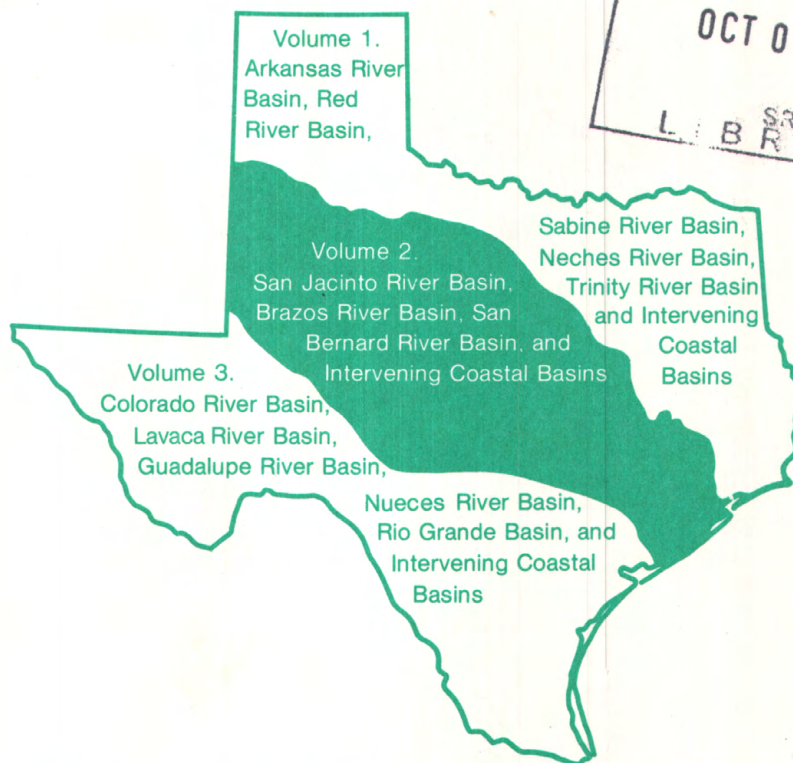
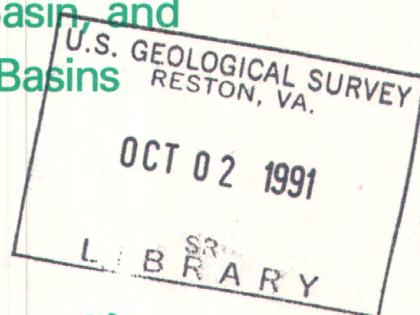


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Water Resources Data Texas Water Year 1990

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-90-2
Prepared in cooperation with the State of Texas
and with other agencies

CALENDAR FOR WATER YEAR 1990

1989

OCTOBER

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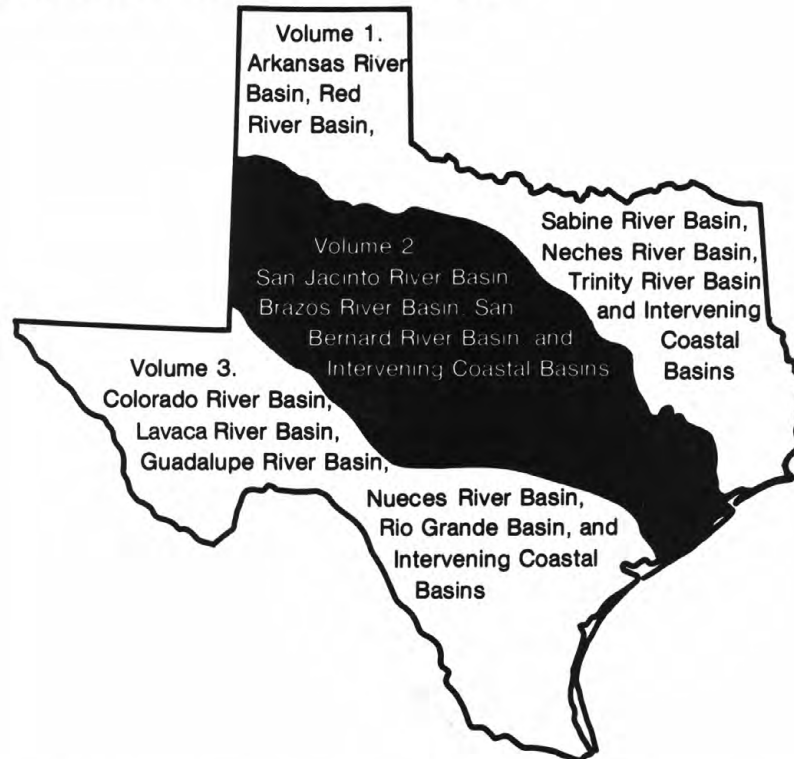
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Water Resources Data Texas Water Year 1990

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-90-2
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

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Austin, Texas 78753**

1990

PREFACE

This volume 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 and quality of water, providing the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing land and water resources in Texas are contained in 3 volumes:

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

[District Office, Fort Worth, Houston, and Wichita Falls Subdistricts]

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

[District Office, Austin, Fort Worth, Houston, San Angelo, and Wichita Falls Subdistricts]

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

[District Office, Austin, Houston, San Angelo, and San Antonio Subdistricts]

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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This report was prepared in cooperation with the State of Texas and other agencies under the supervision of C.R. Burchett, District Chief.

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16. Abstract (Limit: 200 words) Surface-water data for the 1990 water year for Texas are presented in three volumes, appropriately identified as to content by river basins. Data in each volume consist of records of stage, discharge, and water quality of streams and canals; and stage, contents, and water quality of lakes and reservoirs. Also included are 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 State and Federal agencies in Texas.			
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WATER RESOURCES DATA - TEXAS, 1990

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 three 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 90 gaging stations; stage only at 7 gaging stations; stage and contents at 20 lakes and reservoirs; and water quality at 49 gaging stations. Also included are data for 34 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 1975 water year, the report was changed to its present format, with data on quantities and quality of surface water contained in each of three volumes.

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-90-2." 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.

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) 832-5791.

COOPERATION

Federal agencies that assisted the Geological Survey in the collection of data in this report in the form of funds or services in 1989 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 1990 did not follow the long-term precipitation pattern. Above-normal precipitation occurred from El Paso in far west Texas, eastward through the Edwards Plateau into the North Central climatic division and the northern half of the East Texas climatic division (fig. 1). All other areas received from slightly above to below-normal precipitation, except the lower Rio Grande Valley, which continued to receive much below-normal precipitation during the year.

The above-normal precipitation in North-Central and the northern half of East Texas was the result of heavy rains that began in April and continued through May. From January 1 to May 24, 1990, the Dallas/Fort Worth metropolitan area of North-Central Texas received 27.17 inches of precipitation (17.50 inches above normal). During April, 15 percent of reporting stations in North-Central and the northern half of East Texas received more than 10 inches, with an additional 55 percent receiving from 5 to 10 inches. The maximum monthly precipitation of 14.66 inches for Brownwood during April resulted in extensive flooding in that general area. During May, 10 percent of reporting stations in North-Central Texas received more than 10 inches, with an additional 40 percent receiving from 5 to 10 inches. In the northern half of East Texas, 23 percent of stations received more than 10 inches and an additional 55 percent of reporting stations received from 5 to 10 inches of precipitation.

Streamflow during the current water year generally followed the precipitation patterns. Streamflow was above normal for much of the year in North-Central, the northern half of East Texas, and the upper part of South-Central Texas. Record flooding occurred along the Red, Trinity, and the middle Brazos River basins during the year. All other river basins were near normal for the year.

Conservation storage in 74 selected reservoirs throughout the State, with a combined conservation capacity of 34,049,000 acre-feet, showed no change during the year and remained at 85 percent of con-

servation capacity. Records from the individual reservoirs indicate that storage increased in 27, decreased in 41, and remained the same in 6.

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 middle Brazos River basin, and near normal in the remainder of the

area described in volume 2 for water year 1990. Streamflow in the San Jacinto River basin was slightly above normal for water year 1990. Two of six selected streamflow stations in the area had streamflow in the above-normal range, and the other four stations had normal to slightly above-normal streamflow, although streamflows were below normal for several months at some stations. Precipitation records for the area covered by volume 2 indicate that amounts were slightly below normal for the High Plains (fig. 1), above normal in North-Central Texas, and below normal along the Gulf Coast.

Streamflow at the hydrologic index station North Bosque River near Clifton was within the highest 25 percent of record during March, April, May, and August, and normal for the remainder of the year. A comparison of streamflow for water year 1990, with streamflow for the period of record at six selected stations (fig. 2) for which data are included in volume 2 is presented in table 1.

Table 1.—Streamflow at six selected stations for water year 1990

Station no. and name	Discharge during 1990 water year (cubic feet per second)			Discharge during period of record (cubic feet per second)		
	Max.	Min.	Avg.	Max.	Min.	Avg.
<u>San Jacinto River basin</u>						
08074500 Whiteoak Bayou at Houston, Tex.	8,550	24	103	18,300	0	90.0 (1937-90)
<u>Brazos River basin</u>						
08080500 Double Mountain Fork Brazos River near Aspermont, Tex. <u>1/</u>	28,900	0.04	158	91,400	0	158 (1925-34, 1941-90)
08082500 Brazos River at Seymour, Tex.	32,600	12	537	95,400	0	374 (1925-90)
08095000 North Bosque River near Clifton, Tex. <u>2/</u>	82,400	10	375	92,800	0	176 (1968-90)
08111000 Navasota River near Bryan, Tex.	16,100	0	427	38,200	0	570 (1961-90)
08114000 Brazos River at Richmond, Tex. <u>1/</u>	55,800	602	7,742	123,000	35	7,170 (1941-90)

1/ National Stream Quality Accounting Network (NASQAN) site.

2/ Hydrologic index station.

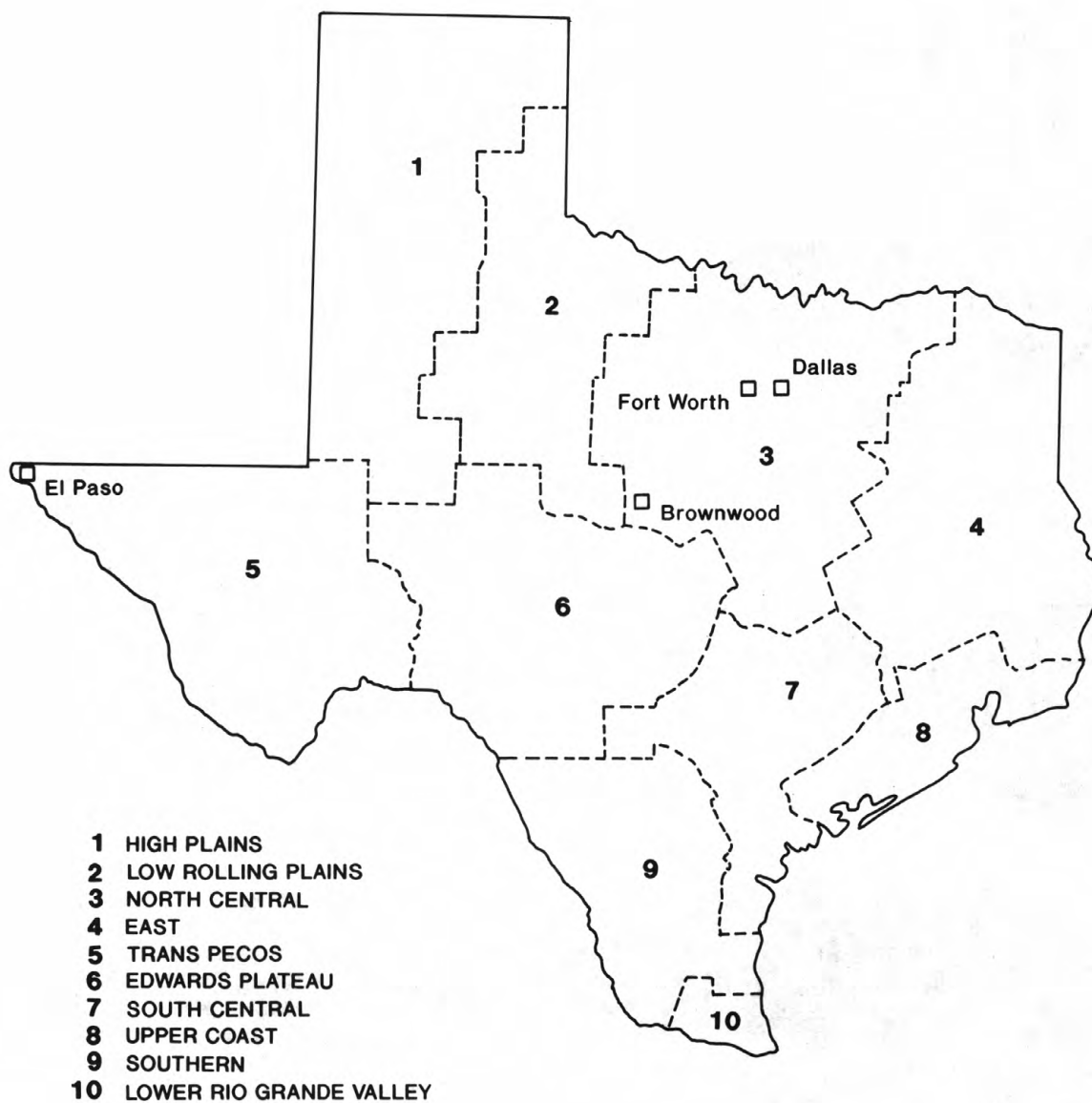


Figure 1.--Ten climatic divisions of the State (Modified from U.S. Department of Commerce, National Oceanic and Atmospheric Administration, 1990, Climatological data, Texas, 1990: National Climatic Data Center, v. 95, no. 9).

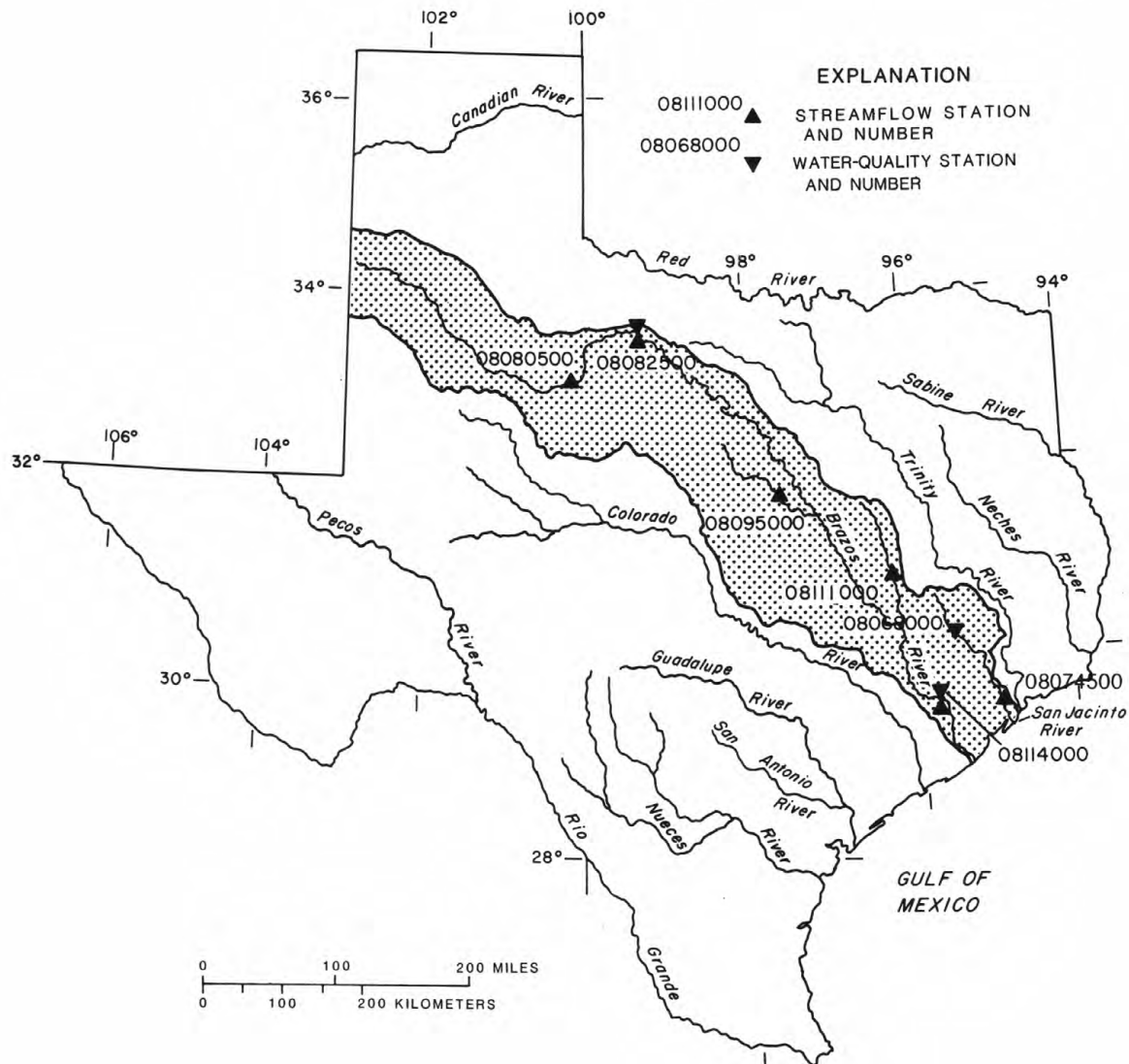


Figure 2.--Area of Texas covered by volume 2 (shaded) and location of selected streamflow and water-quality stations in volume 2.

At the other three index stations in the State, streamflow during water year 1990 was generally in the normal to above-normal range. Streamflow at the Neches River near Rockland was above normal during February, March, April, and June (within the highest 25 percent of record), and normal for the remainder of the year. The North Concho River near Carlsbad had above-normal streamflow from December through March and during June, and normal streamflow for the remainder of the year. The Guadalupe River near Spring Branch had above-normal streamflow during May, July, and August, with normal streamflow for the remainder of the year, with the exception of October, which had below-normal streamflow (within the lowest 25 percent of record).

Monthly mean discharge and the median of the monthly mean discharges for water years 1951-80 for the four long-term hydrologic index stations in the State are shown in figure 3.

Conservation storage in 21 selected reservoirs in this area of the State, with a total combined conservation capacity of 3,921,370 acre-feet, increased slightly from

93 percent of capacity at the end of September 1989 to 94 percent at the end of September 1990. Records from these reservoirs indicate that storage increased in 7, decreased in 11, and remained the same in 3.

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 1990 are compared with those for the water years 1986-90 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 1990 water year

Station no. and name	Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
	1990	1986-90	1990	1986-90
<u>San Jacinto River basin</u>				
08068000 West Fork San Jacinto River near Conroe, Tex.	291	362	142	133
<u>Brazos River basin</u>				
08082500 Brazos River at Seymour, Tex.	537	406	2,480	2,740
08114000 Brazos River at Richmond, Tex.	7,742	7,458	422	413

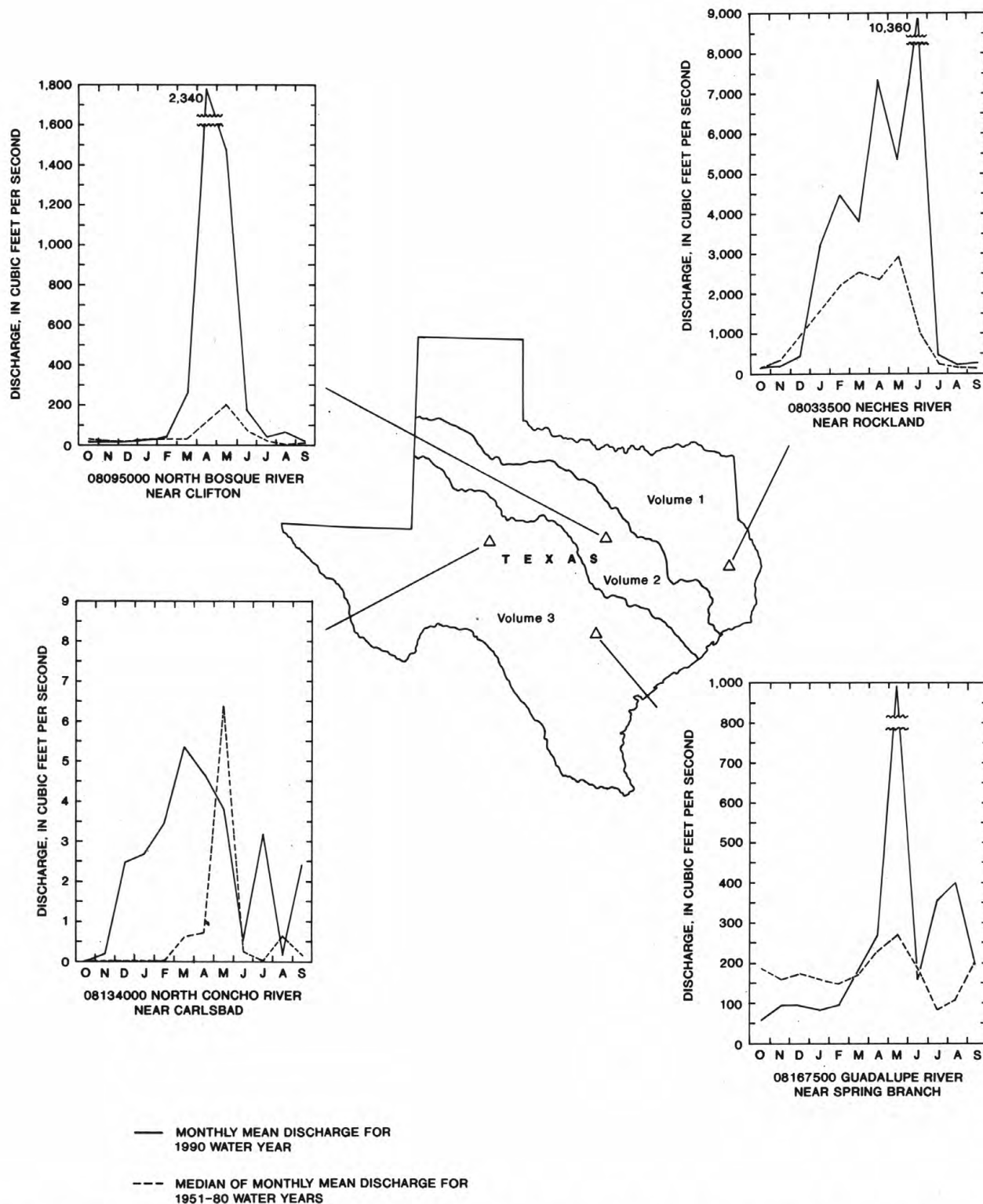


Figure 3.--Comparison of monthly mean discharges at four long-term hydrologic index gaging stations during the 1990 water year with median of the monthly mean discharges for 1951-80 water years.

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 1990 water year that began October 1, 1989,

and ended September 30, 1990. 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 indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of indentation shows which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

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

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

Records of Stage and Water Discharge

Records of stage and 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 deter-

mined 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 pub-

lished 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 ft³/s; to the nearest tenth between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures for more than 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

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

Other Records Available

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

Records of Surface-Water Quality

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

Classification of Records

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

A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station where random samples are collected to give better areal coverage to define water-quality conditions in the

river basin. A careful distinction needs to be made between "continuing records", as used in this report, and "continuous recordings," which refers to a continuous graph or a series of discrete values 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.

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)
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

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 (ft³/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 [(ft³/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 [(ft³/s)/mi²] 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 aquatic organisms. The formula for diversity index is:

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

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

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

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

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO₃).

Hydrologic 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 ($\mu\text{g/g}$) 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 ($\mu\text{g/L}$, $\mu\text{g/L}$) 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 adjusted to the number per area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

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

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

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

<u>Classification</u>	<u>Size (mm)</u>	<u>Method of analysis</u>
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 [$\text{mg C}/(\text{m}^2 \cdot \text{time})$] for periphyton and macrophytes and [$\text{mg C}/(\text{m}^3 \cdot \text{time})$] 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 [$\text{mg O}/(\text{m}^2 \cdot \text{time})$] for periphyton and macrophytes and [$\text{mg O}/(\text{m}^3 \cdot \text{time})$] 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 emerged 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, 1990, is called the "water year 1990."

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

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted aver-

age 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-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.
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- 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.
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- 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.
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- 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.
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SAN JACINTO RIVER MAIN STEM

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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, 3,910 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, 444,600 acre-ft Mar. 31 at 1200 hours (elevation, 201.67 ft); minimum, 393,700 acre-ft Dec. 24-29 (elevation, 199.20 ft).

