Estimated.

INDEX

October 1, 1978

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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