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

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

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	409600	403700	399500	402100	433000	435600	441400	431100	426500	418700	414600	404100
2	409400	403700	399300	402100	433700	436700	437900	429900	426800	418500	414000	403700
3	409200	402700	399100	402500	433900	436700	435200	435200	427200	417900	413800	403900
4	409200	402500	398100	403300	432200	434500	432600	434500	427200	417500	413800	403900
5	409000	402700	397900	403700	430900	432400	430700	433000	426500	417900	413800	403500
6	408800	402700	397900	405100	431500	431500	432400	431300	426100	417100	413400	403300
7	409400	402700	398700	405900	431500	431300	432400	430300	425500	418300	412700	403300
8	408800	403300	398100	405900	431300	431300	431500	430500	425300	418100	411900	403300
9	408400	402700	397700	405900	433700	430900	430900	431100	425100	417500	411500	403900
10	407800	402500	397700	405900	433500	430300	431500	430100	424900	417100	410900	403300
11	407600	402300	397700	406100	433000	430700	431100	429200	424500	416900	410700	404300
12	407400	401900	396700	406500	431300	430900	430500	429600	423900	416700	410100	404100
13	407200	401900	396500	405700	431100	430700	430300	429800	423200	416000	409600	403900
14	407000	401700	396100	405700	430900	431800	431300	429200	423200	415400	408800	403700
15	406800	402100	396100	405700	432000	431300	430900	428800	423000	415000	408400	403500
16	406800	401500	395700	405900	431300	430700	430900	429200	422600	414400	408000	403900
17	406700	400500	395500	406100	430300	430700	431500	429200	422000	414800	407700	404500
18	405300	400700	395500	412700	431500	430300	431100	429400	422000	414600	407000	404300
19	404100	400900	395500	421600	432200	430700	430700	429200	421400	414800	406800	404700
20	403100	400900	394900	424100	431300	429800	430300	429200	420400	414200	406800	404500
21	402300	400700	395300	425100	435800	429000	430900	429600	419900	414000	406800	404300
22	402100	401700	394700	425100	438400	429000	430700	429800	419900	413800	406700	404500
23	402100	401700	394100	425700	437700	429000	430100	429400	419500	414200	406300	404100
24	401900	400700	393700	432800	435000	429900	429800	428800	418700	414200	406300	403500
25	401900	400700	393700	432200	431100	429400	429800	428400	418500	414000	406100	402900
26	401500	400700	393700	431300	430300	429000	433900	428200	420400	413800	405700	402300
27	401300	401700	393700	432000	430700	428200	434100	428000	420600	413800	405300	402300
28	401100	401100	393700	437300	434500	429200	433200	428200	419700	413600	404500	402100
29	402300	400100	394100	436700	---	435400	432600	426800	419100	412900	403900	401700
30	404700	399900	402100	434500	---	442900	432200	427000	418900	415400	403700	401500
31	403900	---	402100	431800	---	444100	---	426500	---	415200	403100	---
MAX	409600	403700	402100	437300	438400	444100	441400	435200	427200	418700	414600	404700
MIN	401100	399900	393700	402100	430300	428200	429800	426500	418500	412900	403100	401500
(↑)	199.71	199.51	199.62	201.07	201.20	201.65	201.09	200.82	200.45	200.27	199.67	199.59
(Φ)	-6200	-4000	+2200	+29700	+2700	+9600	-11900	-5700	-7600	-3700	-12100	-1600

CAL YR 1989 MAX 445400 MIN 337100 (Φ) +62500
WTR YR 1990 MAX 444100 MIN 393700 (Φ) -8500

(↑) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.

SAN JACINTO RIVER MAIN STEM

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 1989 TO SEPTEMBER 1990

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)	
JAN											
30...	1106	1.00	260	8.0	13.0	1.13	10.4	98	96	11	
30...	1108	10.0	260	7.9	12.5	--	9.8	92	--	--	
30...	1110	20.0	260	7.8	12.5	--	9.7	91	--	--	
30...	1112	25.0	260	7.8	12.5	--	9.7	91	--	--	
30...	1114	30.0	260	7.8	12.5	--	9.6	90	--	--	
30...	1116	40.0	260	7.8	12.5	--	9.5	89	--	--	
30...	1118	54.0	260	7.8	12.5	--	9.4	88	95	13	
MAY											
01...	1025	1.00	250	8.1	23.0	1.33	8.2	96	87	8	
01...	1027	5.00	250	7.9	22.5	--	8.1	94	--	--	
01...	1029	15.0	250	7.6	22.0	--	6.0	69	--	--	
01...	1031	20.0	250	7.5	22.0	--	6.0	69	--	--	
01...	1033	25.0	250	7.4	21.5	--	5.0	57	--	--	
01...	1035	35.0	250	7.3	20.5	--	3.4	38	--	--	
01...	1037	40.0	250	7.3	20.5	--	2.7	30	--	--	
01...	1039	50.0	255	7.5	20.0	--	1.5	17	87	6	
AUG											
07...	1100	1.00	255	8.5	30.0	0.93	7.3	96	90	6	
07...	1102	5.00	255	8.5	30.0	--	7.3	96	--	--	
07...	1104	10.0	255	8.5	29.5	--	7.2	94	--	--	
07...	1106	20.0	255	8.4	29.5	--	7.0	91	--	--	
07...	1108	25.0	255	8.3	29.5	--	7.0	91	--	--	
07...	1110	30.0	260	7.6	29.0	--	2.9	37	--	--	
07...	1112	35.0	265	7.1	28.0	--	0	0	--	--	
07...	1114	40.0	275	7.1	26.5	--	0	0	--	--	
07...	1116	45.0	295	7.0	24.5	--	0	0	--	--	
07...	1118	80.0	300	7.0	24.0	--	0	0	95	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)
JAN											
30...	34	2.6	15	0.7	3.5	85	7.0	25	0.10	6.4	
30...	--	--	--	--	--	--	--	--	--	--	
30...	--	--	--	--	--	--	--	--	--	--	
30...	--	--	--	--	--	--	--	--	--	--	
30...	--	--	--	--	--	--	--	--	--	--	
30...	34	2.4	14	0.6	2.6	82	7.0	25	--	6.3	
MAY											
01...	31	2.3	14	0.7	2.7	79	6.4	21	0.30	2.2	
01...	--	--	--	--	--	--	--	--	--	--	
01...	--	--	--	--	--	--	--	--	--	--	
01...	--	--	--	--	--	--	--	--	--	--	
01...	--	--	--	--	--	--	--	--	--	--	
01...	--	--	--	--	--	--	--	--	--	--	
01...	31	2.3	14	0.7	2.7	81	6.5	21	0.30	3.8	
AUG											
07...	32	2.4	14	0.6	3.4	84	9.0	26	<0.10	3.4	
07...	--	--	--	--	--	--	--	--	--	--	
07...	--	--	--	--	--	--	--	--	--	--	
07...	--	--	--	--	--	--	--	--	--	--	
07...	--	--	--	--	--	--	--	--	--	--	
07...	--	--	--	--	--	--	--	--	--	--	
07...	--	--	--	--	--	--	--	--	--	--	
07...	--	--	--	--	--	--	--	--	--	--	
07...	34	2.4	14	0.6	3.6	110	<1.0	24	<0.10	8.9	

SAN JACINTO RIVER MAIN STEM
08067600 LAKE CONROE NEAR CONROE, TX--Continued

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302127095335501 - LAKE CONROE SITE AC--Continued
WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
30...	145	--	--	0.100	--	--	0.90	0.030	5	<1
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	0.100	--	--	0.90	0.030	20	10
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	140	--	--	0.100	--	--	1.0	0.020	6	3
MAY										
01...	127	--	0.010	<0.100	<0.010	--	1.4	0.030	12	<1
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	--	0.090	0.010	0.100	0.020	0.58	0.60	0.020	<10	<10
01...	--	--	--	--	--	--	--	--	--	--
01...	--	0.190	0.010	0.200	<0.010	--	0.60	0.020	20	<10
01...	--	--	--	--	--	--	--	--	--	--
01...	130	0.190	0.010	0.200	<0.010	--	0.60	0.020	20	6
AUG										
07...	141	--	<0.010	<0.100	0.020	0.98	1.0	0.030	13	16
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	<0.010	<0.100	0.010	1.1	1.1	0.030	<10	<10
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	<0.010	<0.100	0.220	1.1	1.3	0.040	120	800
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	153	--	<0.010	<0.100	2.10	0.50	2.6	0.290	1500	4400

302132095333701 - LAKE CONROE SITE AL
WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN								
30...	1150	1.00	260	8.0	13.0	1.12	10.4	99
30...	1152	5.00	260	7.9	12.5	--	10.1	95
30...	1154	10.0	260	7.9	12.5	--	9.9	93
30...	1156	15.0	260	7.8	12.5	--	9.8	92
30...	1158	20.0	260	7.8	12.5	--	9.8	92
30...	1200	30.0	260	7.8	12.5	--	9.8	92
30...	1202	40.0	260	7.8	12.5	--	9.7	91
30...	1204	54.0	260	7.9	12.5	--	9.6	90
MAY								
01...	1104	1.00	250	8.1	23.5	1.27	8.4	99
01...	1106	5.00	250	8.0	23.0	--	8.4	98
01...	1108	15.0	250	7.5	22.0	--	5.9	68
01...	1110	25.0	250	7.4	21.5	--	5.3	60
01...	1112	35.0	250	7.3	21.0	--	3.5	39
01...	1114	45.0	255	7.3	20.0	--	3.5	39
01...	1116	55.0	255	7.5	20.0	--	0.8	9
AUG								
07...	1150	1.00	255	8.5	30.0	0.93	7.6	100
07...	1152	5.00	255	8.5	30.0	--	7.4	97
07...	1154	10.0	255	8.4	29.5	--	7.0	91
07...	1156	20.0	255	8.1	29.5	--	6.8	89
07...	1158	30.0	260	7.4	29.0	--	2.7	35
07...	1200	40.0	275	7.2	26.5	--	0	0
07...	1202	50.0	300	7.1	24.0	--	0	0
07...	1204	62.0	340	7.0	22.0	--	0	0

SAN JACINTO RIVER MAIN STEM
08067600 LAKE CONROE NEAR CONROE, TX--Continued

302245095365301 - LAKE CONROE SITE BC
WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN								
30...	1225	1.00	255	8.0	13.0	1.02	10.4	99
30...	1227	5.00	255	8.0	13.0	--	10.3	98
30...	1229	10.0	255	7.9	12.5	--	10.1	95
30...	1231	15.0	260	7.8	12.5	--	9.7	91
30...	1233	20.0	260	7.8	12.5	--	9.2	86
30...	1235	29.0	260	7.8	12.5	--	9.0	85
MAY								
01...	1137	1.00	250	8.4	24.5	1.47	8.9	107
01...	1139	5.00	250	8.3	24.5	--	8.8	106
01...	1141	15.0	250	7.9	23.5	--	7.5	88
01...	1143	20.0	250	7.7	22.5	--	6.3	73
01...	1145	28.0	250	7.6	22.5	--	4.6	53
AUG								
07...	1230	1.00	255	8.6	30.5	0.85	7.8	104
07...	1232	5.00	255	8.5	30.0	--	7.8	103
07...	1234	10.0	255	8.4	30.0	--	6.8	90
07...	1236	15.0	255	8.4	30.0	--	6.9	91
07...	1238	20.0	255	8.3	30.0	--	6.9	91
07...	1240	25.0	260	8.0	29.5	--	4.6	60
07...	1242	29.0	265	7.5	29.0	--	0.1	1

302323095341201 - LAKE CONROE SITE CC
WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN								
30...	1250	1.00	260	7.9	13.5	1.09	10.2	98
30...	1252	5.00	260	7.9	13.0	--	10.4	99
30...	1254	10.0	260	7.9	12.5	--	10.1	95
30...	1256	20.0	260	7.8	12.5	--	9.7	91
30...	1258	30.0	260	7.8	12.5	--	9.6	90
30...	1300	35.0	260	7.8	12.5	--	9.6	90
30...	1302	40.0	260	7.8	12.5	--	9.6	90
30...	1304	52.0	260	7.9	12.5	--	9.6	90
MAY								
01...	1222	1.00	245	8.2	24.0	1.79	8.6	102
01...	1224	5.00	245	8.2	23.5	--	8.6	101
01...	1226	10.0	245	8.2	23.5	--	8.6	101
01...	1228	20.0	245	7.9	23.0	--	7.9	92
01...	1230	30.0	245	7.5	22.0	--	4.8	55
01...	1232	40.0	250	7.5	21.0	--	2.5	28
01...	1234	52.0	250	7.6	20.5	--	1.0	11
AUG								
07...	1310	1.00	255	8.6	30.5	0.87	8.1	108
07...	1312	5.00	255	8.5	30.0	--	8.0	105
07...	1314	10.0	255	8.4	29.5	--	7.0	91
07...	1316	20.0	255	8.2	29.5	--	6.4	84
07...	1318	25.0	255	8.1	29.5	--	6.2	81
07...	1320	30.0	260	7.5	29.0	--	3.2	41
07...	1322	40.0	275	7.2	26.5	--	0.2	2
07...	1324	50.0	300	7.2	24.5	--	0.1	1

SAN JACINTO RIVER MAIN STEM

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08067600 LAKE CONROE NEAR CONROE, TX--Continued

302320095334001 - LAKE CONROE SITE CL

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN								
30...	1320	1.00	260	7.9	14.0	1.27	10.2	99
30...	1322	5.00	260	7.9	13.5	--	10.2	98
30...	1324	10.0	260	7.9	12.5	--	10.2	96
30...	1326	20.0	260	7.9	12.5	--	10.2	96
30...	1328	30.0	260	7.8	12.5	--	9.6	90
30...	1330	42.0	260	7.8	12.5	--	9.5	89
MAY								
01...	1248	1.00	245	8.3	24.0	1.69	9.1	108
01...	1250	5.00	245	8.3	24.0	--	9.2	109
01...	1252	15.0	245	8.1	23.5	--	8.4	99
01...	1254	20.0	245	7.9	23.0	--	8.0	93
01...	1256	30.0	250	7.6	22.0	--	5.4	62
01...	1258	42.0	250	7.7	21.0	--	3.1	35
AUG								
07...	1340	1.00	255	8.6	30.0	0.90	8.1	107
07...	1342	5.00	255	8.5	29.5	--	7.7	100
07...	1344	10.0	255	8.3	29.5	--	6.8	89
07...	1346	15.0	255	8.2	29.5	--	6.4	84
07...	1348	20.0	255	8.1	29.5	--	6.0	78
07...	1350	25.0	260	7.9	29.5	--	5.4	70
07...	1352	30.0	260	7.4	29.0	--	2.8	36
07...	1354	35.0	265	7.3	27.5	--	0.1	1
07...	1356	45.0	290	7.3	26.0	--	0.1	1

302448095374101 - LAKE CONROE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN								
30...	1035	1.00	245	7.7	13.0	1.04	9.9	94
30...	1037	10.0	245	7.7	13.0	--	9.8	93
30...	1039	20.0	245	7.5	12.5	--	9.2	86
30...	1041	30.0	245	7.5	12.5	--	8.6	81
MAY								
01...	0955	1.00	245	8.3	25.0	1.23	8.5	103
01...	0957	5.00	245	8.2	25.0	--	8.5	103
01...	0959	10.0	245	7.9	24.0	--	8.3	99
01...	1001	20.0	245	7.4	23.0	--	5.6	65
01...	1003	27.0	250	7.2	22.0	--	2.0	23
AUG								
07...	1025	1.00	255	8.6	30.0	0.85	7.1	93
07...	1027	5.00	255	8.6	30.0	--	7.1	93
07...	1029	10.0	255	8.5	30.0	--	6.9	91
07...	1031	15.0	255	8.5	30.0	--	6.9	91
07...	1033	20.0	255	8.2	30.0	--	4.8	63
07...	1035	27.0	265	7.2	29.0	--	0	0

SAN JACINTO RIVER MAIN STEM
08067600 LAKE CONROE NEAR CONROE, TX--Continued

302607095360901 - LAKE CONROE SITE EC
WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)	
JAN											
30...	1347	1.00	250	7.9	13.5	1.00	10.2	98	95	12	
30...	1349	5.00	250	7.8	13.0	--	10.0	95	--	--	
30...	1351	10.0	250	7.8	13.0	--	9.8	93	--	--	
30...	1353	15.0	255	7.8	12.5	--	9.6	90	--	--	
30...	1355	20.0	255	7.8	12.5	--	9.6	90	--	--	
30...	1357	25.0	255	7.8	12.5	--	9.6	90	--	--	
30...	1359	30.0	255	7.7	12.5	--	9.3	88	--	--	
30...	1401	40.0	255	7.7	12.5	--	9.2	87	95	11	
MAY											
01...	1325	1.00	240	8.5	24.5	1.54	9.0	108	84	6	
01...	1327	10.0	240	8.3	24.0	--	8.5	101	--	--	
01...	1329	20.0	240	8.2	24.0	--	8.2	98	--	--	
01...	1331	30.0	240	8.0	24.0	--	7.4	88	--	--	
01...	1333	40.0	245	7.5	22.5	--	2.2	25	84	5	
AUG											
07...	1410	1.00	255	8.4	30.0	0.79	7.1	93	90	6	
07...	1412	5.00	255	8.2	29.0	--	6.1	79	--	--	
07...	1414	10.0	255	8.1	29.0	--	5.7	74	--	--	
07...	1416	15.0	255	8.0	29.0	--	5.6	72	--	--	
07...	1418	20.0	255	7.8	29.0	--	5.0	65	--	--	
07...	1420	25.0	260	7.7	29.0	--	4.4	57	--	--	
07...	1422	30.0	270	7.2	27.0	--	0	0	--	--	
07...	1424	39.0	275	7.2	27.0	--	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 CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN											
30...	34	2.5	14	0.6	2.6	83	7.0	25	--	--	6.9
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	34	2.4	14	0.6	2.5	84	7.0	25	--	--	6.9
MAY											
01...	30	2.2	13	0.6	2.8	78	6.3	21	0.40	--	1.5
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	30	2.3	13	0.6	2.7	79	6.4	21	0.30	--	3.5
AUG											
07...	32	2.5	14	0.6	3.3	84	8.6	21	<0.10	--	4.1
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	33	2.4	14	0.6	3.3	97	2.3	24	<0.10	--	5.1

SAN JACINTO RIVER MAIN STEM

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08067600 LAKE CONROE NEAR CONROE, TX--Continued

302607095360901 - LAKE CONROE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
30...	142	--	0.200	--	--	0.90	0.020	14	2
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	142	--	0.100	--	--	0.90	0.030	8	9
MAY									
01...	124	0.010	<0.100	<0.010	--	0.80	0.030	10	4
01...	--	--	--	--	--	--	--	--	--
01...	--	0.010	<0.100	0.010	0.69	0.70	0.020	10	10
01...	--	--	--	--	--	--	--	--	--
01...	127	0.020	<0.100	0.120	0.68	0.80	0.040	20	76
AUG									
07...	136	<0.010	<0.100	0.030	0.87	0.90	0.040	<3	25
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	<0.010	<0.100	0.010	0.99	1.0	0.020	30	120
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	145	<0.010	<0.100	0.880	1.0	1.9	0.120	420	2000

302714095372201 - LAKE CONROE SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN								
30...	1420	1.00	240	7.9	14.5	0.87	10.3	101
30...	1422	5.00	250	7.8	13.5	--	10.5	101
30...	1424	10.0	245	7.7	13.0	--	9.5	90
30...	1426	15.0	240	7.6	13.0	--	9.1	87
30...	1428	24.0	250	7.6	13.0	--	7.6	72
MAY								
01...	1343	1.00	235	8.5	26.0	1.31	8.9	110
01...	1345	5.00	235	8.4	25.5	--	9.0	110
01...	1347	10.0	235	8.2	24.5	--	8.4	101
01...	1349	22.0	235	7.7	23.5	--	3.2	38
AUG								
07...	1445	1.00	250	8.7	30.5	0.70	8.5	113
07...	1447	5.00	250	8.6	30.5	--	8.2	109
07...	1449	10.0	255	8.3	30.0	--	6.8	90
07...	1450	15.0	260	7.7	29.5	--	3.6	47
07...	1452	21.0	275	7.5	28.5	--	0.1	1

SAN JACINTO RIVER MAIN STEM

08067600 LAKE CONROE NEAR CONROE, TX--Continued

303129095360501 - LAKE CONROE SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	
JAN											
30...	1500	1.00	170	7.4	15.0	0.40	9.7	96	52	11	
30...	1502	5.00	170	7.2	14.0	--	8.2	80	--	--	
30...	1504	10.0	170	7.2	13.5	--	7.7	74	--	--	
30...	1506	15.0	170	7.2	13.5	--	7.7	74	--	--	
30...	1508	20.0	170	7.2	13.5	--	7.6	73	--	--	
30...	1510	25.0	170	7.3	13.5	--	7.6	73	--	--	
30...	1512	30.0	170	7.4	13.5	--	7.6	73	52	-- 9	
MAY											
01...	1425	1.00	210	8.1	27.0	0.56	8.0	101	69	7	
01...	1427	5.00	205	7.7	27.0	--	7.6	96	--	--	
01...	1429	10.0	200	7.2	25.5	--	5.2	64	--	--	
01...	1431	15.0	200	7.2	25.0	--	3.2	39	--	--	
01...	1433	20.0	200	7.2	24.5	--	2.9	35	--	--	
01...	1435	26.0	200	7.2	24.5	--	2.9	35	63	13	
AUG											
07...	1520	1.00	255	8.6	31.0	0.52	7.6	102	85	6	
07...	1522	5.00	255	8.2	30.5	--	6.2	82	--	--	
07...	1524	10.0	255	7.8	30.0	--	4.1	54	--	--	
07...	1526	15.0	255	7.8	30.0	--	3.6	47	--	--	
07...	1528	20.0	255	7.6	30.0	--	2.8	37	--	--	
07...	1530	25.0	255	7.6	30.0	--	2.5	33	--	--	
07...	1532	29.0	255	7.6	30.0	--	2.0	26	88	8	
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- LITY 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 SI02)
JAN											
30...	18	1.7	11	0.7	3.0	41	10	19	--	--	12
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	18	1.8	11	0.7	3.0	43	10	20	--	--	12
MAY											
01...	24	2.1	12	0.6	2.8	62	7.1	21	<0.10	--	0.80
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	22	2.0	13	0.7	2.8	50	8.7	23	<0.10	--	6.3
AUG											
07...	30	2.4	16	0.8	3.5	79	8.9	26	<0.10	--	7.2
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	31	2.5	15	0.7	3.3	80	8.7	27	<0.10	--	6.1

SAN JACINTO RIVER MAIN STEM
08067600 LAKE CONROE NEAR CONROE, TX--Continued

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303129095360501 - LAKE CONROE SITE GC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
30...	99	--	0.200	--	--	1.3	0.180	62	8
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	102	--	0.200	--	--	0.90	0.140	89	13
MAY									
01...	107	0.020	<0.100	<0.010	--	0.80	0.070	57	17
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	0.040	<0.100	0.090	1.0	1.1	0.150	110	50
01...	--	--	--	--	--	--	--	--	--
01...	108	0.040	<0.100	0.160	0.84	1.0	0.190	79	47
AUG									
07...	141	<0.010	<0.100	0.030	1.2	1.2	0.090	10	5
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	<0.010	<0.100	0.020	1.1	1.1	0.090	<10	160
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	142	0.020	<0.100	0.130	1.3	1.4	0.100	4	130

SAN JACINTO RIVER MAIN STEM

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 mi².

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 ft³/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.--No estimated daily discharge. Records fair. Daily discharges below 10 ft³/s are not published.

AVERAGE DISCHARGE.--17 years (water years 1973-89), 226 ft³/s (163,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,780 ft³/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 State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,210 ft³/s Apr. 1 at 1100 hours to Apr. 2 at 2200 hours (gage height, 27.09 ft).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	550	838	2210	438	---	---	---	---
2	---	---	---	---	697	919	2210	252	---	---	---	---
3	---	---	---	---	1010	879	1800	508	---	---	---	---
4	---	---	---	---	537	907	1330	693	---	---	---	---
5	---	---	---	---	209	994	881	735	---	---	---	---
6	---	---	---	---	23	567	626	492	---	---	---	---
7	---	---	---	---	---	344	668	185	---	---	---	---
8	---	---	---	---	---	335	709	95	---	---	---	---
9	---	---	---	---	---	330	487	---	---	---	---	---
10	---	---	---	---	189	214	201	---	---	---	---	---
11	---	---	---	---	278	12	19	---	---	---	---	---
12	---	---	---	---	394	17	---	---	---	---	---	---
13	---	---	---	---	265	207	---	---	---	---	---	---
14	---	---	---	---	254	227	111	---	---	---	---	---
15	---	---	---	---	371	334	186	---	---	---	---	---
16	---	---	---	---	489	227	13	---	---	---	---	---
17	---	---	---	---	357	115	---	---	---	---	---	---
18	---	---	---	---	288	---	---	---	---	---	---	---
19	---	---	---	---	557	---	---	---	---	---	---	---
20	---	---	---	---	689	---	---	---	---	---	---	---
21	---	---	---	---	1040	---	---	---	---	---	---	---
22	---	---	---	---	1570	---	---	---	---	---	---	---
23	---	---	---	---	1540	---	---	---	---	---	---	---
24	---	---	---	371	1330	---	---	---	---	---	---	---
25	---	---	---	613	1470	---	---	---	---	---	---	---
26	---	---	---	58	565	---	240	---	---	---	---	---
27	---	---	---	11	18	---	653	---	---	---	---	---
28	---	---	---	218	142	---	641	---	---	---	---	---
29	---	---	---	871	---	588	598	---	---	---	---	---
30	---	---	38	910	---	1730	448	---	---	---	---	---
31	---	---	---	849	---	1980	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---
CAL YR 1989	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---	---	---
WTR YR 1990	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---	---	---

SAN JACINTO RIVER MAIN STEM

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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 mi².

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 ft³/s (345,600 acre-ft/yr); 18 years (water years 1973-90) regulated, 510 ft³/s (369,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 110,000 ft³/s Nov. 25, 1940 (gage height, 30.85 ft), present datum, from rating curve extended above 43,000 ft³/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 ft³/s, from rating curve as explained above.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,880 ft³/s Apr. 1 at 1900 hours (gage height, 18.39 ft); minimum daily, 15 ft³/s Sept. 29-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	35	26	388	975	1880	5330	624	38	25	29	16
2	21	28	27	119	1180	2050	4710	493	37	24	24	18
3	20	24	26	81	1290	1940	2900	729	36	23	22	22
4	21	23	26	75	1660	1800	1540	2930	35	22	21	29
5	21	23	25	54	1010	1530	1210	1280	43	23	20	19
6	23	27	26	110	431	931	692	825	45	30	20	18
7	34	27	26	133	243	575	764	433	39	28	20	18
8	24	24	27	117	163	503	720	267	35	32	19	18
9	21	22	29	101	135	468	706	193	37	30	19	23
10	20	21	29	73	234	421	452	109	42	25	19	34
11	20	21	28	57	544	185	258	89	32	24	20	22
12	20	22	27	50	574	145	133	79	32	29	18	22
13	20	24	32	41	480	273	105	73	33	46	18	20
14	19	25	30	38	355	322	166	68	38	30	18	19
15	19	26	28	37	388	472	351	63	36	27	18	18
16	19	28	27	36	592	353	222	58	29	26	18	17
17	19	31	31	32	513	308	108	54	27	26	18	34
18	19	26	30	39	349	142	91	77	27	26	18	39
19	22	33	31	216	640	106	85	198	27	26	17	27
20	22	50	30	1160	1040	94	75	95	26	26	17	27
21	21	35	28	1580	1420	82	69	71	25	26	17	22
22	20	36	28	859	2810	76	64	61	25	24	23	19
23	20	44	30	301	3130	71	60	58	24	28	21	18
24	20	36	33	997	3710	67	57	57	23	29	21	17
25	20	31	29	2120	3370	65	54	52	23	27	20	16
26	21	29	27	1720	1610	64	137	48	34	25	18	16
27	21	28	27	377	404	59	974	45	35	24	17	16
28	21	27	27	253	294	79	867	43	28	22	18	16
29	24	26	33	1500	---	371	920	42	26	21	17	15
30	51	25	168	2060	---	1860	814	41	25	22	17	15
31	72	---	193	1940	---	3000	---	40	---	32	16	---
TOTAL	736	857	1184	16664	29544	20292	24634	9295	962	828	598	630
MEAN	23.7	28.6	38.2	538	1055	655	821	300	32.1	26.7	19.3	21.0
MAX	72	50	193	2120	3710	3000	5330	2930	45	46	29	39
MIN	19	21	25	32	135	59	54	40	23	21	16	15
AC-FT	1460	1700	2350	33050	58600	40250	48860	18440	1910	1640	1190	1250
CAL YR 1989	TOTAL	101366	MEAN	278	MAX	5930	MIN	17	AC-FT	201100		
WTR YR 1990	TOTAL	106224	MEAN	291	MAX	5330	MIN	15	AC-FT	210700		

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 (discontinued).

WATER TEMPERATURE: October 1961 to September 1990 (discontinued).

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.--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, 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.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 970 microsiemens Aug. 17; minimum, 108 microsiemens May 4.

WATER TEMPERATURE: Maximum, 32.5°C June 22, 23, Aug. 5, 26; minimum, 2.0°C Dec. 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	COLIFORM, FECA, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI, KF AGAR (COLS. PER 100 ML)
NOV 28...	0935	27	436	7.6	18.0	10	9.8	103	1.1	60	130
JAN 18...	0945	33	448	7.5	19.0	--	9.2	98	1.4	--	--
MAR 13...	1020	298	297	6.6	20.0	31	7.8	85	1.4	84	3600
MAY 22...	0955	61	345	7.4	26.5	--	6.5	81	1.4	--	--
JUL 18...	0833	25	480	7.5	26.0	12	6.7	82	1.4	170	210
AUG 15...	0810	17	720	7.8	26.5	7.8	6.2	77	1.7	700	220

DATE	HARDNESS TOTAL (MG/L AS CAC03)	HARDNESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY, WAT DIS TOT IT FIELD (MG/L AS CAC03)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)
NOV 28...	73	0	23	3.6	58	3	5.7	90	24	54	0.60
JAN 18...	80	0	26	3.6	56	3	4.4	82	27	63	0.30
MAR 13...	90	14	31	3.0	21	1	3.1	75	16	31	0.40
MAY 22...	76	4	25	3.2	36	2	3.7	72	18	42	0.30
JUL 18...	84	0	27	3.9	62	3	5.7	96	28	62	0.40
AUG 15...	93	0	29	4.8	110	5	7.1	108	71	94	0.40

DATE	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DIS-SOLVED (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)
NOV 28...	22	271	267	3.48	3.49	0.020	0.010	3.50	3.50	0.040
JAN 18...	21	--	250	1.77	--	0.030	--	1.80	--	0.090
MAR 13...	15	196	169	0.380	0.390	0.020	0.010	0.400	0.400	0.030
MAY 22...	19	--	190	1.37	--	0.030	--	1.40	--	0.060
JUL 18...	22	288	288	3.56	3.48	0.040	0.020	3.60	3.50	0.050
AUG 15...	24	416	433	4.95	4.95	0.050	0.050	5.00	5.00	0.100

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 28...	0.030	0.66	0.70	1.10	0.990	1.00	3.1	26	1.9	70
JAN 18...	--	0.61	0.70	0.840	--	--	--	--	--	--
MAR 13...	0.020	0.37	0.40	0.220	0.120	0.120	0.37	61	49	96
MAY 22...	--	0.94	1.0	0.550	--	--	--	--	--	--
JUL 18...	0.030	0.75	0.80	1.30	1.20	1.20	3.7	25	1.7	97
AUG 15...	0.080	1.1	1.2	2.20	2.10	1.80	5.5	20	0.92	93
DATE	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)	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...	30	1	68	<0.5	<1.0	<1	<3	1	65	<1
JAN 18...	--	--	--	--	--	--	--	--	--	--
MAR 13...	100	1	130	<0.5	1.0	<5	<3	<10	250	<10
MAY 22...	--	--	--	--	--	--	--	--	--	--
JUL 18...	20	1	88	<0.5	2.0	<1	<3	1	44	<1
AUG 15...	20	2	82	<0.5	<1.0	<1	<3	2	35	<1
DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 28...	13	48	<0.1	<10	1	<1	<1.0	240	<6	11
JAN 18...	--	--	--	--	--	--	--	--	--	--
MAR 13...	<4	37	<0.1	<10	<10	<1	<1.0	150	<6	10
MAY 22...	--	--	--	--	--	--	--	--	--	--
JUL 18...	15	69	<0.1	<10	2	<1	<1.0	290	<6	11
AUG 15...	16	51	<0.1	<10	1	<1	<1.0	380	<6	16

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	736	578	325	645	77	154	42	84	80
NOV. 1989	857	519	294	680	69	160	34	79	90
DEC. 1989	1184	494	279	893	66	210	33	105	84
JAN. 1990	16664	302	175	7860	40	1780	14	632	79
FEB. 1990	29544	226	131	10500	29	2340	9.1	728	66
MAR. 1990	20292	229	133	7310	30	1640	9.3	510	67
APR. 1990	24634	179	105	6950	23	1540	6.4	428	56
MAY 1990	9295	214	125	3130	28	700	8.8	220	62
JUNE 1990	962	488	277	719	65	168	31	80	90
JULY 1990	828	573	321	719	77	171	42	94	79
AUG. 1990	598	771	425	687	100	169	68	111	50
SEPT 1990	630	789	434	738	110	182	71	121	45
TOTAL	106224	**	**	40800	**	9210	**	3190	**
WTD.AVG.	291	246	142	**	32	**	11	**	66

SAN JACINTO RIVER MAIN STEM

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

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	480	471	476	487	412	461	477	472	474	289	220	241
2	474	469	472	527	481	513	485	464	476	326	272	294
3	501	465	473	514	504	508	464	434	451	402	325	349
4	519	504	511	534	503	521	432	427	430	401	361	376
5	522	505	514	587	521	574	464	428	437	471	403	421
6	538	394	515	547	510	542	472	465	468	498	417	440
7	491	409	458	517	505	513	473	470	471	433	402	417
8	494	482	486	522	494	509	473	465	469	407	393	400
9	494	476	485	614	482	517	466	461	463	446	405	419
10	636	491	584	606	579	593	462	457	459	503	453	470
11	729	632	696	580	524	557	459	454	457	548	483	505
12	723	703	713	559	497	535	513	450	462	548	495	520
13	721	705	715	554	508	535	532	506	511	524	489	503
14	728	714	720	514	468	496	567	524	532	539	474	512
15	730	716	723	546	461	484	656	563	592	500	431	473
16	742	711	728	543	509	524	656	592	630	452	421	438
17	739	704	710	518	489	505	589	470	527	460	442	452
18	741	734	738	557	482	491	582	487	513	489	388	465
19	739	728	732	564	554	559	584	559	569	392	311	324
20	737	712	728	554	539	547	630	598	620	307	268	285
21	710	703	707	545	540	542	672	601	621	285	267	273
22	726	701	713	541	532	537	675	654	667	305	286	294
23	726	701	712	532	516	521	662	653	658	345	308	331
24	700	666	685	516	511	513	684	650	654	324	286	297
25	663	584	613	517	510	513	705	681	687	291	286	288
26	593	570	581	524	514	518	705	631	669	303	283	290
27	569	554	560	514	490	504	713	652	682	346	304	324
28	578	554	566	494	476	488	701	618	666	356	318	342
29	571	520	543	492	476	482	734	603	647	316	301	305
30	530	400	459	478	473	474	763	186	459	306	295	302
31	410	389	400	---	---	---	377	225	271	295	287	290
MONTH	742	389	604	614	412	519	763	186	538	548	220	375
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	306	295	302	222	157	184	143	129	136	222	194	204
2	295	286	289	214	186	199	158	143	149	231	196	208
3	292	287	290	238	215	230	175	158	166	234	112	199
4	300	292	295	236	227	232	198	176	186	160	108	134
5	300	296	298	232	226	229	200	197	198	200	158	181
6	310	298	303	246	231	237	205	191	198	266	199	229
7	325	310	318	257	243	250	192	174	182	292	260	272
8	344	326	335	261	253	258	180	175	178	326	299	310
9	360	345	354	264	255	259	188	176	179	360	322	339
10	357	313	342	272	256	262	223	190	210	353	322	332
11	310	299	301	341	276	300	241	222	228	371	329	344
12	302	299	300	340	308	329	256	241	247	463	365	411
13	302	297	300	308	265	289	274	256	263	492	318	405
14	302	300	301	286	265	271	279	266	273	381	341	367
15	302	288	297	290	242	255	272	261	268	405	355	382
16	287	268	276	287	270	279	281	258	270	433	374	398
17	268	263	266	315	280	293	314	279	290	478	426	451
18	269	264	267	387	320	363	328	313	320	426	294	378
19	268	241	257	400	389	391	327	320	323	326	189	215
20	240	226	233	427	403	421	367	323	346	284	225	250
21	226	198	220	420	415	418	382	365	375	325	282	301
22	194	174	180	420	415	417	368	348	357	379	322	350
23	178	172	175	431	416	423	379	349	360	397	355	373
24	173	172	172	444	430	438	411	374	394	387	340	372
25	171	166	169	448	424	432	435	413	423	390	371	381
26	171	166	169	465	449	457	443	365	435	419	382	403
27	181	171	176	502	466	478	336	186	221	407	349	375
28	190	181	186	504	368	463	197	181	187	417	384	396
29	---	---	---	365	201	295	206	189	200	444	405	421
30	---	---	---	223	187	199	226	202	214	480	449	465
31	---	---	---	206	139	174	---	---	---	509	478	496
MONTH	360	166	263	504	139	314	443	129	259	509	108	334

SAN JACINTO RIVER MAIN STEM

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

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	534	500	509	495	454	477	932	623	790	815	719	772
2	590	539	572	498	460	480	---	---	e855	841	800	831
3	576	543	563	489	466	481	---	---	e860	834	780	807
4	540	479	503	480	385	459	---	---	e820	---	---	e770
5	489	456	481	491	432	456	---	---	e780	---	---	e740
6	451	396	420	468	381	420	---	---	e750	866	695	716
7	556	390	456	523	430	480	---	---	e730	889	718	807
8	562	525	546	495	344	411	---	---	e700	---	---	e840
9	528	503	518	450	381	409	721	662	687	---	---	e870
10	513	457	483	485	455	476	785	701	742	923	895	909
11	508	475	493	636	499	519	800	680	741	966	889	919
12	571	465	492	861	314	679	882	651	746	961	883	927
13	612	459	551	508	426	459	813	612	643	902	807	852
14	542	400	467	475	382	408	870	748	794	812	724	772
15	523	350	420	533	472	495	830	720	772	751	714	727
16	493	400	433	565	541	549	945	760	852	772	704	727
17	498	401	452	552	530	541	970	803	864	849	801	822
18	468	453	462	534	512	522	872	821	837	794	748	772
19	574	461	516	597	524	571	848	789	821	---	---	e750
20	591	567	581	745	604	669	892	800	852	---	---	e730
21	572	454	509	658	641	649	794	676	714	---	---	e705
22	560	492	522	832	664	725	792	723	757	---	---	e740
23	557	480	511	707	698	703	774	701	741	---	---	e780
24	491	448	468	761	671	692	772	613	690	---	---	e805
25	479	448	464	769	587	664	677	626	655	---	---	e790
26	507	441	484	748	559	634	763	677	746	---	---	e760
27	422	364	378	796	623	715	774	755	764	---	---	e730
28	447	392	434	785	721	748	837	745	809	---	---	e685
29	488	436	470	753	695	715	812	787	800	---	---	e710
30	505	477	496	934	725	837	841	737	767	---	---	e730
31	---	---	---	936	768	872	863	789	836	---	---	---
MONTH	612	350	488	936	314	578	970	612	771	966	695	783

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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

SAN JACINTO RIVER MAIN STEM

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

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	14.0	13.5	14.0	16.0	13.0	14.5	18.0	17.5	18.0	24.0	22.0	23.0
2	14.5	14.0	14.5	---	---	---	19.0	18.0	18.5	23.5	22.0	22.5
3	14.5	13.0	13.5	---	---	---	19.5	18.5	19.0	23.0	22.0	22.5
4	13.5	12.0	13.0	---	---	---	19.5	18.0	19.0	22.5	21.0	21.5
5	13.5	12.5	13.0	---	---	---	19.5	17.5	18.5	22.5	21.0	22.0
6	14.5	12.5	14.0	---	---	---	19.5	17.0	18.0	23.0	21.0	22.0
7	16.0	13.5	15.5	---	---	---	18.5	16.5	17.5	22.5	21.0	22.0
8	17.5	15.5	17.0	---	---	---	18.0	16.5	17.5	22.5	21.0	22.0
9	18.5	16.0	17.5	---	---	---	18.0	17.0	17.5	26.0	21.0	23.0
10	17.0	13.0	15.5	---	---	---	19.5	18.0	18.5	25.5	21.5	23.5
11	15.0	13.0	14.0	---	---	---	20.5	17.0	18.5	24.0	21.0	22.5
12	15.0	13.0	14.5	---	---	---	20.5	17.0	19.0	24.5	23.0	23.5
13	15.5	13.5	15.0	20.5	18.5	20.0	19.0	17.5	18.5	28.0	23.5	25.5
14	16.0	15.0	15.5	18.5	17.5	18.0	20.0	17.5	19.0	28.0	25.0	26.5
15	17.5	15.0	16.5	17.5	16.0	16.5	20.5	17.5	19.0	28.5	25.0	27.0
16	15.5	14.0	15.0	18.0	15.5	16.5	22.0	19.0	20.5	28.5	25.5	27.0
17	14.0	13.5	14.0	18.5	16.0	17.5	24.5	20.0	22.0	29.0	25.5	27.0
18	13.5	13.5	13.5	19.5	15.5	17.5	23.5	21.0	22.5	27.0	25.0	26.0
19	14.5	13.5	14.0	19.0	16.0	17.5	22.0	21.0	21.5	26.5	24.0	25.0
20	14.5	13.0	14.0	18.5	14.0	16.0	24.0	20.5	22.0	29.0	25.0	26.5
21	14.0	13.5	13.5	19.0	14.0	16.5	25.0	21.5	23.0	30.0	26.0	28.0
22	14.0	13.0	13.5	20.0	15.5	17.5	25.5	22.0	24.0	29.0	26.5	27.5
23	14.0	12.5	13.5	20.5	17.0	18.5	25.5	22.5	24.0	28.5	24.0	26.0
24	15.0	13.5	14.5	22.0	18.0	19.5	24.0	22.5	23.0	28.5	24.5	26.5
25	15.0	14.0	14.5	19.5	17.0	18.0	24.5	22.0	23.0	29.5	25.5	27.5
26	15.5	14.0	15.0	17.5	16.0	16.5	23.5	20.0	22.0	29.5	25.0	27.5
27	17.5	15.5	16.5	18.5	15.0	16.5	21.5	19.5	20.5	30.0	26.0	28.0
28	17.5	16.0	17.0	18.5	17.5	18.0	22.0	19.5	21.0	29.0	26.5	27.5
29	---	---	---	18.0	17.5	18.0	23.0	20.5	22.0	27.5	24.5	26.0
30	---	---	---	17.0	17.0	17.0	23.5	21.5	22.5	28.0	25.0	26.5
31	---	---	---	17.5	17.0	17.0	---	---	---	29.0	26.5	27.5
MONTH	18.5	12.0	14.5	22.0	13.0	17.5	25.5	16.5	20.5	30.0	21.0	25.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	29.5	25.0	27.0	30.0	25.5	28.0	30.0	26.5	28.5	30.5	26.0	28.0
2	30.0	26.5	28.5	32.0	26.5	29.0	30.0	26.5	28.5	29.5	25.5	27.0
3	31.5	27.0	29.0	32.0	27.5	30.0	31.5	27.0	29.0	27.5	26.0	27.0
4	30.0	26.0	28.0	32.0	27.5	30.0	32.0	27.0	29.5	30.0	25.5	27.5
5	31.0	26.0	28.5	30.0	27.5	29.0	32.5	28.0	30.0	30.0	26.0	28.0
6	31.5	27.0	29.0	30.5	26.5	28.5	31.5	26.5	29.0	30.5	26.0	28.0
7	31.0	27.0	29.0	29.5	26.5	28.0	29.5	27.0	28.5	30.5	26.0	28.5
8	31.0	27.0	29.0	31.0	25.5	28.5	30.0	24.5	27.0	30.5	26.5	28.5
9	31.0	26.5	29.0	31.5	26.5	29.0	30.0	24.5	27.0	28.5	26.0	27.0
10	30.0	26.5	28.5	31.5	27.5	29.5	29.0	25.5	27.5	26.5	24.5	25.5
11	31.0	26.5	28.5	30.5	27.5	29.0	30.0	25.0	27.5	27.0	24.5	25.5
12	30.0	26.5	28.5	29.5	27.0	28.0	31.0	26.0	28.5	26.0	24.5	25.5
13	29.5	27.0	28.5	29.0	25.5	27.0	30.5	25.5	28.0	26.0	25.0	25.5
14	30.0	26.5	28.5	28.5	23.5	26.5	31.0	26.0	28.5	28.5	24.5	26.5
15	31.5	27.0	29.5	26.5	23.5	25.0	31.0	26.5	28.5	29.5	26.0	27.5
16	31.5	27.5	29.5	25.5	24.5	25.0	30.5	26.5	28.5	29.5	26.5	27.5
17	32.0	27.0	29.5	27.0	24.5	25.5	30.5	26.0	28.5	27.5	25.5	26.5
18	32.0	27.5	30.0	29.5	25.5	27.0	31.0	26.0	28.5	29.0	25.0	26.5
19	32.0	27.5	30.0	29.5	25.5	27.5	31.5	27.0	29.0	28.0	25.5	27.0
20	31.5	27.5	29.5	28.5	25.5	27.0	32.0	27.0	29.5	29.5	25.5	27.5
21	31.5	27.5	29.5	30.0	25.0	27.5	32.0	27.5	29.5	30.0	26.0	28.0
22	32.5	27.5	30.0	31.0	26.5	29.0	30.5	26.5	28.5	30.0	27.0	28.5
23	32.5	28.0	30.0	29.5	27.0	27.5	30.0	26.5	28.0	28.0	25.0	26.5
24	31.0	27.0	29.0	29.5	26.0	27.5	31.0	26.5	28.5	24.5	20.5	22.5
25	31.5	27.5	29.5	30.0	26.0	28.0	31.0	26.5	29.0	25.0	20.5	22.5
26	30.0	26.5	28.5	31.0	26.0	28.5	32.5	27.0	29.5	26.5	21.5	24.0
27	31.5	27.0	29.0	32.0	26.5	29.0	31.0	27.5	29.5	---	---	---
28	30.0	26.5	28.5	31.5	27.5	29.5	31.5	27.0	29.5	---	---	---
29	30.0	26.0	28.0	32.0	27.0	29.5	31.5	27.0	29.0	---	---	---
30	28.5	26.5	27.5	32.0	27.0	29.0	32.0	27.5	29.5	---	---	---
31	---	---	---	29.5	26.0	28.0	31.5	27.5	29.5	---	---	---
MONTH	32.5	25.0	29.0	32.0	23.5	28.0	32.5	24.5	28.5	30.5	20.5	26.5

SAN JACINTO RIVER MAIN STEM

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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 mi².

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.--No estimated daily discharges. Records good. 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.--6 years, 516 ft³/s (373,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (estimated), 30,000 ft³/s May 18, 1989 (gage height, 29.76 ft), from statistical studies of areal stations and rainfall data; minimum daily, 19 ft³/s Sept. 29-30, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,930 ft³/s May 4 at 1200 hours (gage height, 21.36 ft); minimum daily, 19 ft³/s Sept. 29-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	63	31	419	1410	1930	4350	925	53	38	41	29
2	33	46	31	279	1460	2600	5060	703	64	35	40	29
3	30	37	30	122	1380	2280	3650	645	49	31	34	30
4	31	31	31	124	1780	2080	2070	4960	46	31	35	34
5	31	31	29	93	1350	1850	1570	2490	44	32	33	40
6	32	33	29	132	723	1280	970	1390	52	35	33	35
7	38	36	31	224	330	805	923	904	51	41	32	30
8	45	34	32	195	230	612	897	556	45	39	31	30
9	36	29	30	137	180	596	890	393	42	41	30	30
10	31	28	33	101	211	511	688	233	40	39	29	43
11	30	28	36	72	477	331	469	177	39	38	33	52
12	29	27	34	56	596	176	212	152	37	41	31	45
13	29	27	33	49	595	222	138	136	38	152	31	41
14	27	29	34	46	411	392	219	117	44	71	29	38
15	26	29	33	43	373	522	590	105	49	45	28	36
16	25	28	32	40	533	518	417	93	44	41	29	35
17	25	28	34	40	627	398	212	84	40	39	29	34
18	23	30	35	43	426	266	152	79	38	37	28	50
19	24	31	37	54	495	148	127	407	35	36	28	57
20	25	59	37	790	1020	117	116	253	36	34	27	55
21	27	51	36	1560	1390	104	99	138	36	39	25	38
22	27	42	36	1290	3240	90	80	101	36	39	28	29
23	28	46	35	450	3130	81	74	85	35	46	35	24
24	27	48	36	607	3550	72	69	83	34	48	32	22
25	25	41	37	2070	3610	69	63	77	38	44	31	20
26	25	36	37	1980	2410	66	198	68	37	39	29	20
27	25	35	36	833	719	58	2100	63	44	38	27	20
28	28	32	35	301	321	81	1450	61	42	37	26	20
29	26	31	39	1110	---	257	1270	58	36	35	27	19
30	47	29	63	1960	---	1990	1160	54	37	32	25	19
31	80	---	283	2020	---	2920	---	54	---	40	28	---
TOTAL	968	1075	1325	17240	32977	23422	30283	15644	1261	1333	944	1004
MEAN	31.2	35.8	42.7	556	1178	756	1009	505	42.0	43.0	30.5	33.5
MAX	80	63	283	2070	3610	2920	5060	4960	64	152	41	57
MIN	23	27	29	40	180	58	63	54	34	31	25	19
AC-FT	1920	2130	2630	34200	65410	46460	60070	31030	2500	2640	1870	1990
CAL YR 1989	TOTAL	157250	MEAN	431	MAX	16000	MIN	23	AC-FT	311900		
WTR YR 1990	TOTAL	127476	MEAN	349	MAX	5060	MIN	19	AC-FT	252800		

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 1989 TO SEPTEMBER 1990

	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)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT	06...	1030	32	514	7.8	25.5	9.8	118	--	--	--
17...	1115		26	560	7.9	23.0	9.8	113	--	--	--
FEB	02...	0820	1540	235	7.1	15.0	9.4	94	3.1	3900	5200
19...	2400		743	--	--	--	--	--	--	--	--
21...	1600		1300	--	--	--	--	--	--	--	--
22...	1200		3470	--	--	--	--	--	--	--	--
23...	0800		3050	--	--	--	--	--	--	--	--
JUL	11...	0740	36	473	7.2	28.0	6.0	76	2.0	80	44
AUG	08...	0947	32	661	7.3	25.5	8.1	98	1.5	190	28
	DATE	HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (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 CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT	06...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
FEB	02...	64	9	22	2.2	18	1	3.3	55	12	25
19...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
JUL	11...	88	0	28	4.3	59	3	4.7	90	24	72
AUG	08...	82	0	26	4.1	100	5	4.6	87	58	99
	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)	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)
OCT	06...	--	--	--	0.660	0.590	0.040	0.040	0.700	0.630	0.060
17...	--	--	--	--	1.13	1.14	0.070	0.060	1.20	1.20	0.100
FEB	02...	0.10	8.5	126	0.220	0.260	0.080	0.030	0.300	0.290	0.190
19...	--	--	--	--	0.260	--	0.040	--	0.300	--	0.060
21...	--	--	--	--	0.130	--	0.070	--	0.200	--	0.100
22...	--	--	--	--	0.140	--	0.060	--	0.200	--	0.110
23...	--	--	--	--	0.140	--	0.060	--	0.200	--	0.090
JUL	11...	0.20	20	268	0.350	0.370	0.050	0.030	0.400	0.400	0.160
AUG	08...	0.20	17	364	0.640	0.670	0.060	0.030	0.700	0.700	0.100
	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)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT	06...	0.050	0.64	0.45	0.50	0.70	0.710	0.550	--	--	--
17...	0.110	0.50	0.49	0.60	0.60	0.60	0.940	0.890	--	--	--
FEB	02...	0.150	0.81	0.85	1.0	1.0	0.160	0.110	14	130	9
19...	--	--	0.64	--	--	0.70	0.220	--	--	--	--
21...	--	--	0.80	--	--	0.90	0.140	--	--	--	--
22...	--	--	0.59	--	--	0.70	0.170	--	--	--	--
23...	--	--	0.51	--	--	0.60	0.160	--	--	--	--
JUL	11...	0.160	0.84	0.64	0.80	1.0	0.840	0.760	5.8	37	60
AUG	08...	0.060	1.7	1.2	1.3	1.8	0.760	0.690	5.3	34	28

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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-Fussell 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.

WATER-DISCHARGE RECORDS

REVISID 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.

AVERAGE DISCHARGE.--51 years, 220 ft³/s (7.13 in/yr), 159,400 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 5	0200	*3,150	*13.29	No other peak greater than base discharge.			
Minimum discharge, 12.0 ft ³ /s Sept. 28-29.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	21	71	20	74	319	511	1080	951	40	26	76	18		
2	22	43	20	67	636	945	1050	272	38	21	52	16		
3	20	33	19	90	613	1060	406	626	37	18	33	16		
4	19	25	19	98	587	1070	169	2410	35	17	22	17		
5	19	29	19	70	298	646	114	2830	34	18	19	16		
6	19	136	18	182	171	250	113	2220	33	19	18	18		
7	108	127	18	227	123	167	101	1240	33	18	16	14		
8	86	53	17	176	97	137	85	367	32	18	16	14		
9	52	34	18	113	93	123	82	217	32	18	16	19		
10	34	26	18	79	147	98	73	148	33	17	15	21		
11	27	22	19	56	118	88	70	105	32	22	16	20		
12	23	19	18	45	138	84	66	93	31	27	17	18		
13	23	20	18	38	106	115	54	87	29	40	16	20		
14	21	20	19	33	77	106	235	82	53	18	15	20		
15	20	19	18	31	69	118	320	79	57	16	15	18		
16	21	18	18	29	64	97	188	74	30	16	15	20		
17	19	17	20	29	71	90	119	70	26	17	15	24		
18	19	18	22	32	84	77	79	74	25	17	15	37		
19	18	33	20	44	83	64	60	77	24	17	15	88		
20	17	97	19	91	138	56	51	118	24	34	15	72		
21	17	54	19	183	993	50	45	76	24	183	15	34		
22	17	43	20	145	1910	48	40	59	21	38	48	26		
23	17	63	20	94	1450	47	37	52	19	33	27	22		
24	17	45	23	250	1330	44	35	49	18	49	21	19		
25	17	34	22	352	964	44	33	46	19	26	19	17		
26	17	30	21	527	268	43	508	45	22	21	16	16		
27	15	28	20	677	163	42	702	43	19	19	16	15		
28	15	25	19	346	145	139	852	42	22	17	16	14		
29	29	23	28	365	---	465	1090	43	21	19	15	13		
30	90	21	65	408	---	896	1130	41	20	19	20	13		
31	129	---	89	343	---	1050	---	40	---	140	18	---		
TOTAL	988	1226	723	5294	11255	8770	8987	12676	883	978	668	695		
MEAN	31.9	40.9	23.3	171	402	283	300	409	29.4	31.5	21.5	23.2		
MAX	129	136	89	677	1910	1070	1130	2830	57	183	76	88		
MIN	15	17	17	29	64	42	33	40	18	16	15	13		
AC-FT	1960	2430	1430	10500	22320	17400	17830	25140	1750	1940	1320	1380		
CFSM	.08	.10	.06	.41	.96	.68	.71	.98	.07	.08	.05	.06		
IN.	.09	.11	.06	.47	1.00	.78	.80	1.13	.08	.09	.06	.06		
CAL YR 1989	TOTAL	79325	MEAN	217	MAX	10000	MIN	14	AC-FT	157300	CFSM	.52	IN.	7.04
WTR YR 1990	TOTAL	53143	MEAN	146	MAX	2830	MIN	13	AC-FT	105400	CFSM	.35	IN.	4.72

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 1989 TO SEPTEMBER 1990

		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, FECAI, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	
OCT											
05...	1530	19	560	7.9	26.0	12.1	148	--	--	--	
16...	1225	24	538	8.5	24.5	8.5	101	--	--	--	
30...	1200	86	495	7.5	22.0	6.7	76	--	--	--	
JAN											
30...	1317	427	177	6.8	13.0	9.6	91	3.2	1000	1500	
FEB											
21...	1500	1630	--	--	--	--	--	--	--	--	
22...	0300	1910	--	--	--	--	--	--	--	--	
22...	1100	1930	--	--	--	--	--	--	--	--	
22...	2300	1830	--	--	--	--	--	--	--	--	
MAY											
01...	0958	1050	102	6.1	23.0	6.0	70	2.8	92	190	
AUG											
07...	1130	17	539	7.7	27.5	8.6	108	1.0	120	32	
DATE		HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (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 CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT											
05...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JAN											
30...	42	16	13	2.3	16	1	3.7	26	11	22	
FEB											
21...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	33	9	10	1.9	8.1	0.6	2.9	24	4.8	11	
AUG											
07...	71	0	22	3.9	84	4	4.8	110	12	81	
DATE		FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)	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)
OCT											
05...	--	--	--	--	1.88	1.88	0.120	0.120	2.00	2.00	0.140
16...	--	--	--	--	2.26	2.09	0.140	0.110	2.40	2.20	0.170
30...	--	--	--	--	1.57	1.39	0.130	0.110	1.70	1.50	0.550
JAN											
30...	0.10	9.5	95	0.350	0.360	0.050	0.030	0.400	0.390	0.240	
FEB											
21...	--	--	--	--	0.080	--	0.220	--	0.300	--	0.460
22...	--	--	--	--	0.230	--	0.070	--	0.300	--	0.280
22...	--	--	--	--	0.140	--	0.060	--	0.200	--	0.160
22...	--	--	--	--	0.140	--	0.060	--	0.200	--	0.140
MAY											
01...	<0.10	6.3	61	0.150	0.180	0.050	0.020	0.200	0.200	0.170	
AUG											
07...	0.20	15	301	2.86	2.86	0.040	0.040	2.90	2.90	0.060	
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-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT											
05...	0.130	0.56	0.37	0.50	0.70	2.60	2.20	--	--	--	--
16...	0.150	0.73	0.75	0.90	0.90	0.230	0.180	--	--	--	--
30...	0.440	1.2	0.46	0.90	1.7	2.60	1.70	--	--	--	--
JAN											
30...	0.210	0.96	0.99	1.2	1.2	0.300	0.270	23	250	23	
FEB											
21...	--	0.34	--	--	0.80	0.270	--	--	--	--	--
22...	--	1.5	--	--	1.8	0.280	--	--	--	--	--
22...	--	0.54	--	--	0.70	0.290	--	--	--	--	--
22...	--	0.76	--	--	0.90	0.250	--	--	--	--	--
MAY											
01...	0.140	1.2	1.3	1.4	1.4	0.220	0.160	21	490	35	
AUG											
07...	0.040	0.94	0.86	0.90	1.0	2.00	1.80	5.6	31	40	

SAN JACINTO RIVER BASIN

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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 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Concrete weir located 0.9 mi downstream from gage. 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.--13 years (water years 1975-82, 1985-90), 52.6 ft³/s (38,110 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,370 ft³/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, 272 ft³/s May 4 at 1400 hours (gage height, 51.76 ft); no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.48	1.4	.21	.66	.30	7.0	39	1.4	.00	.00	4.8	.00
2	.54	.04	.19	.55	12	108	2.9	.52	.00	.00	3.6	.00
3	.22	1.3	.14	.57	4.3	102	1.1	71	.00	.74	.82	.00
4	.05	1.2	.10	.57	1.8	27	1.1	254	.00	.36	2.8	.00
5	.01	.91	.09	.58	1.1	4.6	1.1	172	.00	.00	.83	.00
6	.00	2.9	.08	1.1	.19	1.4	1.0	50	.00	.00	.14	.00
7	8.4	2.9	.08	3.3	.00	1.1	.99	9.9	.00	.00	.01	.00
8	1.6	3.1	.06	2.9	.36	1.1	1.2	1.6	.00	.00	.00	.00
9	.24	2.0	.05	.00	.83	1.0	1.0	1.4	.00	.00	.01	.00
10	.08	.54	.04	.00	.98	1.0	.97	.93	.00	.00	.00	.01
11	.04	.15	.03	.04	1.5	.94	1.0	.05	.00	.00	.00	1.9
12	.01	.12	.02	.83	1.4	.77	.85	.85	.00	.00	.00	1.5
13	.00	.10	.03	.36	.86	.74	.85	.90	.00	.00	.00	e1.5
14	.01	.72	.03	.22	.57	.70	1.1	.44	.00	.00	.00	e2.0
15	.42	.55	.03	.22	.50	.78	.87	.00	.00	.08	.00	e1.5
16	.93	.26	.03	.31	.58	.91	.45	.00	.00	.29	.00	e1.0
17	.44	.13	.03	.36	.48	1.1	.00	.00	.00	.22	.00	e1.5
18	.12	.10	.03	.30	.52	1.2	.00	.15	.00	.14	.00	e4.0
19	.05	.10	.04	.32	.71	.72	.00	.25	.00	.00	.00	e6.0
20	.02	.04	.05	.43	1.3	.59	.00	.10	.00	.06	.00	e2.0
21	.05	.00	.04	.95	72	.61	.00	.06	.00	.78	.01	e1.0
22	.08	.00	.03	1.6	238	.53	.00	.02	.00	.68	1.6	e.70
23	.08	.00	.03	1.3	159	.47	.01	.00	.00	.14	.57	e.20
24	.07	.01	.03	1.0	55	.42	.03	.00	.00	.21	.09	e.08
25	.06	.84	.03	1.2	5.5	.24	.02	.00	.12	.00	.01	e.04
26	.06	.60	.03	4.1	1.5	.16	1.5	1.6	11	.00	.00	e.20
27	.06	.47	.02	1.1	.90	.14	18	1.4	.03	.00	.00	e.08
28	.06	.47	.00	.80	1.0	.14	78	.13	.00	.00	.00	e.04
29	.15	.34	.03	.38	---	6.9	4.4	.00	.00	.00	.00	e.02
30	.27	.26	.06	.18	---	40	1.6	.00	.00	.00	.00	e.03
31	2.4	---	.61	.00	---	100	---	.00	---	4.6	.00	---
TOTAL	17.00	21.55	2.27	26.23	563.18	412.26	159.04	568.70	11.15	8.30	15.29	25.30
MEAN	.55	.72	.073	.85	20.1	13.3	5.30	18.3	.37	.27	.49	.84
MAX	8.4	3.1	.61	4.1	238	108	78	254	11	4.6	4.8	6.0
MIN	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00
AC-FT	34	43	4.5	52	1120	818	315	1130	22	16	30	50
CAL YR 1989	TOTAL	2092.86	MEAN	5.73	MAX	360	MIN	.00	AC-FT	4150		
WTR YR 1990	TOTAL	1830.27	MEAN	5.01	MAX	254	MIN	.00	AC-FT	3630		

e Estimated

SAN JACINTO RIVER BASIN

08068740 CYPRESS CREEK AT HOUSE AND HAHN 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 Hahn 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 fair except those for estimated daily discharges, which are poor. Stage discharge relationship affected by seasonal vegetal growth during most years. Considerable diversions and return flow from irrigation occur upstream from station, especially during period April through October.

AVERAGE DISCHARGE.--15 years, 71.0 ft³/s (51,440 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, 651 ft³/s May 4 at 1000 hours (gage height, 39.98 ft); no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	24	.23	1.5	24	28	77	14	.63	.00	14	.00
2	.83	e8.1	.20	.93	52	168	25	3.8	.43	.01	22	.00
3	.83	e4.2	.18	.85	21	161	9.7	116	.33	.05	6.2	.03
4	.81	e2.1	.18	.85	12	62	7.4	630	.24	1.3	5.6	.03
5	.59	e2.0	.17	1.5	6.2	30	4.8	430	.19	.27	4.0	.02
6	.48	e5.0	.15	11	1.8	17	4.9	142	.15	.09	1.4	.01
7	13	e6.0	.11	39	.79	11	2.8	62	.16	.73	1.0	.00
8	9.8	e5.0	.11	38	.60	8.2	3.2	21	.15	1.0	.44	.00
9	6.0	2.0	.11	1.5	2.4	6.2	2.3	13	.13	4.7	.21	.00
10	1.2	1.7	.09	.53	4.6	3.5	3.2	8.5	.13	.73	.16	.00
11	.75	1.2	.09	.37	5.6	2.6	2.7	2.3	.13	1.2	.12	.68
12	2.6	1.0	.08	.27	7.4	1.9	1.2	2.2	.18	.11	.17	3.3
13	1.6	.73	.08	.84	3.5	1.9	.77	3.3	.12	.03	.32	5.7
14	.96	.55	.07	.58	1.9	1.6	8.3	2.3	.16	.00	.11	9.2
15	.77	1.2	.06	.39	1.5	1.1	6.5	1.0	.12	.00	.09	3.9
16	3.0	.79	.06	.34	1.2	.93	1.6	1.0	.10	.23	.07	2.7
17	1.9	.58	.06	.44	1.2	1.0	.64	.75	.12	.72	.06	2.4
18	1.2	.54	.10	.52	1.3	1.7	.42	.78	.24	1.2	.02	25
19	.80	.54	.13	.52	2.2	1.1	.34	1.8	.29	.44	.00	32
20	6.2	.61	.13	.74	3.4	.85	.31	1.3	.21	4.6	.00	9.3
21	3.6	.61	.12	1.2	211	.72	.30	.86	.18	4.9	1.3	5.3
22	2.1	1.0	.10	2.5	456	.57	.25	.70	.10	3.8	2.2	2.3
23	5.1	1.5	.09	2.6	310	.64	.27	.61	.07	1.6	2.9	.69
24	9.5	.85	.09	1.5	99	.61	.21	.55	.02	14	.68	.24
25	4.6	.55	.13	1.1	33	.60	.21	.49	4.0	5.9	.28	.12
26	2.3	1.1	.16	7.6	16	.56	40	.43	27	6.9	.11	1.5
27	1.6	.64	.16	3.1	8.3	.51	123	5.2	3.2	3.7	.04	.67
28	3.2	.41	.16	2.9	8.1	.47	311	1.1	.38	1.5	.01	.18
29	9.5	.30	.27	3.0	---	6.9	107	.62	.08	4.6	.00	.07
30	31	.25	12	.76	---	58	33	.44	.04	1.7	.00	.10
31	34	---	3.1	.45	---	143	---	.52	---	9.3	.00	---
TOTAL	160.82	75.05	18.77	127.38	1295.99	722.16	778.32	1468.55	39.28	75.31	63.49	105.44
MEAN	5.19	2.50	.61	4.11	46.3	23.3	25.9	47.4	1.31	2.43	2.05	3.51
MAX	34	24	12	39	456	168	311	630	27	14	22	32
MIN	.48	.25	.06	.27	.60	.47	.21	.43	.02	.00	.00	.00
AC-FT	319	149	37	253	2570	1430	1540	2910	78	149	126	209

CAL YR 1989 TOTAL 5663.37 MEAN 15.5 MAX 797 MIN .00 AC-FT 11230
WTR YR 1990 TOTAL 4930.56 MEAN 13.5 MAX 630 MIN .00 AC-FT 9780

e Estimated

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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...	1304	0.30	418	7.8	16.0	65	14	8.2	81	2.0	93	0
FEB 12...	1340	7.0	301	7.7	16.0	180	43	8.0	80	2.5	58	0
MAY 24...	0913	0.50	503	8.0	25.0	50	9.1	4.8	58	0.9	110	0
AUG 02...	1205	33	604	8.4	28.0	55	15	6.5	82	5.2	87	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, DIS-PENDE (MG/L)
NOV 29...	29	4.9	45	2	10	120	8.0	53	0.30	10	236	5
FEB 12...	17	3.8	29	2	12	81	9.0	33	0.30	7.2	161	48
MAY 24...	33	6.3	61	3	4.0	160	6.3	58	0.20	5.9	273	7
AUG 02...	26	5.2	97	5	8.9	190	5.9	72	0.60	9.4	339	34
DATE	RESIDUE VOLA-TILE, SUS-PENDE (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)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)
NOV 29...	5	0	--	0.020	<0.100	0.030	0.87	0.90	0.200	9.6	3	230
FEB 12...	38	10	0.140	0.060	0.200	0.160	2.0	2.2	0.380	15	3	130
MAY 24...	7	0	--	0.020	<0.100	0.060	0.64	0.70	0.130	8.2	4	280
AUG 02...	11	23	--	0.030	<0.100	0.060	1.0	1.1	0.970	12	9	160
DATE	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)	NICKEL, DIS-SOLVED (UG/L AS NI)
NOV 29...	<0.5	<1.0	<5	<3	<10	110	<10	5	26	<0.1	<10	<10
FEB 12...	<0.5	1.0	<5	<3	<10	900	<10	<4	78	<0.1	<10	<10
MAY 24...	<0.5	<1.0	<5	<3	<10	180	<10	6	81	<0.1	<10	<10
AUG 02...	<0.5	2.0	<5	<3	<10	45	<10	6	7	<0.1	<10	<10
DATE	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)	DDT, TOTAL (UG/L)
NOV 29...	<1	<1.0	130	<6	4	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010
FEB 12...	<1	<1.0	100	<6	13	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010
MAY 24...	<1	<1.0	150	<6	9	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010
AUG 02...	<1	<1.0	170	<6	7	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010
DATE	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)	METHYL PARA-THION, TOTAL (UG/L)
NOV 29...	0.02	<0.010	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	0.03	<0.01	<0.01
FEB 12...	0.01	<0.010	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	0.07	<0.01	<0.01
MAY 24...	0.02	<0.010	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	0.11	<0.01	<0.01
AUG 02...	0.15	<0.010	<0.01	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	0.02	<0.01	1.9

SAN JACINTO RIVER BASIN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	PHORATE OTAL (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	<0.1	<0.01	<0.01	<1	<0.01	53	<0.01	<0.01
FEB 12...	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.02	<0.01	<0.01
MAY 24...	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<1	<0.01	0.07	<0.01	<0.01
AUG 02...	<0.01	<0.01	0.03	<0.1	<0.01	<0.01	<1	<0.01	0.21	<0.01	<0.01

SAN JACINTO RIVER BASIN

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

AVERAGE DISCHARGE.--8 years, 17.9 ft³/s (5.93 in/yr), 12,970 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 4	1000	*648	*75.67	No other peak greater than base discharge.			
Minimum, no flow for many days.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.12	9.1	.07	1.5	2.9	5.4	23	4.8	.19	.07	8.8	.00		
2	.12	2.9	.07	.84	61	73	12	2.1	.15	.01	3.6	.00		
3	.12	1.3	.08	.61	22	26	5.0	e100	.10	.00	.94	.00		
4	.12	.70	.07	.57	11	e9.7	2.3	563	.07	.00	.51	.00		
5	.11	.53	.07	1.4	3.7	e4.3	1.3	151	.05	.00	1.2	.00		
6	.12	6.9	.08	6.5	1.8	2.0	1.4	e29	.01	.00	.60	.00		
7	.12	.86	.08	30	1.4	1.8	1.9	e11	.00	.00	.35	.00		
8	1.1	.55	.05	20	.93	2.1	1.2	6.4	.00	.00	.23	.00		
9	1.1	.30	.06	7.9	.78	1.8	.89	6.5	.00	.00	.13	.00		
10	.47	.16	.08	3.2	3.9	1.0	.72	2.7	.00	.00	.09	.00		
11	1.3	.19	.06	1.7	4.9	.81	.62	2.1	.00	.00	.09	.00		
12	6.0	.13	.05	1.0	1.6	.64	.44	1.5	.00	.00	.11	2.1		
13	6.1	.11	.06	.65	.85	.56	.41	.92	.00	.40	.10	.54		
14	2.9	.08	.08	.38	.51	.70	8.1	.62	.00	.76	.04	.25		
15	1.7	.06	.07	.24	.52	.71	9.1	.45	.00	.30	.00	.11		
16	1.2	.05	.05	.21	.71	.68	3.0	.90	.00	.21	.00	.09		
17	1.2	.02	.04	.17	.74	.57	1.2	.97	.00	.17	.00	.92		
18	3.1	.05	.41	.26	.53	.52	.74	.61	.00	.21	.00	4.0		
19	1.5	.11	.20	.29	.86	.37	.49	.89	.00	1.1	.00	1.4		
20	.90	.42	.15	18	1.2	.33	.44	1.8	.00	.42	.00	.57		
21	.64	.51	.11	20	84	.31	.71	.67	.00	.20	.00	.32		
22	.39	.62	.08	6.0	224	.26	.52	.37	.00	.11	.00	.22		
23	.24	2.2	.16	2.3	39	.23	.34	.25	.00	.16	.00	.14		
24	.18	2.0	.15	1.6	13	.29	.29	.22	.00	2.8	.00	.09		
25	.83	.80	.20	2.0	5.9	.25	.33	.19	.00	3.2	.00	.07		
26	1.3	.40	.32	1.8	2.8	.17	18	.16	.00	1.2	.00	.03		
27	.78	.24	.33	1.2	1.5	.22	e77	.15	.17	3.3	.00	.00		
28	.42	.16	.29	.67	1.3	5.4	178	.17	.30	2.4	.00	.00		
29	1.5	.12	.27	15	---	27	e43	.21	.21	.69	.00	.00		
30	7.2	.08	11	7.0	---	72	e13	.18	.13	.44	.00	.00		
31	19	---	6.1	2.2	---	71	---	.16	---	10	.00	---		
TOTAL	61.88	31.65	20.89	155.19	493.33	310.12	405.44	889.99	1.38	28.15	16.79	10.85		
MEAN	2.00	1.05	.67	5.01	17.6	10.0	13.5	28.7	.046	.91	.54	.36		
MAX	19	9.1	11	30	224	73	178	563	.30	10	8.8	4.0		
MIN	.11	.02	.04	.17	.51	.17	.29	.15	.00	.00	.00	.00		
AC-FT	123	63	41	308	979	615	804	1770	2.7	56	33	22		
CFSM	.05	.03	.02	.12	.43	.24	.33	.70	.00	.02	.01	.01		
IN.	.06	.03	.02	.14	.45	.28	.37	.81	.00	.03	.02	.01		
CAL YR 1989	TOTAL	2047.12	MEAN	5.61	MAX	311	MIN	.02	AC-FT	4060	CFSM	.14	IN.	1.86
WTR YR 1990	TOTAL	2425.66	MEAN	6.65	MAX	563	MIN	.00	AC-FT	4810	CFSM	.16	IN.	2.20

e Estimated

SAN JACINTO RIVER BASIN

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 mi².

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

AVERAGE DISCHARGE.--8 years, 83.8 ft³/s (60,710 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,550 ft³/s May 14, 1982, and Nov. 26, 1987; maximum gage height, 43.48 ft May 14, 1982; minimum daily (estimated), 0.05 ft³/s Apr. 26, 29, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,020 ft³/s May 4 at 2000 hours (gage height, 35.39 ft); minimum daily, 0.37 ft³/s Sept. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.6	36	e.80	19	16	40	92	24	8.0	2.2	e30	2.5
2	e1.5	22	e.77	e14	90	155	32	13	7.7	1.3	e40	9.2
3	e1.5	16	e.76	17	65	174	18	165	7.9	.83	e50	1.1
4	e1.4	e14	e.75	16	32	78	11	874	8.0	.61	e12	.78
5	e1.2	e12	e.74	19	16	36	9.6	758	8.3	1.1	e9.0	4.3
6	e1.1	14	e.73	32	7.6	21	13	230	8.5	5.1	e8.0	13
7	e13	18	e.69	37	5.8	e11	11	69	8.4	3.3	e7.0	1.3
8	e11	e12	e.66	44	e2.0	e10	9.0	33	8.2	3.0	e7.0	.37
9	e7.6	e6.0	e.67	32	e3.7	e8.5	9.9	19	8.1	2.4	e6.0	19
10	e2.2	e4.0	e.67	17	e9.0	e5.0	12	14	7.8	2.9	e5.0	e28
11	e2.5	e1.9	e.65	e2.6	e10	e3.9	9.9	9.2	7.7	5.2	e5.0	e18
12	e9.1	e1.6	e.63	e1.8	e9.5	e3.0	6.8	8.3	7.4	2.9	e5.0	e25
13	e8.2	e1.3	e.64	e2.0	e4.8	e3.0	6.7	6.0	7.4	2.9	e7.0	e16
14	e4.4	e1.1	e.65	e1.5	e2.9	e2.8	34	5.1	7.4	2.6	e8.0	e18
15	e3.0	e1.8	e.63	e1.1	e2.5	e2.4	27	3.8	7.1	1.6	e6.0	e14
16	e4.7	e1.3	e.61	e1.0	e2.4	e2.0	13	2.4	6.4	2.3	e5.0	e10
17	e3.6	e1.1	e.60	e1.1	e2.4	e2.0	7.3	2.6	3.3	2.0	e4.0	e11
18	e4.8	e1.1	e1.0	e1.3	e2.3	e4.0	5.0	2.9	5.3	1.3	e3.0	e35
19	e2.8	e1.1	e.83	e1.3	e3.6	e3.0	5.1	2.2	6.0	2.0	e2.0	e40
20	e7.6	e1.5	e.78	15	e5.1	e2.8	5.1	4.7	6.6	42	e2.0	15
21	e4.7	e1.6	e.73	27	310	e2.7	5.2	5.8	8.0	44	e3.0	e7.0
22	e3.0	9.7	e.68	e16	644	e2.6	5.3	7.3	8.8	8.4	e4.0	e5.0
23	e5.8	15	e.75	e13	382	e2.5	5.8	8.7	8.1	6.1	e7.0	e3.0
24	e10	e3.3	e.74	e10	134	e2.4	6.2	5.3	8.0	e30	e4.0	e1.8
25	e5.9	e1.8	e.88	e8.2	46	e2.3	6.6	5.2	9.8	e15	e3.0	1.6
26	e4.1	e2.0	e.98	e9.9	19	e2.1	36	6.0	27	e10	e2.0	e5.0
27	e2.9	e1.4	e.99	e6.4	e7.8	e2.0	220	6.9	16	e9.0	e1.2	e4.0
28	e4.1	e1.1	e1.5	20	11	13	475	8.9	5.7	e8.0	1.5	3.7
29	27	e.92	17	25	---	34	238	7.6	3.2	20	2.9	3.5
30	32	e.83	30	19	---	79	53	7.3	2.6	e80	1.7	3.3
31	44	---	29	6.8	---	133	---	6.9	---	e130	3.2	---
TOTAL	236.3	205.45	97.51	437.0	1846.4	843.0	1388.5	2322.1	242.7	448.04	254.5	319.45
MEAN	7.62	6.85	3.15	14.1	65.9	27.2	46.3	74.9	8.09	14.5	8.21	10.6
MAX	44	36	30	44	644	174	475	874	27	130	50	40
MIN	1.1	.83	.60	1.0	2.0	2.0	5.0	2.2	2.6	.61	1.2	.37
AC-FT	469	408	193	867	3660	1670	2750	4610	481	889	505	634
CAL YR 1989	TOTAL	12620.72	MEAN	34.6	MAX	2510	MIN	.05	AC-FT	25030		
WTR YR 1990	TOTAL	8640.95	MEAN	23.7	MAX	874	MIN	.37	AC-FT	17140		

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 mi².

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 of gage is 63.89 ft above National Geodetic Vertical Datum 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 fair. 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.--46 years, 161 ft³/s (116,600 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,100 ft³/s Oct. 8, 1949 (gage height, 33.44 ft) present datum, from rating curve extended above 11,000 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 34 ft May 1929 (discharge, 26,000 ft³/s), present datum, from information by local resident. Flood in November 1940 reached a stage of about 32 ft, present datum (discharge, 15,000 ft³/s), from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 21	1800	*3,120	*17.60	May 3	2200	2,640	16.02

Minimum daily discharge, 19 ft³/s Dec. 8, 9, Apr. 25

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	68	21	e56	278	352	197	88	40	78	114	86
2	27	55	20	e52	344	367	106	57	38	27	147	37
3	26	36	20	e112	170	269	57	817	37	23	134	32
4	24	30	21	e66	86	171	40	1660	38	22	e84	27
5	24	26	20	114	54	87	32	1320	39	46	e43	82
6	26	32	20	251	38	59	93	599	39	36	e31	275
7	38	45	22	165	30	47	44	175	37	30	27	46
8	35	30	19	78	28	39	30	121	38	26	25	38
9	38	26	19	78	46	35	27	69	35	27	24	48
10	35	24	20	46	70	32	124	50	37	27	26	115
11	27	24	21	36	33	31	58	39	36	49	25	69
12	24	23	20	29	34	41	31	64	35	41	23	124
13	26	26	e21	26	29	55	24	36	37	40	23	48
14	33	23	e21	26	26	38	361	31	40	29	23	41
15	32	28	20	26	27	41	128	28	40	30	21	44
16	30	22	e20	25	25	26	54	26	37	37	22	40
17	25	21	e24	27	20	22	35	25	37	40	22	107
18	26	25	29	32	74	22	28	27	37	36	21	82
19	25	54	24	55	47	22	23	26	e36	40	25	119
20	27	40	22	84	26	22	22	26	e35	249	41	117
21	25	26	21	43	1350	21	21	29	e34	363	36	43
22	27	61	e26	48	1310	20	21	29	e33	78	79	49
23	28	51	e40	35	704	20	22	39	e33	119	34	35
24	28	27	e64	51	318	20	20	31	e31	74	31	e36
25	25	25	e44	48	118	21	19	28	e50	51	23	e23
26	25	25	e30	31	67	22	743	27	e78	56	24	e26
27	25	25	e26	30	49	20	868	29	e43	53	23	e25
28	24	22	e30	148	123	303	1150	30	30	56	32	e25
29	113	21	e58	123	---	450	647	34	23	61	90	e25
30	293	21	e92	52	---	529	191	34	204	441	33	e30
31	163	---	e108	46	---	253	---	36	---	700	80	---
TOTAL	1347	962	963	2039	5524	3457	5216	5630	1307	2985	1386	1894
MEAN	43.5	32.1	31.1	65.8	197	112	174	182	43.6	96.3	44.7	63.1
MAX	293	68	108	251	1350	529	1150	1660	204	700	147	275
MIN	23	21	19	25	20	20	19	25	23	22	21	23
AC-FT	2670	1910	1910	4040	10960	6860	10350	11170	2590	5920	2750	3760
CAL YR 1989	TOTAL	58520	MEAN	160	MAX	9990	MIN	15	AC-FT	116100		
WTR YR 1990	TOTAL	32710	MEAN	89.6	MAX	1660	MIN	19	AC-FT	64880		

e Estimated

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 (discontinued).

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)
OCT											
04...	1250	23	843	8.2	26.0	7.9	96	--	--	--	--
16...	1125	29	746	7.8	25.0	6.5	78	--	--	--	--
30...	1030	132	237	7.1	22.0	6.7	76	--	--	--	--
JAN											
30...	1035	49	435	7.5	14.0	9.0	87	3.0	40	190	80
FEB											
21...	1456	2890	--	--	15.5	--	--	--	--	--	--
21...	1606	3060	--	--	15.5	--	--	--	--	--	--
21...	1851	3050	--	--	15.0	--	--	--	--	--	--
22...	0452	1660	--	--	14.0	--	--	--	--	--	--
22...	0718	1400	--	--	14.0	--	--	--	--	--	--
22...	1020	1180	--	--	14.0	--	--	--	--	--	--
MAR											
29...	1835	1430	--	--	19.0	--	--	--	--	--	--
29...	1943	1510	--	--	19.0	--	--	--	--	--	--
29...	2106	1450	--	--	19.0	--	--	--	--	--	--
30...	0316	751	--	--	18.5	--	--	--	--	--	--
30...	0431	615	--	--	18.0	--	--	--	--	--	--
30...	0556	497	--	--	18.0	--	--	--	--	--	--
APR											
26...	1540	1080	--	--	--	--	--	--	--	--	--
26...	1923	2230	--	--	20.0	--	--	--	--	--	--
26...	1940	2220	--	--	--	--	--	--	--	--	--
26...	2026	2350	--	--	20.0	--	--	--	--	--	--
26...	2208	2210	--	--	19.5	--	--	--	--	--	--
26...	2340	2150	--	--	--	--	--	--	--	--	--
27...	0340	1480	--	--	--	--	--	--	--	--	--
27...	0512	1200	--	--	19.5	--	--	--	--	--	--
27...	0647	979	--	--	20.0	--	--	--	--	--	--
27...	0838	780	--	--	20.0	--	--	--	--	--	--
MAY											
02...	1112	53	374	7.1	26.0	6.0	74	4.2	2100	680	60
AUG											
07...	1000	25	710	7.8	29.0	5.9	76	3.0	2200	340	100
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)
OCT											
04...		--	--	--	--	--	--	--	--	--	--
16...		--	--	--	--	--	--	--	--	--	--
30...		--	--	--	--	--	--	--	--	--	--
JAN											
30...		0	26	3.7	56	3	8.8	120	16	42	0.20
FEB											
21...		--	--	--	--	--	--	--	--	--	--
21...		--	--	--	--	--	--	--	--	--	--
21...		--	--	--	--	--	--	--	--	--	--
22...		--	--	--	--	--	--	--	--	--	--
22...		--	--	--	--	--	--	--	--	--	--
22...		--	--	--	--	--	--	--	--	--	--
MAR											
29...		--	--	--	--	--	--	--	--	--	--
29...		--	--	--	--	--	--	--	--	--	--
29...		--	--	--	--	--	--	--	--	--	--
30...		--	--	--	--	--	--	--	--	--	--
30...		--	--	--	--	--	--	--	--	--	--
30...		--	--	--	--	--	--	--	--	--	--
APR											
26...		--	--	--	--	--	--	--	--	--	--
26...		--	--	--	--	--	--	--	--	--	--
26...		--	--	--	--	--	--	--	--	--	--
26...		--	--	--	--	--	--	--	--	--	--
26...		--	--	--	--	--	--	--	--	--	--
27...		--	--	--	--	--	--	--	--	--	--
27...		--	--	--	--	--	--	--	--	--	--
27...		--	--	--	--	--	--	--	--	--	--
27...		--	--	--	--	--	--	--	--	--	--
27...		--	--	--	--	--	--	--	--	--	--
MAY											
02...		0	19	3.0	45	3	4.4	94	12	38	0.40
AUG											
07...		0	33	4.9	110	5	8.1	180	20	84	0.60

SAN JACINTO RIVER BASIN

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08069000 CYPRESS CREEK NEAR WESTFIELD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, 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)
OCT										
04...	--	--	8.77	8.57	0.130	0.130	8.90	8.70	0.080	0.080
16...	--	--	6.97	6.29	0.130	0.110	7.10	6.40	0.160	0.160
30...	--	--	1.94	1.76	0.060	0.040	2.00	1.80	0.190	0.170
JAN										
30...	14	253	3.50	3.54	0.100	0.060	3.60	3.60	0.230	0.190
FEB										
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
MAR										
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
APR										
26...	--	--	0.960	--	0.140	--	1.10	--	0.460	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	0.530	--	0.170	--	0.700	--	0.460	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	0.680	--	0.120	--	0.800	--	0.420	--
27...	--	--	0.680	--	0.120	--	0.800	--	0.420	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	15	206	2.47	2.53	0.130	0.070	2.60	2.60	0.630	0.570
AUG										
07...	21	418	6.34	6.24	0.160	0.160	6.50	6.40	0.230	0.210
DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM
OCT										
04...	0.82	0.92	1.0	0.90	6.10	6.40	--	--	--	--
16...	1.7	1.6	1.8	1.9	0.590	0.510	--	--	--	--
30...	1.1	1.0	1.2	1.3	1.80	1.40	--	--	--	--
JAN										
30...	1.4	1.4	1.6	1.6	2.70	1.20	10	--	--	--
FEB										
21...	--	--	--	--	--	--	--	2140	16700	11
21...	--	--	--	--	--	--	--	2350	19400	18
21...	--	--	--	--	--	--	--	1640	13500	22
22...	--	--	--	--	--	--	--	1040	4660	24
22...	--	--	--	--	--	--	--	1140	4310	26
22...	--	--	--	--	--	--	--	979	3120	26
MAR										
29...	--	--	--	--	--	--	--	1480	5710	8
29...	--	--	--	--	--	--	--	1610	6560	13
29...	--	--	--	--	--	--	--	1340	5250	19
30...	--	--	--	--	--	--	--	500	1010	31
30...	--	--	--	--	--	--	--	430	714	33
30...	--	--	--	--	--	--	--	386	518	35
APR										
26...	1.3	--	--	1.8	0.970	--	--	--	--	--
26...	--	--	--	--	--	--	--	1990	12000	21
26...	1.0	--	--	1.5	0.750	--	--	--	--	--
26...	--	--	--	--	--	--	--	1500	9520	20
26...	--	--	--	--	--	--	--	943	5630	22
26...	1.1	--	--	1.5	0.860	--	--	--	--	--
27...	1.4	--	--	1.8	0.870	--	--	--	--	--
27...	--	--	--	--	--	--	--	505	1640	19
27...	--	--	--	--	--	--	--	558	1470	17
27...	--	--	--	--	--	--	--	428	901	19
MAY										
02...	1.6	1.6	2.2	2.2	1.90	1.90	14	--	--	--
AUG										
07...	1.8	1.1	1.3	2.0	4.50	4.20	6.4	--	--	--

SAN JACINTO RIVER BASIN

08069000 CYPRESS CREEK NEAR WESTFIELD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

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 mi².

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.--Records good except those for estimated daily discharges, which are fair. There are no large diversions above station. Rain gage and gage-height telemeter at station.

AVERAGE DISCHARGE.--51 years, 228 ft³/s (9.53 in/yr), 165,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,000 ft³/s Nov. 24, 1940 (gage height, 24.1 ft), present site and datum, from rating curve extended above 27,000 ft³/s; minimum daily, 3.0 ft³/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 ft³/s), present site and datum, from information by local residents.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 1	1100	*4,400	*16.10	June 4	0100	2,990	14.73
May 6	0200	3,260	15.04				

Minimum discharge, not determined.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	35	22	819	1110	725	4050	159	54	33	21	e14
2	19	23	23	451	1080	922	2840	102	948	33	20	e15
3	18	20	26	171	1130	1250	1000	325	2340	28	28	e17
4	18	19	23	163	1200	1430	706	1940	2420	25	25	e16
5	18	24	23	142	928	906	493	2440	430	44	22	e16
6	19	21	23	191	492	305	340	2990	192	37	19	e15
7	19	21	23	318	313	224	911	1410	128	37	18	e14
8	19	23	23	467	248	202	1330	283	97	29	17	e13
9	20	20	23	349	223	184	1340	213	79	26	17	e14
10	19	18	23	195	281	169	475	172	67	24	16	e30
11	18	17	23	141	295	149	237	144	58	23	16	e50
12	18	17	23	118	299	140	180	117	53	34	15	e32
13	17	22	23	103	231	173	141	102	49	37	15	e36
14	17	20	23	95	187	162	216	94	46	34	15	34
15	18	21	23	92	174	208	163	88	44	26	14	31
16	31	20	24	91	166	176	154	79	43	24	14	24
17	18	19	24	90	164	142	152	69	41	25	14	22
18	17	19	25	94	172	118	164	64	37	26	14	21
19	16	23	28	127	185	99	250	134	36	24	14	20
20	16	24	31	315	338	87	366	120	33	22	13	21
21	17	26	29	768	502	79	141	73	31	22	13	23
22	17	28	27	1060	810	75	94	62	29	23	17	21
23	18	28	26	781	1180	71	79	56	27	28	16	19
24	18	33	25	504	1450	68	69	49	26	33	16	18
25	18	29	24	766	933	65	67	45	25	28	16	17
26	18	27	26	989	260	61	96	42	26	24	15	16
27	18	27	29	814	173	59	495	39	41	22	14	16
28	18	25	30	350	162	75	1010	40	96	21	15	16
29	31	24	39	668	---	192	818	41	67	19	14	15
30	36	22	105	1170	---	795	454	38	41	19	13	15
31	35	---	292	1430	---	1730	---	36	---	19	e13	---
TOTAL	618	695	1131	13832	14686	11041	18831	11566	7604	849	509	631
MEAN	19.9	23.2	36.5	446	524	356	628	373	253	27.4	16.4	21.0
MAX	36	35	292	1430	1450	1730	4050	2990	2420	44	28	50
MIN	16	17	22	90	162	59	67	36	25	19	13	13
AC-FT	1230	1380	2240	27440	29130	21900	37350	22940	15080	1680	1010	1250
CFSM	.06	.07	.11	1.37	1.61	1.10	1.93	1.15	.78	.08	.05	.06
IN.	.07	.08	.13	1.58	1.68	1.26	2.16	1.32	.87	.10	.06	.07
CAL YR 1989	TOTAL	89002	MEAN	244	MAX	7470	MIN	16	AC-FT	176500	CFSM	.75
WTR YR 1990	TOTAL	81993	MEAN	225	MAX	4050	MIN	13	AC-FT	162600	CFSM	.69
										IN.	10.19	
											9.39	

e Estimated

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.--6 years, 274 ft³/s (9.59 in/yr), 198,500 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, 13 ft³/s Oct. 15-17, 1988.

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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 2	unknown	*e3,700	unknown	No other peak greater than base discharge.			
Minimum discharge, 16 ft ³ /s Aug. 31, Sept. 1-2.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	45	30	183	1210	e375	e2000	443	49	50	26	16
2	24	44	29	534	1150	e600	e3200	220	90	40	24	18
3	24	35	29	358	1000	e800	e1500	253	641	39	25	20
4	24	30	31	175	1010	e1000	e1000	1060	1390	35	26	23
5	23	33	31	153	1020	e1200	e700	1720	1770	31	29	22
6	23	46	30	151	790	e600	e500	1950	517	55	26	20
7	23	42	29	201	460	e350	e350	2370	232	39	23	18
8	23	32	29	276	293	e250	e700	1340	165	38	22	18
9	23	31	29	347	247	e220	1090	424	126	32	21	17
10	23	31	29	270	225	e200	1180	302	103	27	21	18
11	24	28	29	175	e270	e180	593	274	87	25	20	44
12	23	27	29	132	e280	e170	335	201	76	25	20	69
13	22	27	29	111	e300	e160	258	167	67	42	19	51
14	22	31	29	98	e230	e200	267	145	61	42	19	60
15	22	35	29	e97	190	e180	391	130	58	35	19	43
16	25	28	28	e96	179	e220	276	118	54	27	18	38
17	39	28	29	e95	170	e180	231	106	54	25	18	32
18	24	28	30	e94	172	e160	216	93	50	26	18	27
19	23	28	30	e100	182	129	226	84	47	25	18	25
20	22	35	31	235	190	e117	301	144	44	24	18	24
21	22	38	34	327	248	e105	357	137	40	22	18	23
22	22	34	34	569	438	e93	189	94	39	21	17	24
23	23	35	33	772	679	81	134	81	36	40	23	23
24	23	35	32	641	908	74	113	73	35	34	29	22
25	23	38	31	510	1140	70	100	66	36	34	21	20
26	23	37	30	636	791	65	108	60	38	32	19	20
27	23	34	31	785	290	63	383	56	34	27	19	19
28	23	33	32	666	e184	102	572	55	39	25	18	19
29	24	32	34	406	---	363	854	57	85	24	17	19
30	43	31	36	633	---	e500	720	55	71	27	17	18
31	57	---	52	946	---	e1000	---	52	---	51	16	---
TOTAL	785	1011	968	10772	14246	9807	18844	12330	6134	1019	644	810
MEAN	25.3	33.7	31.2	347	509	316	628	398	204	32.9	20.8	27.0
MAX	57	46	52	946	1210	1200	3200	2370	1770	55	29	69
MIN	22	27	28	94	170	63	100	52	34	21	16	16
AC-FT	1560	2010	1920	21370	28260	19450	37380	24460	12170	2020	1280	1610
CFSM	.07	.09	.08	.90	1.31	.82	1.62	1.03	.53	.08	.05	.07
IN.	.08	.10	.09	1.03	1.37	.94	1.81	1.18	.59	.10	.06	.08

CAL YR 1989	TOTAL	110574	MEAN	303	MAX	12800	MIN	22	AC-FT	219300	CFSM	.78	IN.	10.60
WTR YR 1990	TOTAL	77370	MEAN	212	MAX	3200	MIN	16	AC-FT	153500	CFSM	.55	IN.	7.42

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 current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1984 to current year.

WATER TEMPERATURE: June 1984 to current year.

INSTRUMENTATION.--Beginning 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. Monthly means and annual concentrations and loads of dissolved sulfate were not calculated for some months because of a poor relationship between specific conductance and dissolved sulfate. 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, 424 microsiemens May 20; minimum, 55 microsiemens May 4.

WATER TEMPERATURE: Maximum, 32.0°C Aug. 21; minimum, 1.0°C Dec. 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	
OCT											
04...	1130	23	211	6.7	23.0	8.5	97	--	--	--	
17...	1310	43	195	6.7	22.5	7.6	86	--	--	--	
31...	1530	64	163	6.6	19.5	8.6	92	--	--	--	
FEB											
01...	1235	1200	105	6.5	12.0	9.3	87	2.0	580	1700	
JUL											
11...	1145	25	195	6.4	27.5	6.9	87	1.1	620	680	
AUG											
08...	1215	22	214	7.1	26.0	8.8	108	1.2	120	K12	
DATE		HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (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 CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT											
04...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
01...	33	10	11	1.4	7.9	0.6	2.8	23	15	12	
JUL											
11...	47	14	15	2.2	19	1	1.9	33	3.3	38	
AUG											
08...	38	8	12	2.0	24	2	1.5	30	3.6	45	
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)	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)
OCT											
04...	--	--	--	0.190	--	0.010	<0.010	0.200	0.200	0.210	0.020
17...	--	--	--	0.180	0.200	0.020	0.010	0.200	0.200	0.210	0.030
31...	--	--	--	0.190	--	0.010	<0.010	0.200	0.200	0.200	0.020
FEB											
01...	0.10	9.5	74	--	--	0.040	<0.010	<0.100	<0.100	0.060	
JUL											
11...	<0.10	11	112	0.280	--	0.020	<0.010	0.300	0.300	0.040	
AUG											
08...	<0.10	10	118	0.280	--	0.020	<0.010	0.300	0.300	0.020	

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 04...	0.021	0.18	0.18	0.20	0.20	0.100	0.070	--	--	--
17...	0.020	0.47	0.38	0.40	0.50	0.160	0.110	--	--	--
31...	<0.010	0.38	--	0.30	0.40	0.170	0.080	--	--	--
FEB 01...	0.060	0.84	0.84	0.90	0.90	0.090	0.090	18	230	21
JUL 11...	0.040	0.36	0.36	0.40	0.40	0.150	0.090	5.3	81	65
AUG 08...	0.020	1.3	0.28	0.30	1.3	0.130	0.070	3.5	250	72

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	785	192	115	244	33	70	12	24	45
NOV. 1989	1011	167	103	280	27	73	12	34	42
DEC. 1989	968	185	112	292	31	81	12	31	44
JAN. 1990	10772	182	107	3100	33	952	--	--	40
FEB. 1990	14246	132	84	3220	20	773	11	440	35
MAR. 1990	9807	212	120	3180	40	1060	--	--	43
APR. 1990	18844	124	79	4010	18	940	11	569	34
MAY 1990	12330	149	87	2880	27	898	--	--	33
JUNE 1990	6134	146	88	1460	24	405	9.4	156	35
JULY 1990	1019	209	122	336	38	104	9.8	27	46
AUG. 1990	644	203	119	207	36	62	10	18	46
SEPT 1990	810	178	108	236	30	65	12	26	43
TOTAL	77370	**	**	19400	**	5490	**	--	**
WTD.AVG.	212	155	93	**	26	**	--	**	37

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	216	210	212	175	152	163	169	166	167	229	134	180
2	216	209	212	204	140	155	173	168	169	239	134	180
3	214	208	211	159	136	143	178	174	175	267	157	219
4	211	205	208	160	152	157	179	175	177	286	266	277
5	208	204	206	161	121	153	181	176	178	310	287	302
6	206	203	204	191	133	154	183	179	181	319	302	310
7	206	199	203	169	143	149	191	183	186	322	302	312
8	200	194	197	151	142	145	192	190	191	324	288	306
9	201	195	197	159	148	156	194	190	192	353	260	323
10	201	196	198	163	152	155	192	186	189	315	273	302
11	201	196	198	181	165	175	190	187	188	307	302	304
12	199	196	198	185	181	182	195	190	192	312	302	308
13	202	195	198	186	180	183	198	194	196	317	310	314
14	198	194	196	180	175	178	199	194	197	317	313	315
15	198	189	194	188	175	177	195	189	192	316	311	315
16	194	185	187	179	176	178	190	188	189	315	310	313
17	194	187	189	180	177	178	194	191	192	313	308	310
18	193	187	188	179	169	173	193	190	192	309	305	307
19	191	186	188	177	171	174	193	189	191	305	251	293
20	199	174	188	179	175	177	189	185	187	253	184	231
21	187	164	178	177	174	176	188	185	187	225	162	190
22	172	161	163	176	169	173	193	186	187	199	91	160
23	186	173	180	169	165	167	190	184	187	136	72	101
24	194	183	187	174	165	171	184	179	182	157	109	141
25	210	188	192	174	170	172	182	178	180	149	118	136
26	198	189	193	181	172	174	180	178	179	156	120	141
27	194	189	191	201	170	177	182	179	181	147	117	131
28	195	188	190	170	164	167	186	182	183	140	117	130
29	191	179	186	169	166	168	192	184	188	151	136	145
30	188	177	182	169	166	168	188	177	183	145	110	134
31	195	158	170	---	---	---	180	175	177	110	96	104
MONTH	216	158	193	204	121	167	199	166	185	353	72	233

SAN JACINTO RIVER BASIN

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

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	100	90	97	226	122	158	116	90	101	154	149	151
2	104	86	98	243	101	155	89	81	85	163	151	156
3	103	86	95	277	182	241	102	81	87	175	89	152
4	116	99	110	240	177	221	158	97	121	83	55	71
5	118	104	116	206	184	200	160	125	136	71	59	64
6	129	116	121	206	140	171	144	125	133	78	71	74
7	143	130	138	187	136	161	172	144	160	163	77	112
8	154	143	148	228	179	207	180	97	127	227	112	166
9	162	155	158	246	221	236	101	96	97	245	137	184
10	167	159	164	271	246	255	109	84	99	157	140	149
11	179	167	174	306	272	288	124	103	112	178	157	163
12	177	162	173	319	302	313	161	125	141	360	169	222
13	211	163	186	316	287	303	193	162	179	393	233	370
14	220	212	217	288	280	284	209	152	179	399	390	396
15	229	215	222	284	251	268	193	122	156	399	391	395
16	218	207	212	293	253	266	163	134	142	398	391	395
17	208	204	206	289	241	276	223	166	191	400	392	396
18	207	203	206	349	283	320	259	215	234	403	397	399
19	210	204	208	369	340	353	271	226	260	410	402	407
20	229	210	223	395	362	377	268	218	245	424	411	417
21	246	208	225	393	379	386	268	145	189	418	373	398
22	250	152	197	394	384	388	166	145	154	372	278	329
23	150	118	135	386	378	382	186	163	175	300	272	284
24	121	109	116	389	379	381	210	186	197	325	302	317
25	108	98	106	380	377	379	230	210	219	334	315	324
26	124	105	114	378	374	376	237	163	218	354	331	342
27	147	122	135	377	374	376	215	111	156	367	353	360
28	161	149	156	381	194	334	145	112	129	376	367	371
29	---	---	---	175	89	130	144	118	132	378	370	373
30	---	---	---	88	78	81	159	143	151	376	364	371
31	---	---	---	147	84	119	---	---	---	366	354	358
MONTH	250	86	159	395	78	270	271	81	157	424	55	280
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	354	347	349	215	179	192	167	151	160	123	105	117
2	356	349	350	278	220	257	150	123	136	216	109	193
3	360	91	180	311	279	295	191	150	170	215	208	212
4	93	56	78	310	295	303	202	192	196	217	208	211
5	111	58	89	294	280	287	209	202	205	216	186	205
6	151	110	130	283	266	279	214	208	211	195	188	192
7	186	153	170	262	214	232	217	213	215	196	184	190
8	214	188	202	241	178	210	216	210	213	193	100	168
9	228	212	221	201	168	179	209	200	204	196	101	124
10	243	155	229	207	201	205	203	199	201	201	103	173
11	250	241	247	201	197	199	209	202	206	198	187	194
12	262	248	256	205	191	201	210	205	208	197	187	192
13	269	258	264	205	182	189	218	210	212	198	166	186
14	270	262	267	258	176	189	229	218	222	164	149	154
15	270	266	268	206	195	202	233	229	232	154	147	151
16	277	268	272	205	175	193	233	227	231	149	145	146
17	271	263	267	196	174	184	228	225	226	166	150	158
18	270	265	268	199	161	186	235	227	231	176	166	169
19	268	265	266	187	184	185	243	234	236	188	177	182
20	265	261	263	185	178	181	237	233	235	187	178	182
21	262	258	261	191	180	184	236	232	235	180	175	178
22	262	255	259	196	192	194	236	232	234	200	178	186
23	263	254	259	220	100	169	241	232	234	199	197	198
24	274	259	263	192	159	178	236	230	232	200	192	196
25	284	238	261	198	192	195	237	225	231	198	186	192
26	260	243	251	195	191	193	230	213	220	193	182	188
27	272	250	260	202	194	197	215	191	200	188	179	183
28	255	249	253	207	199	204	190	100	167	182	177	180
29	263	247	252	198	190	195	103	97	100	182	173	178
30	248	208	231	190	159	183	208	103	160	176	132	163
31	---	---	---	172	153	164	122	101	109	---	---	---
MONTH	360	56	240	311	100	207	243	97	202	217	100	178

SAN JACINTO RIVER BASIN

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

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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

SAN JACINTO RIVER BASIN

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

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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

SAN JACINTO RIVER BASIN

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 mi².

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.--47 years, 76.1 ft³/s (9.84 in/yr), 55,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s June 14, 1973 (gage height, 26.30 ft); minimum, 4.1 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 5	1500	*2,050	*13.73	No other peak greater than base discharge.			
Minimum discharge, 7.7 ft ³ /s Aug. 29, 30; Sept. 2.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	12	24	16	85	82	479	89	39	25	15	15	8.7		
2	12	18	16	46	247	449	62	32	72	15	24	8.7		
3	12	16	16	39	198	267	49	115	35	14	21	9.3		
4	12	16	16	43	130	117	41	1090	27	14	13	9.6		
5	12	16	16	38	81	85	37	1140	25	14	12	9.4		
6	12	16	16	50	62	72	39	133	23	15	11	9.0		
7	13	18	16	84	54	66	247	83	21	15	11	8.7		
8	13	19	16	90	50	67	71	66	20	15	11	8.8		
9	13	17	16	56	45	64	47	66	20	14	11	9.5		
10	12	16	16	42	68	57	42	58	18	14	11	18		
11	12	15	17	36	90	54	40	48	18	13	11	22		
12	12	15	17	33	54	51	35	45	17	13	12	16		
13	12	15	17	29	44	56	31	45	17	14	11	13		
14	12	16	16	27	41	58	49	47	17	15	11	13		
15	11	16	16	25	40	68	46	40	20	14	10	11		
16	11	16	16	24	42	60	35	35	19	14	10	11		
17	11	15	16	24	39	48	30	32	18	14	10	11		
18	11	15	17	25	37	43	27	30	17	15	11	11		
19	11	18	18	86	88	39	27	83	17	14	11	11		
20	11	19	18	261	90	37	27	56	15	13	10	12		
21	11	19	18	284	112	35	24	45	15	15	10	15		
22	11	19	18	80	751	35	24	36	14	17	13	12		
23	11	20	18	51	420	34	23	31	14	18	14	12		
24	12	22	18	152	105	33	21	28	14	17	20	10		
25	13	20	17	669	77	32	20	28	14	16	14	9.0		
26	13	19	18	136	64	31	28	26	17	14	11	8.5		
27	13	18	18	70	59	30	146	26	22	13	10	8.5		
28	13	17	19	59	56	36	198	25	18	12	9.0	8.5		
29	14	17	20	487	---	81	217	25	16	11	8.8	11		
30	23	16	50	381	---	382	56	25	15	11	8.3	9.0		
31	29	---	428	91	---	306	---	25	---	11	8.6	---		
TOTAL	400	523	970	3603	3226	3272	1828	3603	620	439	373.7	334.2		
MEAN	12.9	17.4	31.3	116	115	106	60.9	116	20.7	14.2	12.1	11.1		
MAX	29	24	428	669	751	479	247	1140	72	18	24	22		
MIN	11	15	16	24	37	30	20	25	14	11	8.3	8.5		
AC-FT	793	1040	1920	7150	6400	6490	3630	7150	1230	871	741	663		
CFSM	.12	.17	.30	1.11	1.10	1.01	.58	1.11	.20	.13	.11	.11		
IN.	.14	.19	.34	1.28	1.14	1.16	.65	1.28	.22	.16	.13	.12		
CAL YR 1989	TOTAL	24836	MEAN	68.0	MAX	2450	MIN	11	AC-FT	49260	CFSM	.65	IN.	8.80
WTR YR 1990	TOTAL	19191.9	MEAN	52.6	MAX	1140	MIN	8.3	AC-FT	38070	CFSM	.50	IN.	6.80

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 1989 TO SEPTEMBER 1990

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, FECAI, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, BIO-KF AGAR (COLS. PER 100 ML)	
OCT											
06...	1400	13	94	6.7	23.5	8.9	103	--	--	--	
16...	1425	12	94	6.6	23.5	8.8	103	--	--	--	
30...	1330	26	84	6.3	19.5	7.9	85	--	--	--	
FEB											
01...	1100	67	160	6.6	15.0	9.2	91	1.1	150	270	
22...	0700	552	--	--	--	--	--	--	--	--	
22...	1500	916	--	--	--	--	--	--	--	--	
22...	2300	1170	--	--	--	--	--	--	--	--	
23...	0300	1030	--	--	--	--	--	--	--	--	
MAY											
01...	1321	40	143	6.4	23.5	7.4	87	1.7	190	490	
AUG											
08...	1015	11	97	7.3	23.5	5.8	68	0.8	56	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)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	
OCT											
06...	--	--	--	--	--	--	--	--	--	--	
16...	--	--	--	--	--	--	--	--	--	--	
30...	--	--	--	--	--	--	--	--	--	--	
FEB											
01...	56	15	19	2.0	9.5	0.6	2.2	41	12	17	
22...	--	--	--	--	--	--	--	--	--	--	
22...	--	--	--	--	--	--	--	--	--	--	
22...	--	--	--	--	--	--	--	--	--	--	
23...	--	--	--	--	--	--	--	--	--	--	
MAY											
01...	42	3	14	1.6	8.4	0.6	1.8	39	4.0	16	
AUG											
08...	21	2	6.1	1.3	8.5	0.8	1.1	19	2.1	13	
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)	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)
OCT											
06...	--	--	--	--	--	--	<0.010	<0.010	0.200	0.200	0.020
16...	--	--	--	--	0.180	--	<0.010	<0.010	0.200	0.200	0.020
30...	--	--	--	--	--	--	<0.010	<0.010	0.200	0.180	0.020
FEB											
01...	0.10	13	101	0.190	0.190	0.010	0.010	0.200	0.200	0.040	0.160
22...	--	--	--	0.00	--	0.140	--	0.100	--	0.090	0.060
22...	--	--	--	0.00	--	0.110	--	0.100	--	0.060	0.070
22...	--	--	--	0.040	--	0.060	--	0.100	--	0.060	0.070
23...	--	--	--	0.040	--	0.060	--	0.100	--	0.060	0.070
MAY											
01...	<0.10	13	84	0.180	--	0.020	<0.010	0.200	0.200	0.060	0.020
AUG											
08...	<0.10	13	58	0.290	--	0.010	<0.010	0.300	0.300	0.020	0.020
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-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT											
06...	0.010	0.18	0.19	0.20	0.20	0.080	0.050	--	--	--	--
16...	<0.010	0.28	--	<0.20	0.30	0.030	0.030	--	--	--	--
30...	<0.010	0.38	--	0.40	0.40	0.050	0.050	--	--	--	--
FEB											
01...	0.040	0.46	0.46	0.50	0.50	0.050	0.030	8.2	290	42	--
22...	--	1.1	--	--	1.3	0.080	--	--	--	--	--
22...	--	0.71	--	--	0.80	0.170	--	--	--	--	--
22...	--	0.54	--	--	0.60	0.150	--	--	--	--	--
23...	--	0.73	--	--	0.80	0.140	--	--	--	--	--
MAY											
01...	0.060	0.64	0.64	0.70	0.70	0.090	0.070	8.9	320	50	--
AUG											
08...	0.020	0.48	0.28	0.30	0.50	0.050	0.020	2.2	270	36	--

SAN JACINTO RIVER BASIN

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 north-east 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.--6 years, 192 ft³/s (11.96 in/yr), 139,100 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 1	1400	*1,780	*21.78	May 7	1100	1,670	21.57

Minimum discharge, 0.26 ft³/s Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.71	172	3.1	1.9	222	188	1690	425	5.1	1.7	4.7	1.1		
2	.75	129	2.6	2.0	291	369	1370	163	2.6	1.4	3.2	1.1		
3	.77	62	2.3	4.6	406	465	921	82	2.7	1.3	2.3	1.5		
4	.77	31	1.8	4.5	576	482	455	471	1.8	1.2	1.6	1.9		
5	.84	24	1.6	3.8	641	382	169	794	3.3	1.1	4.4	2.9		
6	.89	316	1.5	4.6	492	213	115	1130	3.9	1.1	3.7	3.0		
7	.88	231	1.5	21	361	119	92	1610	1.7	1.1	1.8	2.0		
8	.89	184	2.7	82	162	84	92	1300	1.5	4.6	1.1	7.3		
9	.84	184	1.8	96	113	72	91	903	1.5	7.2	.89	1.6		
10	.79	149	1.6	66	113	66	223	465	1.7	4.1	.77	.78		
11	.77	89	1.2	40	137	59	515	137	1.9	2.7	.77	1.8		
12	.70	47	1.2	27	133	49	315	72	2.0	2.4	.79	1.8		
13	.66	30	1.1	17	102	79	181	48	5.6	8.1	.89	1.4		
14	.63	20	1.1	11	66	166	159	37	2.2	4.9	.96	13		
15	.65	13	1.1	7.4	53	193	214	27	1.6	19	1.0	9.4		
16	1.0	9.1	1.1	5.7	48	183	271	20	1.6	7.6	1.0	4.7		
17	8.2	7.7	.97	4.6	43	166	226	16	4.5	3.5	1.0	8.1		
18	69	8.4	1.1	3.9	38	114	114	13	1.7	4.0	1.0	8.3		
19	53	7.2	1.2	6.0	37	75	60	10	1.2	2.1	1.1	7.1		
20	28	7.1	1.2	69	40	53	44	8.7	1.2	1.5	1.1	5.0		
21	10	7.5	1.2	275	44	41	36	7.6	1.2	1.3	1.1	3.8		
22	4.6	7.9	1.2	370	57	32	28	7.2	1.2	1.2	1.3	2.5		
23	2.6	14	1.2	323	118	24	20	7.6	1.3	2.0	1.2	1.6		
24	1.8	15	1.2	156	133	19	15	6.0	1.3	8.6	1.2	.98		
25	1.4	15	1.3	231	99	15	12	5.1	1.4	3.7	1.1	.70		
26	1.2	13	1.3	313	64	13	14	8.0	2.0	2.6	.91	.54		
27	.98	9.8	1.4	323	47	11	180	7.6	1.6	2.1	.80	.46		
28	.91	7.0	1.4	204	39	17	258	4.2	3.5	2.7	.77	.40		
29	.97	5.5	1.5	198	---	201	354	6.3	2.5	3.2	.77	.34		
30	4.1	3.9	1.5	251	---	733	438	12	1.9	4.9	.86	.29		
31	94	---	1.7	270	---	1250	---	6.3	---	8.0	.97	---		
TOTAL	293.30	1819.1	46.67	3392.0	4675	5933	8672	7809.6	67.2	120.9	45.05	95.39		
MEAN	9.46	60.6	1.51	109	167	191	289	252	2.24	3.90	1.45	3.18		
MAX	94	316	3.1	370	641	1250	1690	1610	5.6	19	4.7	13		
MIN	.63	3.9	.97	1.9	37	11	12	4.2	1.2	1.1	.77	.29		
AC-FT	582	3610	93	6730	9270	11770	17200	15490	133	240	89	189		
CFSM	.04	.28	.01	.50	.77	.88	1.33	1.16	.01	.02	.01	.01		
IN.	.05	.31	.01	.58	.80	1.01	1.48	1.33	.01	.02	.01	.02		
CAL YR 1989	TOTAL	105414.21	MEAN	289	MAX	19600	MIN	.10	AC-FT	209100	CFSM	1.32	IN.	17.99
WTR YR 1990	TOTAL	32969.21	MEAN	90.3	MAX	1690	MIN	.29	AC-FT	65390	CFSM	.41	IN.	5.63

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 1989 TO SEPTEMBER 1990

		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)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 06...	1215	0.88	225	6.6	23.0	3.3	38	--	--	--
17...	1405	1.8	387	6.9	22.5	2.9	33	--	--	--
FEB 02...	1124	280	76	7.2	15.5	8.0	80	2.3	2500	2900
APR 10...	1200	181	--	--	--	--	--	--	--	--
10...	2000	416	--	--	--	--	--	--	--	--
11...	1200	544	--	--	--	--	--	--	--	--
12...	0800	341	--	--	--	--	--	--	--	--
JUL 11...	1007	2.8	278	6.7	27.0	4.2	52	1.1	84	150
AUG 08...	1155	1.1	257	6.7	25.0	5.4	65	1.1	44	88
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)
OCT 06...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
FEB 02...	21	12	6.2	1.4	7.3	0.7	2.2	9.0	11	12
APR 10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
JUL 11...	60	0	19	3.1	31	2	2.5	64	6.2	39
AUG 08...	76	7	26	2.8	22	1	1.1	69	5.1	34
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)	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)
OCT 06...	--	--	--	--	--	<0.010	<0.010	<0.100	<0.100	0.020
17...	--	--	--	--	--	0.010	0.010	<0.100	<0.100	0.020
FEB 02...	0.10	5.3	52	0.060	0.090	0.040	0.010	0.100	0.100	0.080
APR 10...	--	--	--	0.160	--	0.040	--	0.200	--	<0.010
10...	--	--	--	0.150	--	0.050	--	0.200	--	0.050
11...	--	--	--	0.060	--	0.040	--	0.100	--	<0.010
12...	--	--	--	0.070	--	0.030	--	0.100	--	0.020
JUL 11...	<0.10	7.4	148	0.280	0.290	0.020	0.010	0.300	0.300	0.050
AUG 08...	0.10	7.6	141	--	--	<0.010	<0.010	<0.100	0.100	0.040
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)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DIS-SOLVED (UG/L AS Fe)	MANGA-NESE, DIS-SOLVED (UG/L AS Mn)
OCT 06...	0.020	0.48	0.28	0.30	0.50	0.060	0.040	--	--	--
17...	0.010	0.48	0.49	0.50	0.50	0.030	0.020	--	--	--
FEB 02...	0.080	1.8	--	<0.20	1.9	0.070	0.080	23	500	45
APR 10...	--	--	--	--	1.8	0.120	--	--	--	--
10...	--	1.5	--	--	1.6	0.090	--	--	--	--
11...	--	--	--	--	1.3	0.070	--	--	--	--
12...	--	1.5	--	--	1.5	0.070	--	--	--	--
JUL 11...	0.060	0.65	0.34	0.40	0.70	0.060	0.040	13	250	75
AUG 08...	0.040	0.96	0.66	0.70	1.0	0.070	0.060	6.4	120	150

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, 167,100 acre-ft May 5 at 1000 hours (gage height, 46.09 ft); minimum, 115,300 acre-ft Oct. 29 (gage height, 41.72 ft).

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

41.0	107,900	44.0	140,700	46.0	165,900
42.0	118,200	45.0	152,900	47.0	179,600
43.0	129,100				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	124000	120400	124300	118400	160700	159400	164900	156500	150100	145500	140100	124400
2	123800	121000	124100	120400	161000	161900	167000	156400	150200	145000	140100	124300
3	123400	120700	123600	121900	160800	162100	164700	159100	151100	144200	139800	124000
4	123400	120600	123200	123100	160400	161300	160200	166300	153700	143600	139500	123200
5	122900	121100	123000	124100	160100	160700	157600	165800	156000	143300	139300	123900
6	122800	122200	122900	126400	158600	158500	156800	161900	155200	142900	139000	124500
7	123200	123200	122700	128300	156900	156800	155900	159700	154300	142700	138400	124000
8	122300	124000	122300	130000	156000	156100	156400	156700	153700	142300	137600	123400
9	122000	123800	121700	131700	155900	155800	156900	156400	153200	141800	136900	123400
10	121700	123900	121600	132300	155200	155200	158400	156000	152400	141300	136200	124200
11	121100	123800	121400	133000	155600	155100	157200	155200	151800	140500	135500	124500
12	120900	123500	121000	133400	156000	155400	155500	155500	151200	140600	134900	124800
13	120400	123400	120600	132900	156100	155200	155000	154600	150600	140500	134200	125600
14	120300	123100	120400	133000	155600	156000	155800	154200	150000	139900	133500	125500
15	120400	123600	120200	133200	155500	155800	156800	154200	149400	139400	132900	125200
16	120600	122800	119600	133300	154500	155500	156400	154100	148600	139200	132300	125100
17	120500	122500	119500	133500	154500	154800	155800	153800	148400	138800	131700	125400
18	119800	122300	119300	133500	155100	154300	154600	153300	147900	138500	131100	126700
19	119000	122600	119200	136100	155000	153800	154200	153700	147400	138100	130600	127100
20	118200	122800	118700	138700	155900	153200	154100	154100	146900	137900	130100	127800
21	117900	123100	118500	143600	158400	151900	153300	154200	146300	138500	129600	127800
22	117500	124100	118200	148800	163000	152400	153800	153900	145800	138600	128900	128400
23	117200	123900	117500	152200	163200	152200	153200	153300	145600	140400	128800	128300
24	116900	124000	117000	156100	163000	152500	152900	152800	145000	140500	128300	127400
25	116400	124000	116900	158400	162900	152000	152400	152400	145200	140200	127700	127000
26	116100	124200	116400	159800	160700	151400	156400	152200	145300	140000	127400	126700
27	115800	125100	116100	159100	157300	150800	159400	151900	145900	139800	126500	126300
28	115600	125900	115800	158500	157300	155400	157400	151800	145800	139200	125700	126000
29	116900	125100	115800	158000	---	159100	157300	151200	145500	138800	125000	125500
30	118100	124800	116000	159800	---	163300	156500	150800	145600	139300	124400	125200
31	119300	---	116800	159900	---	163600	---	150700	---	140400	124100	---
MAX	124000	125900	124300	159900	163200	163600	167000	166300	156000	145500	140100	128400
MIN	115600	120400	115800	118400	154500	150800	152400	150700	145000	137900	124100	123200
(↑)	42.10	42.61	41.86	45.54	45.34	45.82	45.28	44.82	44.40	43.97	42.54	42.64
(Φ)	-5400	+5500	-8000	+43100	-2600	+6300	-7100	-5800	-5100	-5200	-16300	+1100
(↑↑)	15220	13100	15010	15160	12950	14360	14010	15300	17810	17320	18010	14460

CAL YR 1989 MAX 212100 MIN 115300 (Φ) -1600 (↑↑) 178700
WTR YR 1990 MAX 167000 MIN 115600 (Φ) +500 (↑↑) 182800

(↑) Gage height, in feet, at end of month.

(Φ) Change in contents, in acre-feet.

(↑↑) Diversions in acre-feet, for municipal and industrial use 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 1989 TO SEPTEMBER 1990

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT												
06...	0900	1.00	175	7.3	24.0	0.50	--	--	6.3	74	--	--
06...	0901	0.82	--	--	--	--	--	--	--	--	--	--
06...	0902	5.00	175	7.2	23.5	--	--	--	5.9	69	--	--
06...	0904	10.0	175	7.2	23.5	--	--	--	5.6	65	--	--
06...	0906	15.0	180	7.2	23.5	--	--	--	5.1	60	--	--
06...	0908	20.0	185	7.0	23.5	--	--	--	4.7	55	--	--
06...	0910	25.0	185	7.0	23.5	--	--	--	4.6	54	--	--
06...	0912	30.0	190	7.0	23.5	--	--	--	4.3	50	--	--
06...	0914	42.0	195	7.0	23.5	--	--	--	3.0	35	--	--
17...	0941	1.00	185	7.4	23.5	0.47	--	--	6.3	73	--	--
17...	0942	0.77	--	--	--	--	--	--	--	--	--	--
17...	0943	5.00	185	7.4	23.5	--	--	--	6.2	72	--	--
17...	0945	10.0	185	7.4	23.5	--	--	--	6.5	76	--	--
17...	0947	15.0	185	7.4	23.5	--	--	--	6.5	76	--	--
17...	0949	25.0	185	7.4	23.5	--	--	--	6.4	75	--	--
17...	0951	38.0	185	7.4	23.5	--	--	--	6.3	73	--	--
NOV												
03...	0940	1.00	195	7.5	19.0	0.30	--	--	7.7	82	--	--
03...	0941	0.49	--	--	--	--	100	38	--	--	--	--
03...	0942	5.00	195	7.5	19.0	--	--	--	7.6	81	--	--
03...	0944	10.0	195	7.5	19.0	--	--	--	7.6	81	--	--
03...	0946	15.0	195	7.5	18.5	--	--	--	7.6	80	--	--
03...	0948	20.0	195	7.5	18.5	--	--	--	7.5	79	--	--
03...	0950	25.0	195	7.5	18.5	--	--	--	7.4	78	--	--
03...	0952	30.0	195	7.5	18.5	--	--	--	7.4	78	--	--
03...	0954	35.0	195	7.4	18.5	--	--	--	7.4	78	--	--
03...	0956	42.0	195	7.2	18.0	--	--	--	7.4	77	--	--
DEC												
20...	0920	1.00	212	7.6	7.5	0.23	100	47	10.4	85	--	--
20...	0922	10.0	212	7.6	7.5	--	--	--	10.5	86	--	--
20...	0924	20.0	212	7.5	7.5	--	--	--	10.5	86	--	--
20...	0926	30.0	212	7.3	7.5	--	--	--	10.4	85	--	--
20...	0928	44.0	212	7.2	7.5	--	--	--	10.4	85	--	--
JAN												
29...	0922	1.00	245	7.6	14.0	0.29	180	44	9.2	88	650	680
29...	0923	0.48	--	--	--	--	--	--	--	--	--	--
29...	0924	10.0	245	7.6	14.0	--	--	--	9.2	88	--	--
29...	0926	20.0	245	7.6	14.0	--	--	--	9.2	88	--	--
29...	0928	30.0	245	7.5	14.0	--	--	--	9.2	88	--	--
29...	0930	45.0	245	7.6	14.0	--	--	--	9.2	88	--	--
MAR												
26...	1425	1.00	180	7.5	19.5	0.40	90	30	8.4	90	--	--
26...	1426	0.66	--	--	--	--	--	--	--	--	--	--
26...	1427	5.00	180	7.4	19.5	--	--	--	8.4	90	--	--
26...	1429	10.0	180	7.4	19.5	--	--	--	8.4	90	--	--
26...	1431	15.0	180	7.4	19.0	--	--	--	8.3	88	--	--
26...	1433	20.0	180	7.4	19.0	--	--	--	8.3	88	--	--
26...	1435	25.0	180	7.4	19.0	--	--	--	8.3	88	--	--
26...	1437	30.0	180	7.4	19.0	--	--	--	8.2	87	--	--
26...	1439	35.0	180	7.4	19.0	--	--	--	8.2	87	--	--
26...	1441	40.0	180	7.4	19.0	--	--	--	8.1	86	--	--
26...	1443	45.0	180	7.4	18.5	--	--	--	7.6	79	--	--
MAY												
02...	0925	1.00	165	7.4	25.0	0.38	100	33	6.8	82	84	84
02...	0926	0.62	--	--	--	--	--	--	--	--	--	--
02...	0927	5.00	165	7.3	25.0	--	--	--	6.8	82	--	--
02...	0929	10.0	165	7.3	25.0	--	--	--	6.8	82	--	--
02...	0931	15.0	165	7.3	25.0	--	--	--	6.8	82	--	--
02...	0933	20.0	165	7.2	24.5	--	--	--	6.2	74	--	--
02...	0935	30.0	165	7.0	23.5	--	--	--	5.4	63	--	--
02...	0937	38.0	160	7.1	23.0	--	--	--	4.9	57	--	--
02...	0939	42.0	160	7.0	22.5	--	--	--	4.4	51	--	--
02...	0941	43.0	160	7.0	22.5	--	--	--	4.4	51	--	--
02...	0943	44.0	160	7.0	21.5	--	--	--	2.5	28	--	--
02...	0945	45.0	165	6.9	21.0	--	--	--	1.4	16	--	--
02...	0947	46.0	165	6.9	21.0	--	--	--	1.2	13	--	--
JUN												
15...	1015	1.00	130	7.2	30.0	0.39	170	36	6.5	85	--	--
15...	1016	0.64	--	--	--	--	--	--	--	--	--	--
15...	1017	5.00	130	7.0	29.5	--	--	--	6.2	81	--	--
15...	1019	10.0	130	7.0	29.5	--	--	--	5.6	73	--	--
15...	1021	15.0	130	6.9	29.0	--	--	--	5.2	67	--	--
15...	1023	20.0	130	6.9	29.0	--	--	--	4.6	59	--	--
15...	1025	25.0	130	6.8	28.5	--	--	--	4.6	59	--	--
15...	1027	30.0	130	6.8	28.5	--	--	--	4.2	54	--	--
15...	1029	35.0	130	6.7	28.0	--	--	--	3.3	42	--	--
15...	1031	38.0	130	6.7	28.0	--	--	--	2.9	37	--	--
15...	1033	40.0	130	6.6	28.0	--	--	--	2.1	27	--	--

295516095080801 - LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT												
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
29...	50	0	16	2.4	29	2	3.0	51	12	35	0.10	13
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	49	0	16	2.3	27	2	3.0	50	12	34	0.10	12
MAR												
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
02...	48	7	16	1.9	13	0.8	2.3	41	7.1	20	<0.10	7.7
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	51	3	17	2.0	13	0.8	2.4	48	6.8	19	<0.10	9.1
JUN												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--

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295516095080801 - LAKE HOUSTON SITE AC--Continued

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C., SUS- PENDED (MG/L)	RESIDUE VOLATILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE 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)
OCT												
06...	--	--	--	--	--	--	0.020	<0.010	<0.100	<0.100	0.030	0.030
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	0.080	--	0.020	--	0.100	--	0.050	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	0.170	0.170	0.030	0.010	0.200	0.180	0.090	0.090
17...	--	--	--	--	0.080	--	0.020	<0.010	0.100	<0.100	0.050	0.040
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	0.080	--	0.020	--	0.100	--	0.050	--
17...	--	--	--	--	0.010	--	0.090	0.010	0.100	<0.100	0.180	0.180
NOV												
03...	--	--	--	--	0.180	--	0.020	<0.010	0.200	0.200	0.030	0.030
03...	--	19	3	16	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	0.180	--	0.020	--	0.200	--	0.030	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	0.180	--	0.020	<0.010	0.200	0.200	0.030	0.010
DEC												
20...	--	16	16	0	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
29...	144	30	3	27	0.650	0.620	0.050	0.020	0.700	0.640	0.030	0.010
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	139	--	--	--	0.550	0.590	0.050	0.010	0.600	0.600	0.040	0.010
MAR												
26...	--	19	12	7	--	--	--	<0.010	--	0.400	--	<0.010
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
02...	94	16	13	3	0.260	0.290	0.040	0.010	0.300	0.300	0.070	0.070
02...	--	--	--	--	--							

295516095080801 - LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT												
06...	1.4	1.2	1.2	1.4	0.170	0.090	--	--	--	--	20	<10
06...	--	--	--	--	--	--	--	--	2.10	<0.100	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	0.55	--	--	0.60	0.200	--	--	--	--	--	40	40
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	0.61	0.61	0.70	0.70	0.230	0.200	--	--	--	--	40	120
17...	0.55	0.56	0.60	0.60	0.170	0.070	--	--	--	--	60	<10
17...	--	--	--	--	--	--	--	--	1.20	<0.100	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	0.55	--	--	0.60	0.170	--	--	--	--	--	40	30
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	1.2	0.72	0.90	1.4	0.310	0.110	--	--	--	--	110	60
NOV												
03...	0.67	0.67	0.70	0.70	0.210	0.090	--	--	--	--	200	20
03...	--	--	--	--	--	--	9.2	--	1.50	<0.100	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	0.37	--	--	0.40	0.190	--	--	--	--	--	40	10
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	0.57	0.49	0.50	0.60	0.200	0.150	--	--	--	--	40	20
DEC												
20...	--	--	--	--	--	--	8.1	--	0.800	<0.100	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
29...	0.57	0.39	0.40	0.60	0.350	0.260	7.6	6.4	--	--	120	14
29...	--	--	--	--	--	--	--	--	1.50	<0.100	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	0.56	0.59	0.60	0.60	0.360	0.250	8.1	6.1	--	--	32	7
MAR												
26...	--	--	0.80	--	--	0.090	12	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	1.50	<0.100	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
02...	0.83	0.83	0.90	0.90	0.200	0.200	14	--	1.00	<0.100	350	13
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	0.72	0.79	0.80	0.80	0.210	0.130	--	--	--	--	190	110
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	0.79	0.76	0.90	1.0	0.200	0.110	14	--	--	--	420	600
JUN												
15...	--	0.86	0.90	--	--	0.130	12	--	1.50	<0.100	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--

SAN JACINTO RIVER BASIN

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUL										
10...	0935	1.00	150	7.1	30.0	1.25	110	25	5.0	65
10...	0936	0.62	--	--	--	--	--	--	--	--
10...	0937	5.00	150	7.1	29.5	--	--	--	4.8	62
10...	0939	10.0	150	7.1	29.5	--	--	--	4.8	62
10...	0941	15.0	150	7.1	29.5	--	--	--	4.8	62
10...	0943	20.0	150	7.1	29.5	--	--	--	4.6	60
10...	0945	25.0	150	6.9	29.0	--	--	--	4.2	54
10...	0947	30.0	150	6.9	29.0	--	--	--	3.2	41
10...	0949	35.0	150	6.8	29.0	--	--	--	2.2	28
10...	0951	40.0	150	6.8	29.0	--	--	--	1.1	14
10...	0953	43.0	150	6.8	29.0	--	--	--	1.1	14
26...	0925	1.00	160	7.1	28.5	0.43	49	22	6.0	76
26...	0926	0.71	--	--	--	--	--	--	--	--
26...	0927	5.00	160	7.1	28.5	--	--	--	5.7	73
26...	0929	10.0	160	7.0	28.0	--	--	--	5.5	69
26...	0932	20.0	160	7.0	28.0	--	--	--	4.5	57
26...	0935	30.0	155	6.9	27.5	--	--	--	4.2	53
26...	0939	35.0	155	6.9	27.5	--	--	--	4.2	53
26...	0942	40.0	155	6.9	27.5	--	--	--	3.8	48
26...	0945	42.0	155	6.9	27.5	--	--	--	3.6	45
AUG										
06...	1330	1.00	175	8.3	31.5	0.40	110	22	7.9	106
06...	1331	0.66	--	--	--	--	--	--	--	--
06...	1332	5.00	175	7.8	31.0	--	--	--	7.3	97
06...	1334	10.0	180	7.3	30.0	--	--	--	5.9	77
06...	1336	20.0	180	7.3	30.0	--	--	--	5.6	73
06...	1338	25.0	175	7.1	29.5	--	--	--	3.8	49
06...	1340	30.0	170	7.0	29.0	--	--	--	2.6	33
06...	1342	35.0	170	6.9	29.0	--	--	--	3.1	40
06...	1344	40.0	170	6.9	28.5	--	--	--	1.4	18
06...	1346	42.0	170	6.9	28.5	--	--	--	1.2	15
31...	1250	1.00	200	7.6	32.0	0.59	55	15	7.0	95
31...	1251	0.97	--	--	--	--	--	--	--	--
31...	1252	5.00	200	7.3	30.0	--	--	--	5.5	72
31...	1254	10.0	200	7.2	30.0	--	--	--	5.2	68
31...	1256	15.0	200	7.2	30.0	--	--	--	5.1	67
31...	1258	20.0	200	7.1	30.0	--	--	--	4.7	62
31...	1300	25.0	200	7.1	30.0	--	--	--	4.3	57
31...	1302	30.0	200	7.0	29.0	--	--	--	2.9	37
31...	1304	35.0	200	6.9	29.0	--	--	--	1.5	19
31...	1306	38.0	200	6.9	29.0	--	--	--	1.3	17
31...	1308	41.0	200	7.0	29.0	--	--	--	0.4	5
SEP										
14...	0910	1.00	200	7.1	28.0	0.48	22	23	5.7	72
14...	0911	0.78	--	--	--	--	--	--	--	--
14...	0912	5.00	200	7.1	28.0	--	--	--	5.6	71
14...	0914	10.0	200	7.1	28.0	--	--	--	5.6	71
14...	0916	25.0	200	7.1	27.5	--	--	--	5.6	70
14...	0918	35.0	200	7.1	27.5	--	--	--	5.9	74
14...	0920	40.0	200	7.1	27.5	--	--	--	5.9	74
14...	0922	44.0	200	7.1	27.5	--	--	--	5.6	70
28...	0925	1.00	210	7.3	26.0	0.43	96	25	6.6	81
28...	0926	0.70	--	--	--	--	--	--	--	--
28...	0927	5.00	210	7.2	26.0	--	--	--	6.4	78
28...	0929	10.0	210	7.2	25.5	--	--	--	6.2	75
28...	0931	20.0	210	7.2	25.5	--	--	--	6.2	75
28...	0933	30.0	210	7.2	25.5	--	--	--	6.2	75
28...	0935	40.0	210	7.2	25.5	--	--	--	6.0	73
28...	0937	43.0	210	7.1	25.5	--	--	--	6.0	73

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L)
OCT												
06...	1002	1.00	180	7.6	25.0	0.47	--	--	7.1	85	--	--
06...	1004	5.00	180	7.5	25.0	--	--	--	6.7	81	--	--
06...	1006	10.0	180	7.2	24.5	--	--	--	5.4	64	--	--
06...	1008	20.0	190	7.0	23.5	--	--	--	4.0	47	--	--
06...	1010	30.0	190	7.0	23.0	--	--	--	3.4	39	--	--
06...	1012	37.0	190	7.0	22.5	--	--	--	2.8	32	--	--
17...	1034	1.00	190	7.3	23.5	0.43	--	--	5.6	65	--	--
17...	1036	5.00	190	7.3	23.5	--	--	--	5.7	66	--	--
17...	1038	10.0	190	7.3	23.5	--	--	--	5.7	66	--	--
17...	1040	15.0	190	7.3	23.5	--	--	--	5.7	66	--	--
17...	1042	20.0	190	7.3	23.5	--	--	--	5.7	66	--	--
17...	1044	25.0	190	7.3	23.5	--	--	--	5.6	65	--	--
17...	1046	35.0	190	7.3	23.5	--	--	--	5.4	63	--	--
NOV												
03...	1044	1.00	200	7.5	19.0	0.29	--	--	7.3	77	--	--
03...	1045	0.48	--	--	--	--	110	42	--	--	18	2
03...	1046	10.0	200	7.5	18.5	--	--	--	7.3	77	--	--
03...	1048	20.0	200	7.5	18.0	--	--	--	7.3	76	--	--
03...	1050	30.0	200	7.5	18.0	--	--	--	7.3	76	--	--
03...	1052	35.0	200	7.5	18.0	--	--	--	7.3	76	--	--
DEC												
20...	1015	1.00	212	7.8	7.5	0.25	100	46	11.0	90	14	14
20...	1017	10.0	212	7.8	7.5	--	--	--	11.0	90	--	--
20...	1019	20.0	214	7.7	7.0	--	--	--	11.0	89	--	--
20...	1021	36.0	215	7.7	7.0	--	--	--	11.1	90	--	--
JAN												
29...	1017	1.00	255	7.6	14.0	0.29	180	48	8.9	85	31	4
29...	1018	0.48	--	--	--	--	--	--	--	--	--	--
29...	1019	10.0	255	7.6	14.0	--	--	--	8.9	85	--	--
29...	1021	20.0	255	7.5	14.0	--	--	--	14.0	134	--	--
29...	1023	30.0	255	7.5	14.0	--	--	--	8.9	85	--	--
29...	1025	40.0	255	7.4	14.0	--	--	--	8.9	85	--	--
MAR												
26...	1335	1.00	180	7.5	19.5	0.40	140	34	8.5	91	31	16
26...	1336	0.66	--	--	--	--	--	--	--	--	--	--
26...	1337	5.00	180	7.4	19.5	--	--	--	8.4	90	--	--
26...	1339	10.0	180	7.4	19.0	--	--	--	8.1	86	--	--
26...	1341	15.0	180	7.4	19.0	--	--	--	8.1	86	--	--
26...	1343	20.0	180	7.4	19.0	--	--	--	8.0	84	--	--
26...	1345	25.0	180	7.4	19.0	--	--	--	8.0	84	--	--
26...	1347	30.0	180	7.4	19.0	--	--	--	8.0	84	--	--
26...	1349	35.0	180	7.4	19.0	--	--	--	8.0	84	--	--
26...	1351	38.0	180	7.5	18.5	--	--	--	7.9	83	--	--
MAY												
02...	1025	1.00	165	7.4	25.0	0.36	140	32	6.7	81	1	1
02...	1026	0.59	--	--	--	--	--	--	--	--	--	--
02...	1027	10.0	165	7.3	25.0	--	--	--	6.7	81	--	--
02...	1029	20.0	165	7.3	25.0	--	--	--	6.7	81	--	--
02...	1031	30.0	170	7.2	24.0	--	--	--	5.3	63	--	--
02...	1033	40.0	170	7.1	24.0	--	--	--	4.0	47	--	--
JUN												
15...	1125	1.00	135	7.2	30.5	0.40	170	35	6.3	84	2	<1
15...	1126	0.66	--	--	--	--	--	--	--	--	--	--
15...	1127	5.00	135	7.1	30.0	--	--	--	5.9	78	--	--
15...	1129	10.0	140	7.1	30.0	--	--	--	5.9	78	--	--
15...	1131	15.0	140	7.0	30.0	--	--	--	5.5	73	--	--
15...	1133	20.0	135	7.0	29.5	--	--	--	5.7	75	--	--
15...	1135	25.0	135	7.0	29.5	--	--	--	5.8	76	--	--
15...	1137	30.0	135	6.8	29.0	--	--	--	4.4	57	--	--
15...	1139	31.0	135	6.8	29.0	--	--	--	3.2	41	--	--
15...	1141	32.0	135	6.8	29.0	--	--	--	2.4	31	--	--
15...	1143	34.0	130	6.7	28.5	--	--	--	1.9	24	--	--
15...	1145	35.0	130	6.7	28.5	--	--	--	1.1	14	--	--
15...	1147	38.0	140	6.8	28.0	--	--	--	0	0	--	--

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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SAN JACINTO RIVER BASIN

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L)
JUL												
10...	1040	1.00	155	7.9	31.5	1.12	110	32	7.2	97	8	2
10...	1041	0.56	--	--	--	--	--	--	--	--	--	--
10...	1042	5.00	150	7.2	30.5	--	--	--	5.3	70	--	--
10...	1044	10.0	155	7.1	30.0	--	--	--	5.0	65	--	--
10...	1046	15.0	160	7.0	30.0	--	--	--	4.2	55	--	--
10...	1048	20.0	155	6.9	29.5	--	--	--	2.6	34	--	--
10...	1050	25.0	150	6.9	29.5	--	--	--	2.2	29	--	--
10...	1052	30.0	150	6.9	29.0	--	--	--	2.2	28	--	--
10...	1054	35.0	150	6.9	29.0	--	--	--	2.1	27	--	--
10...	1056	37.0	150	6.9	29.0	--	--	--	2.1	27	--	--
26...	1015	1.00	165	7.3	30.0	0.43	47	23	6.5	85	23	9
26...	1016	0.71	--	--	--	--	--	--	--	--	--	--
26...	1018	5.00	165	7.1	28.5	--	--	--	5.6	71	--	--
26...	1020	10.0	165	7.1	28.5	--	--	--	5.4	68	--	--
26...	1022	20.0	175	7.0	28.5	--	--	--	4.8	61	--	--
26...	1025	30.0	175	7.0	28.5	--	--	--	4.1	52	--	--
26...	1028	33.0	175	7.0	28.5	--	--	--	3.5	44	--	--
26...	1030	35.0	180	7.0	28.5	--	--	--	3.4	43	--	--
AUG												
06...	1235	1.00	185	7.6	31.0	0.49	90	24	6.6	88	15	10
06...	1236	0.80	--	--	--	--	--	--	--	--	--	--
06...	1237	5.00	185	7.4	30.5	--	--	--	6.1	80	--	--
06...	1239	10.0	185	7.2	29.5	--	--	--	5.1	66	--	--
06...	1241	20.0	175	7.1	29.5	--	--	--	3.4	44	--	--
06...	1243	25.0	175	7.0	29.0	--	--	--	2.5	32	--	--
06...	1245	30.0	175	7.0	29.0	--	--	--	1.7	22	--	--
06...	1247	35.0	175	7.0	28.5	--	--	--	0	0	--	--
06...	1249	38.0	175	7.1	28.5	--	--	--	0	0	--	--
31...	1205	1.00	205	7.3	31.0	0.50	55	15	5.8	78	17	8
31...	1206	0.82	--	--	--	--	--	--	--	--	--	--
31...	1207	5.00	205	7.2	30.0	--	--	--	5.2	68	--	--
31...	1209	10.0	205	7.2	30.0	--	--	--	5.0	66	--	--
31...	1211	15.0	205	7.2	30.0	--	--	--	4.7	62	--	--
31...	1213	20.0	205	7.1	30.0	--	--	--	4.2	55	--	--
31...	1215	25.0	205	6.9	29.5	--	--	--	1.0	13	--	--
31...	1217	30.0	205	6.9	29.0	--	--	--	0.2	3	--	--
31...	1219	35.0	210	6.9	29.0	--	--	--	0	0	--	--
31...	1221	36.0	210	7.0	29.0	--	--	--	0	0	--	--
SEP												
14...	0928	1.00	200	7.2	28.0	0.43	60	26	5.9	75	20	10
14...	0929	0.70	--	--	--	--	--	--	--	--	--	--
14...	0930	5.00	200	7.1	27.5	--	--	--	5.7	72	--	--
14...	0932	10.0	200	7.1	27.5	--	--	--	5.6	70	--	--
14...	0934	20.0	200	7.1	27.5	--	--	--	5.6	70	--	--
14...	0936	30.0	205	7.1	27.5	--	--	--	5.5	69	--	--
14...	0938	37.0	210	7.0	27.5	--	--	--	5.0	63	--	--
28...	1022	1.00	215	7.8	27.0	0.42	80	25	7.5	93	25	5
28...	1023	0.69	--	--	--	--	--	--	--	--	--	--
28...	1024	5.00	220	7.4	26.5	--	--	--	6.7	82	--	--
28...	1026	10.0	220	7.4	26.5	--	--	--	6.6	81	--	--
28...	1028	15.0	230	7.2	26.0	--	--	--	5.9	72	--	--
28...	1030	20.0	230	7.1	26.0	--	--	--	5.3	65	--	--
28...	1032	25.0	225	7.0	26.0	--	--	--	5.2	63	--	--
28...	1034	35.0	220	7.0	26.0	--	--	--	5.0	61	--	--
28...	1036	37.0	220	7.0	26.0	--	--	--	5.0	61	--	--

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295702095091401 - LAKE HOUSTON SITE BC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

SAN JACINTO RIVER BASIN
08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295902095074201 - LAKE HOUSTON SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT												
06...	1035	1.00	190	8.0	25.5	0.42	--	--	7.1	86	--	--
06...	1036	0.69	--	--	--	--	--	--	--	--	--	--
06...	1037	5.00	190	7.5	25.5	--	--	--	5.6	68	--	--
06...	1039	10.0	200	7.2	25.0	--	--	--	4.3	52	--	--
06...	1041	15.0	225	7.0	24.0	--	--	--	3.2	38	--	--
06...	1043	20.0	215	7.0	23.5	--	--	--	3.2	37	--	--
06...	1045	27.0	210	7.0	23.5	--	--	--	4.0	47	--	--
17...	1110	1.00	210	7.4	23.5	0.31	--	--	6.1	71	--	--
17...	1111	0.51	--	--	--	--	--	--	--	--	--	--
17...	1112	5.00	210	7.4	23.5	--	--	--	6.0	70	--	--
17...	1114	10.0	210	7.4	23.5	--	--	--	6.0	70	--	--
17...	1116	15.0	210	7.4	23.5	--	--	--	6.0	70	--	--
17...	1118	20.0	210	7.4	23.5	--	--	--	5.9	69	--	--
17...	1120	25.0	210	7.3	23.5	--	--	--	5.8	68	--	--
NOV												
03...	1118	1.00	215	7.5	19.0	0.27	--	--	7.4	79	--	--
03...	1119	0.43	--	--	--	--	100	52	--	--	--	--
03...	1120	5.00	235	7.5	18.0	--	--	--	7.5	78	--	--
03...	1122	10.0	240	7.5	18.0	--	--	--	7.2	75	--	--
03...	1124	15.0	240	7.4	18.0	--	--	--	6.8	71	--	--
03...	1126	20.0	240	7.5	17.5	--	--	--	7.4	76	--	--
03...	1128	25.0	240	7.5	17.5	--	--	--	7.3	75	--	--
DEC												
20...	1050	1.00	229	7.8	6.5	0.24	100	48	10.6	85	--	--
20...	1052	10.0	230	7.8	6.5	--	--	--	11.1	89	--	--
20...	1054	20.0	230	7.8	6.5	--	--	--	11.1	89	--	--
20...	1056	27.0	230	7.8	6.5	--	--	--	11.1	89	--	--
JAN												
29...	1056	1.00	225	7.4	14.5	0.33	180	33	8.5	83	80	130
29...	1057	0.54	--	--	--	--	--	--	--	--	--	--
29...	1058	10.0	230	7.4	14.0	--	--	--	8.5	82	--	--
29...	1100	20.0	235	7.5	14.0	--	--	--	8.5	82	--	--
29...	1102	30.0	240	7.5	14.0	--	--	--	8.6	83	--	--
MAR												
26...	1245	1.00	190	7.5	19.0	0.44	110	32	8.5	90	--	--
26...	1246	0.72	--	--	--	--	--	--	--	--	--	--
26...	1247	5.00	190	7.5	19.0	--	--	--	8.5	90	--	--
26...	1249	10.0	190	7.5	19.0	--	--	--	8.5	90	--	--
26...	1251	15.0	190	7.5	19.0	--	--	--	8.4	89	--	--
26...	1253	20.0	185	7.5	19.0	--	--	--	8.3	88	--	--
26...	1255	25.0	185	7.5	19.0	--	--	--	8.2	87	--	--
26...	1257	30.0	185	7.5	19.0	--	--	--	8.1	86	--	--
MAY												
02...	1102	1.00	160	7.2	25.0	0.33	170	39	6.0	72	80	40
02...	1103	0.54	--	--	--	--	--	--	--	--	--	--
02...	1104	5.00	160	7.2	25.0	--	--	--	6.0	72	--	--
02...	1106	10.0	160	7.1	25.0	--	--	--	6.0	72	--	--
02...	1108	20.0	155	7.0	25.0	--	--	--	5.4	65	--	--
02...	1110	30.0	155	7.0	24.5	--	--	--	4.1	49	--	--
JUN												
15...	1235	1.00	140	7.4	31.0	0.36	140	33	7.3	98	--	--
15...	1236	0.59	--	--	--	--	--	--	--	--	--	--
15...	1237	5.00	145	7.3	30.5	--	--	--	6.6	88	--	--
15...	1239	10.0	150	7.2	30.5	--	--	--	6.1	81	--	--
15...	1241	15.0	150	7.1	30.5	--	--	--	5.6	75	--	--
15...	1243	20.0	150	7.0	30.0	--	--	--	5.3	70	--	--
15...	1245	25.0	150	7.0	30.0	--	--	--	4.1	54	--	--
15...	1247	28.0	150	7.0	30.0	--	--	--	4.0	53	--	--
JUL												
10...	1120	1.00	185	7.5	31.5	1.35	75	24	5.7	76	--	--
10...	1121	0.68	--	--	--	--	--	--	--	--	--	--
10...	1122	5.00	190	7.2	30.5	--	--	--	4.7	62	--	--
10...	1124	10.0	190	7.2	30.0	--	--	--	4.0	52	--	--
10...	1126	15.0	190	7.2	30.0	--	--	--	3.7	48	--	--
10...	1128	20.0	205	7.1	30.0	--	--	--	3.0	39	--	--
10...	1130	25.0	190	7.1	30.0	--	--	--	2.7	35	--	--
10...	1132	28.0	190	7.2	30.0	--	--	--	1.9	25	--	--
26...	1050	1.00	195	7.7	30.0	0.46	65	15	7.3	95	--	--
26...	1051	0.76	--	--	--	--	--	--	--	--	--	--
26...	1052	5.00	195	7.3	29.0	--	--	--	5.6	72	--	--
26...	1054	10.0	200	7.3	29.0	--	--	--	5.3	68	--	--
26...	1056	15.0	205	7.2	29.0	--	--	--	5.0	64	--	--
26...	1058	20.0	230	7.2	29.0	--	--	--	3.8	49	--	--
26...	1100	25.0	255	7.2	29.0	--	--	--	3.4	44	--	--
26...	1102	27.0	255	7.2	29.0	--	--	--	3.4	44	--	--
26...	1104	29.0	220	7.1	29.0	--	--	--	3.1	40	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT												
06...	0.67	--	--	0.70	0.210	--	--	--	--	--	140	<10
06...	--	--	--	--	--	--	--	--	5.50	0.200	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	0.63	--	--	0.70	0.280	--	--	--	--	--	20	40
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	0.49	--	--	0.60	0.270	--	--	--	--	--	20	50
17...	0.65	--	--	0.70	0.230	--	--	--	--	--	40	20
17...	--	--	--	--	--	--	--	--	1.10	<0.100	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	0.65	--	--	0.70	0.260	--	--	--	--	--	200	70
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	0.65	--	--	0.70	0.230	--	--	--	--	--	20	10
NOV												
03...	0.64	0.64	0.70	0.70	0.240	0.240	--	--	--	--	30	30
03...	--	--	--	--	--	--	8.9	--	1.70	<0.100	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	0.94	--	--	1.1	0.640	--	--	--	--	--	30	50
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	0.56	--	--	0.60	0.300	--	--	--	--	--	30	<10
DEC												
20...	--	--	--	--	--	--	8.0	--	1.50	0.100	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
29...	1.2	0.54	0.60	1.3	0.420	0.370	10	7.5	--	--	210	19
29...	--	--	--	--	--	--	--	--	3.10	0.200	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	0.63	--	--	0.70	0.460	--	8.6	6.9	--	--	32	6
MAR												
26...	--	0.64	0.70	--	--	0.150	12	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	3.70	<0.100	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
02...	1.2	1.2	1.3	1.3	0.270	0.270	14	--	--	--	290	7
02...	--	--	--	--	--	--	--	--	2.20	<0.100	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	1.3	--	--	1.6	0.300	--	14	--	--	--	210	65
JUN												
15...	--	0.67	0.70	--	--	0.120	15	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	7.50	0.300	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
10...	--	0.37	0.40	--	--	0.140	12	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	5.50	0.300	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	0.50	--	--	0.130	12	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	4.40	0.200	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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295902095074201 - LAKE HOUSTON SITE CC--Continued

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLATILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	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)
AUG												
06...	117	21	10	11	<0.010	<0.010	<0.100	<0.100	0.020	0.021	0.78	0.48
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	109	--	--	--	0.020	--	<0.100	--	0.070	--	0.73	--
31...	--	29	9	20	--	<0.010	--	<0.100	--	0.030	--	0.47
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
14...	--	28	9	19	--	<0.010	--	0.100	--	0.020	--	0.48
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	19	5	14	--	<0.010	--	<0.100	--	<0.010	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
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- 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
AUG												
06...	0.50	0.80	0.320	0.200	--	--	10	9.3	--	--	31	13
06...	--	--	--	--	--	--	--	--	8.10	0.500	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	0.80	0.270	--	--	--	10	9.5	--	--	40	130
31...	0.50	--	--	0.160	--	--	9.9	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	3.20	0.200	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
14...	0.50	--	--	0.190	--	--	9.1	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	2.70	0.100	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--							

SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L)
OCT												
06...	1112	1.00	205	7.7	26.0	0.34	--	--	6.9	84	--	--
06...	1114	5.00	205	7.4	25.5	--	--	--	6.0	73	--	--
06...	1116	10.0	215	7.3	25.0	--	--	--	5.2	63	--	--
06...	1118	15.0	215	7.1	24.5	--	--	--	3.5	42	--	--
06...	1120	23.0	215	7.2	23.5	--	--	--	2.6	30	--	--
17...	1200	1.00	215	7.4	23.5	0.23	--	--	6.1	71	--	--
17...	1202	5.00	215	7.4	23.5	--	--	--	6.1	71	--	--
17...	1204	10.0	215	7.4	23.5	--	--	--	6.0	70	--	--
17...	1206	15.0	215	7.4	23.5	--	--	--	6.0	70	--	--
17...	1208	20.0	215	7.4	23.5	--	--	--	5.8	68	--	--
NOV												
03...	1215	1.00	225	7.5	19.0	0.26	--	--	7.4	79	--	--
03...	1216	0.42	--	--	--	--	110	58	--	--	35	1
03...	1217	5.00	225	7.5	18.5	--	--	--	7.4	78	--	--
03...	1219	10.0	225	7.4	18.0	--	--	--	7.4	77	--	--
03...	1221	15.0	225	7.4	18.0	--	--	--	7.4	77	--	--
03...	1223	22.0	225	7.4	18.0	--	--	--	7.4	77	--	--
DEC												
20...	1125	1.00	230	7.8	6.5	0.22	100	47	10.6	85	25	17
20...	1127	10.0	231	7.8	6.5	--	--	--	10.6	85	--	--
20...	1129	23.0	230	7.8	6.5	--	--	--	10.6	85	--	--
JAN												
29...	1200	1.00	220	7.4	14.5	0.33	200	38	8.6	83	35	5
29...	1201	0.54	--	--	--	--	--	--	--	--	--	--
29...	1202	10.0	220	7.4	14.0	--	--	--	8.5	82	--	--
29...	1204	20.0	225	7.4	14.0	--	--	--	8.6	83	--	--
29...	1206	26.0	230	7.4	14.0	--	--	--	8.5	82	--	--
MAR												
26...	1202	1.00	190	7.5	19.0	0.42	110	25	8.5	90	21	21
26...	1203	0.69	--	--	--	--	--	--	--	--	--	--
26...	1204	5.00	190	7.5	19.0	--	--	--	8.5	90	--	--
26...	1206	10.0	190	7.5	19.0	--	--	--	8.4	89	--	--
26...	1208	15.0	190	7.5	19.0	--	--	--	8.3	88	--	--
26...	1210	20.0	185	7.5	19.0	--	--	--	8.2	87	--	--
26...	1212	25.0	185	7.5	19.0	--	--	--	8.1	86	--	--
MAY												
02...	1139	1.00	165	7.2	25.5	0.25	170	48	6.1	74	26	11
02...	1140	0.41	--	--	--	--	--	--	--	--	--	--
02...	1141	5.00	165	7.2	25.5	--	--	--	6.1	74	--	--
02...	1143	10.0	165	7.2	25.5	--	--	--	6.1	74	--	--
02...	1145	15.0	165	7.2	25.5	--	--	--	6.1	74	--	--
02...	1147	25.0	160	7.2	25.5	--	--	--	6.1	74	--	--
JUN												
15...	1335	1.00	145	7.6	32.0	0.40	110	31	7.5	102	7	2
15...	1336	0.66	--	--	--	--	--	--	--	--	--	--
15...	1337	3.00	145	7.6	31.5	--	--	--	6.9	93	--	--
15...	1339	5.00	145	7.3	30.5	--	--	--	6.4	85	--	--
15...	1341	10.0	145	7.2	30.5	--	--	--	6.2	83	--	--
15...	1343	15.0	145	7.2	30.0	--	--	--	6.0	79	--	--
15...	1345	20.0	145	7.2	30.0	--	--	--	5.9	78	--	--
15...	1347	23.0	140	7.3	30.0	--	--	--	5.8	77	--	--
JUL												
10...	1208	1.00	200	8.0	32.0	1.25	65	22	7.2	97	15	4
10...	1209	0.62	--	--	--	--	--	--	--	--	--	--
10...	1210	5.00	200	7.3	30.5	--	--	--	4.2	55	--	--
10...	1212	10.0	200	7.2	30.5	--	--	--	3.7	49	--	--
10...	1214	15.0	245	7.2	30.5	--	--	--	2.4	32	--	--
10...	1216	20.0	260	7.2	30.0	--	--	--	1.6	21	--	--
10...	1218	23.0	220	7.1	30.0	--	--	--	1.6	21	--	--
26...	1122	1.00	205	8.2	30.5	0.46	65	15	8.0	105	28	12
26...	1123	0.76	--	--	--	--	--	--	--	--	--	--
26...	1125	5.00	200	7.5	29.5	--	--	--	5.7	74	--	--
26...	1127	10.0	210	7.6	29.5	--	--	--	5.6	72	--	--
26...	1130	20.0	300	7.6	29.0	--	--	--	3.1	40	--	--
26...	1132	22.0	310	7.6	29.0	--	--	--	2.9	37	--	--
26...	1135	24.0	310	7.6	29.0	--	--	--	2.4	31	--	--

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DATE	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
OCT											
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
03...	--	--	<0.010	0.230	0.020	0.68	0.70	0.230	--	--	--
03...	34	--	--	--	--	--	--	--	8.5	2.50	<0.100
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	8	--	--	--	--	--	--	--	7.7	1.70	0.100
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
29...	30	0.560	0.030	0.590	0.050	0.45	0.50	0.340	9.4	--	--
29...	--	--	--	--	--	--	--	--	--	3.70	0.200
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
MAR											
26...	0	--	<0.010	0.400	0.020	0.58	0.60	0.100	14	--	--
26...	--	--	--	--	--	--	--	--	--	3.20	<0.100
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	15	0.290	0.010	0.300	0.090	0.61	0.70	0.170	13	--	--
02...	--	--	--	--	--	--	--	--	--	2.60	<0.100
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
JUN											
15...	5	--	<0.010	<0.100	<0.010	--	0.50	0.070	14	--	--
15...	--	--	--	--	--	--	--	--	--	5.10	0.200
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	11	--	0.020	<0.100	0.070	0.83	0.90	0.260	12	--	--
10...	--	--	--	--	--	--	--	--	--	11.0	0.800
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
26...	16	--	0.010	<0.100	<0.010	--	0.50				

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)
AUG									
06...	0928	1.00	215	7.4	30.0	0.40	65	19	5.0
06...	0929	0.66	--	--	--	--	--	--	--
06...	0930	5.00	215	7.4	29.5	--	--	--	4.8
06...	0932	10.0	215	7.5	29.5	--	--	--	5.2
06...	0934	20.0	220	7.6	29.5	--	--	--	5.4
06...	0936	24.0	220	7.6	29.5	--	--	--	5.6
31...	1045	1.00	235	7.4	30.5	0.44	45	15	4.8
31...	1046	0.72	--	--	--	--	--	--	--
31...	1047	5.00	235	7.4	30.5	--	--	--	4.6
31...	1049	10.0	235	7.2	30.0	--	--	--	3.5
31...	1051	15.0	235	7.2	30.0	--	--	--	3.3
31...	1053	20.0	235	7.2	30.0	--	--	--	2.5
31...	1055	24.0	235	7.2	30.0	--	--	--	1.7
SEP									
14...	1052	1.00	295	7.8	28.0	0.40	65	20	6.3
14...	1053	0.66	--	--	--	--	--	--	--
14...	1054	5.00	295	7.4	27.5	--	--	--	5.4
14...	1056	10.0	300	7.4	27.5	--	--	--	5.2
14...	1058	20.0	330	7.6	27.0	--	--	--	5.0
14...	1100	23.0	330	7.6	27.0	--	--	--	5.0
28...	1156	1.00	245	8.4	29.0	0.43	60	17	8.1
28...	1157	0.70	--	--	--	--	--	--	--
28...	1158	5.00	245	7.9	26.5	--	--	--	7.1
28...	1200	10.0	250	7.8	26.5	--	--	--	6.5
28...	1202	15.0	290	7.4	26.0	--	--	--	4.4
28...	1204	20.0	345	7.7	26.0	--	--	--	3.5
28...	1206	24.0	350	7.4	26.0	--	--	--	2.9

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	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 DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
AUG								
06...	65	22	6	16	--	<0.010	<0.100	0.050
06...	--	--	--	--	--	--	--	--
06...	62	--	--	--	--	--	--	--
06...	67	--	--	--	--	--	--	--
06...	70	--	--	--	--	--	--	--
06...	73	--	--	--	--	--	--	--
31...	64	11	7	4	--	<0.010	<0.100	0.060
31...	--	--	--	--	--	--	--	--
31...	61	--	--	--	--	--	--	--
31...	46	--	--	--	--	--	--	--
31...	43	--	--	--	--	--	--	--
31...	33	--	--	--	--	--	--	--
31...	22	--	--	--	--	--	--	--
SEP								
14...	80	26	8	18	0.080	0.020	0.100	0.070
14...	--	--	--	--	--	--	--	--
14...	68	--	--	--	--	--	--	--
14...	65	--	--	--	--	--	--	--
14...	62	--	--	--	--	--	--	--
14...	62	--	--	--	--	--	--	--
28...	104	27	4	23	--	<0.010	<0.100	<0.010
28...	--	--	--	--	--	--	--	--
28...	87	--	--	--	--	--	--	--
28...	80	--	--	--	--	--	--	--
28...	54	--	--	--	--	--	--	--
28...	43	--	--	--	--	--	--	--
28...	35	--	--	--	--	--	--	--

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SAN JACINTO RIVER BASIN
08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT												
06...	1238	1.00	200	7.8	26.5	0.29	--	--	7.1	88	--	--
06...	1239	0.48	--	--	--	--	--	--	--	--	--	--
06...	1240	5.00	200	7.4	26.0	--	--	--	5.7	70	--	--
06...	1242	10.0	200	7.1	25.0	--	--	--	4.2	50	--	--
06...	1244	15.0	195	7.0	24.0	--	--	--	1.2	14	--	--
06...	1246	18.0	195	7.2	24.0	--	--	--	1.1	13	--	--
17...	1305	1.00	200	7.4	24.5	0.31	--	--	6.0	71	--	--
17...	1306	0.51	--	--	--	--	--	--	--	--	--	--
17...	1307	5.00	200	7.4	24.0	--	--	--	6.0	71	--	--
17...	1309	10.0	200	7.4	24.0	--	--	--	6.0	71	--	--
17...	1311	17.0	200	7.3	24.0	--	--	--	6.0	71	--	--
NOV												
03...	1327	1.00	200	7.6	20.0	0.26	--	--	7.8	85	--	--
03...	1328	0.42	--	--	--	--	90	49	--	--	--	--
03...	1329	5.00	200	7.4	18.0	--	--	--	7.0	73	--	--
03...	1331	10.0	200	7.4	18.0	--	--	--	6.9	72	--	--
03...	1333	15.0	205	7.4	18.0	--	--	--	7.2	75	--	--
03...	1335	18.0	205	7.4	18.0	--	--	--	7.2	75	--	--
DEC												
20...	1310	1.00	200	7.9	6.5	0.30	100	37	10.5	84	--	--
20...	1312	5.00	200	7.9	6.5	--	--	--	10.5	84	--	--
20...	1314	10.0	200	8.0	6.5	--	--	--	10.6	85	--	--
20...	1316	15.0	200	8.0	6.5	--	--	--	10.6	85	--	--
20...	1318	20.0	200	8.2	6.0	--	--	--	10.6	84	--	--
JAN												
29...	1322	1.00	130	6.8	15.0	0.33	140	38	8.0	78	140	170
29...	1323	0.54	--	--	--	--	--	--	--	--	--	--
29...	1324	5.00	130	6.9	14.0	--	--	--	8.0	77	--	--
29...	1326	10.0	130	6.9	14.0	--	--	--	8.0	77	--	--
29...	1328	15.0	130	6.9	14.0	--	--	--	8.0	77	--	--
29...	1330	20.0	130	7.0	13.5	--	--	--	8.1	77	--	--
29...	1332	23.0	130	7.0	13.5	--	--	--	8.1	77	--	--
MAR												
26...	1125	1.00	165	7.6	19.5	0.45	140	20	8.3	89	--	--
26...	1126	0.74	--	--	--	--	--	--	--	--	--	--
26...	1127	5.00	165	7.6	19.0	--	--	--	8.2	87	--	--
26...	1129	10.0	165	7.7	19.0	--	--	--	8.1	86	--	--
26...	1131	15.0	170	8.0	19.0	--	--	--	8.0	84	--	--
26...	1133	20.0	170	7.9	19.0	--	--	--	8.0	84	--	--
MAY												
02...	1331	1.00	140	7.0	25.5	0.25	130	39	5.9	72	88	130
02...	1332	0.41	--	--	--	--	--	--	--	--	--	--
02...	1333	5.00	140	6.9	25.5	--	--	--	5.9	72	--	--
02...	1335	10.0	140	6.8	25.5	--	--	--	5.7	69	--	--
02...	1337	23.0	100	6.6	24.5	--	--	--	3.4	41	--	--
JUN												
15...	1312	1.00	170	7.8	32.0	0.37	75	24	7.8	106	--	--
15...	1313	0.60	--	--	--	--	--	--	--	--	--	--
15...	1314	5.00	160	7.3	31.0	--	--	--	6.9	93	--	--
15...	1316	10.0	160	7.0	30.5	--	--	--	5.8	77	--	--
15...	1318	15.0	140	6.8	30.0	--	--	--	3.3	44	--	--
15...	1320	18.0	140	6.8	30.0	--	--	--	2.4	32	--	--
15...	1322	20.0	140	6.8	30.0	--	--	--	1.0	13	--	--
15...	1324	21.0	140	6.8	29.5	--	--	--	0	0	--	--
JUL												
10...	1310	1.00	195	7.9	32.0	1.44	45	15	6.7	91	--	--
10...	1311	0.72	--	--	--	--	--	--	--	--	--	--
10...	1312	5.00	195	7.5	31.0	--	--	--	5.2	69	--	--
10...	1314	10.0	195	7.5	31.0	--	--	--	4.9	65	--	--
10...	1316	15.0	195	7.6	30.5	--	--	--	5.1	67	--	--
10...	1318	20.0	195	7.5	30.5	--	--	--	3.9	51	--	--
10...	1320	21.0	195	7.7	30.5	--	--	--	4.2	55	--	--
26...	1306	1.00	210	8.2	31.5	0.48	65	5.8	8.1	109	--	--
26...	1307	0.79	--	--	--	--	--	--	--	--	--	--
26...	1308	5.00	215	7.8	29.5	--	--	--	6.1	79	--	--
26...	1310	10.0	215	7.8	29.5	--	--	--	5.5	71	--	--
26...	1312	15.0	215	7.9	29.0	--	--	--	5.5	71	--	--
26...	1315	20.0	215	8.0	29.0	--	--	--	5.4	69	--	--

300158095074601 - LAKE HOUSTON SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300158095074601 - LAKE HOUSTON SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
AUG												
06...	1050	1.00	220	8.1	31.0	0.54	47	11	6.9	92	K1	K4
06...	1051	0.88	--	--	--	--	--	--	--	--	--	--
06...	1052	5.00	220	7.6	30.0	--	--	--	5.2	68	--	--
06...	1054	10.0	225	7.5	30.0	--	--	--	4.7	62	--	--
06...	1056	20.0	230	7.6	30.0	--	--	--	4.4	58	--	--
31...	1005	1.00	230	7.7	31.0	0.53	33	10	5.4	72	--	--
31...	1006	0.87	--	--	--	--	--	--	--	--	--	--
31...	1007	5.00	230	7.6	31.0	--	--	--	5.3	71	--	--
31...	1009	10.0	240	7.6	30.5	--	--	--	4.7	62	--	--
31...	1011	15.0	240	7.4	30.5	--	--	--	3.1	41	--	--
31...	1013	19.0	240	7.4	30.5	--	--	--	1.9	25	--	--
SEP												
14...	1202	1.00	225	7.4	27.5	0.41	33	16	6.2	78	--	--
14...	1203	0.68	--	--	--	--	--	--	--	--	--	--
14...	1204	2.00	225	7.6	27.5	--	--	--	6.9	87	--	--
14...	1206	3.00	225	7.4	27.5	--	--	--	6.4	80	--	--
14...	1208	4.00	225	7.3	27.0	--	--	--	6.1	76	--	--
14...	1210	5.00	225	7.2	27.0	--	--	--	5.7	71	--	--
14...	1212	10.0	225	7.2	27.0	--	--	--	5.6	70	--	--
14...	1214	20.0	225	7.1	27.0	--	--	--	5.2	65	--	--
28...	1310	1.00	220	8.6	29.5	0.62	30	10	8.5	110	--	--
28...	1311	1.02	--	--	--	--	--	--	--	--	--	--
28...	1312	5.00	230	8.3	27.5	--	--	--	7.6	95	--	--
28...	1314	8.00	225	7.6	27.0	--	--	--	6.3	78	--	--
28...	1316	10.0	220	7.1	26.5	--	--	--	4.4	54	--	--
28...	1318	15.0	205	7.0	26.0	--	--	--	3.2	39	--	--
28...	1320	19.0	205	7.2	26.0	--	--	--	3.4	41	--	--

[illegible]

SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300209095091201 - LAKE HOUSTON SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
OCT										
06...	1205	1.00	330	8.9	28.5	0.23	--	--	8.7	111
06...	1206	0.38	--	--	--	--	--	--	--	--
06...	1207	5.00	370	8.3	27.0	--	--	--	5.1	64
06...	1209	8.00	440	8.1	26.5	--	--	--	3.6	45
17...	1232	1.00	365	8.2	24.5	0.24	--	--	6.4	76
17...	1233	0.40	--	--	--	--	--	--	--	--
17...	1234	6.00	365	8.2	24.5	--	--	--	6.2	74
NOV										
03...	1250	1.00	420	7.8	16.5	0.23	--	--	7.1	72
03...	1251	0.38	--	--	--	--	55	51	--	--
03...	1252	5.00	425	7.8	16.5	--	--	--	7.1	72
03...	1254	10.0	430	7.7	16.5	--	--	--	7.2	73
DEC										
20...	1220	1.00	446	8.4	5.5	0.32	100	25	11.3	88
20...	1222	2.00	445	8.6	5.5	--	--	--	11.4	89
20...	1224	3.00	472	8.6	5.5	--	--	--	11.4	89
20...	1226	5.00	489	8.5	5.5	--	--	--	11.4	89
20...	1228	9.00	496	8.3	5.5	--	--	--	11.3	88
JAN										
29...	1235	1.00	200	7.2	14.5	0.26	190	28	8.0	78
29...	1236	0.42	--	--	--	--	--	--	--	--
29...	1237	5.00	200	7.2	14.0	--	--	--	7.8	75
29...	1239	10.0	205	7.2	14.0	--	--	--	7.6	73
29...	1241	15.0	205	7.2	13.5	--	--	--	7.6	72
MAR										
26...	1035	1.00	250	8.9	20.0	0.46	45	12	10.3	111
26...	1036	0.76	--	--	--	--	--	--	--	--
26...	1037	5.00	255	8.9	20.0	--	--	--	9.9	107
26...	1039	11.0	255	8.7	19.5	--	--	--	9.1	97
MAY										
02...	1230	1.00	185	7.2	25.5	0.24	210	53	5.5	67
02...	1231	0.40	--	--	--	--	--	--	--	--
02...	1232	5.00	185	7.2	25.5	--	--	--	5.5	67
02...	1234	12.0	185	7.2	25.5	--	--	--	5.5	67
JUN										
15...	1420	1.00	260	8.6	32.5	0.42	55	23	8.8	121
15...	1421	0.69	--	--	--	--	--	--	--	--
15...	1422	4.00	260	8.6	32.5	--	--	--	8.7	120
15...	1424	5.00	245	8.4	32.0	--	--	--	7.3	100
15...	1426	8.00	235	7.6	31.0	--	--	--	5.4	72
15...	1428	10.0	240	7.5	31.0	--	--	--	4.9	66
15...	1430	11.0	245	7.5	31.0	--	--	--	4.3	58
JUL										
10...	1238	1.00	335	8.5	31.5	1.25	45	14	5.2	70
10...	1239	0.62	--	--	--	--	--	--	--	--
10...	1240	5.00	335	8.5	31.5	--	--	--	4.6	62
10...	1242	8.00	360	8.5	31.5	--	--	--	3.9	52
10...	1244	10.0	410	8.2	31.0	--	--	--	1.6	21
26...	1222	1.00	340	9.0	31.5	0.29	48	19	12.2	163
26...	1223	0.48	--	--	--	--	--	--	--	--
26...	1225	3.00	335	9.0	31.5	--	--	--	7.0	94
26...	1228	5.00	335	8.5	30.0	--	--	--	6.1	80
26...	1230	10.0	335	8.1	29.5	--	--	--	4.3	56
AUG										
06...	1010	1.00	325	8.7	30.5	0.28	55	15	5.9	78
06...	1011	0.46	--	--	--	--	--	--	--	--
06...	1012	5.00	325	8.7	30.0	--	--	--	5.2	68
06...	1014	11.0	325	8.5	30.0	--	--	--	4.2	55
31...	0930	1.00	455	9.2	31.0	0.32	60	17	6.7	90
31...	0931	0.52	--	--	--	--	--	--	--	--
31...	0932	5.00	450	9.1	31.0	--	--	--	6.1	82
31...	0934	10.0	465	9.0	31.0	--	--	--	5.0	67
SEP										
14...	1130	1.00	405	8.4	28.0	0.25	75	44	7.8	99
14...	1131	0.41	--	--	--	--	--	--	--	--
14...	1132	2.00	405	8.4	28.0	--	--	--	7.5	95
14...	1134	3.00	405	8.0	27.0	--	--	--	6.2	77
14...	1136	4.00	405	7.8	26.5	--	--	--	5.5	68
14...	1138	5.00	410	7.6	26.5	--	--	--	4.9	60
14...	1140	10.0	420	7.4	26.5	--	--	--	4.7	58
28...	1232	1.00	320	9.2	29.5	0.41	55	20	10.4	135
28...	1233	0.68	--	--	--	--	--	--	--	--
28...	1234	3.00	310	9.0	28.0	--	--	--	8.4	106
28...	1236	5.00	360	8.4	27.0	--	--	--	6.1	76
28...	1238	8.00	370	8.0	27.0	--	--	--	4.6	57
28...	1240	10.0	375	7.7	27.0	--	--	--	3.9	48

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300209095091201 - LAKE HOUSTON SITE FC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300209095091201 - LAKE HOUSTON SITE FC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	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 CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLATILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT										
06...	--	--	--	--	--	--	--	--	0.270	0.280
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	0.730	0.760
17...	--	--	--	--	--	--	--	--	0.350	0.370
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	0.440	0.390
NOV										
03...	--	--	--	--	--	--	--	--	1.93	1.94
03...	--	--	--	--	--	81	12	69	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	1.82	1.84
DEC										
20...	--	--	--	--	--	26	12	14	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
JAN										
29...	9.0	22	0.10	9.6	113	67	13	54	0.430	0.480
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	10	22	0.10	10	115	--	--	--	0.450	0.460
MAR										
26...	--	--	--	--	--	20	15	5	--	0.080
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	7.0	24	<0.10	7.7	106	77	16	61	0.230	--
02...	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--
02...	7.2	24	<0.10	8.1	110	--	--	--	0.220	0.280
JUN										
15...	--	--	--	--	--	34	<1	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
JUL										
10...	--	--	--	--	--	35	11	24	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	54	17	37	--	0.259
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	11	43	0.20	11	178	30	5	25	0.070	0.080
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	11	43	0.20	11	178	--	--	--	--	--
31...	--	--	--	--	--	23	11	12	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
SEP										
14...	--	--	--	--	--	65	12	53	--	0.810
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	38	7	31	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--

DATE	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS P04)	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)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA- NESE, DIS-SOLVED (UG/L AS MN)
OCT										
06...	0.630	0.500	--	--	--	--	--	--	20	<10
06...	--	--	--	--	--	--	21.0	1.00	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	1.00	0.780	--	--	--	--	--	--	20	<10
17...	0.650	0.580	--	--	--	--	--	--	20	<10
17...	--	--	--	--	--	--	12.0	0.500	--	--
17...	0.810	0.470	--	--	--	--	--	--	30	<10
NOV										
03...	1.90	1.50	--	--	--	--	--	--	20	<10
03...	--	--	--	--	7.9	--	5.90	0.200	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	2.00	1.60	--	--	--	--	--	--	50	<10
DEC										
20...	--	--	--	--	6.0	--	16.0	1.00	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
JAN										
29...	0.540	0.510	--	--	11	9.4	--	--	140	7
29...	--	--	--	--	--	--	2.00	0.100	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	0.430	0.310	--	--	13	11	--	--	110	9
MAR										
26...	--	0.250	--	--	11	--	--	--	--	--
26...	--	--	--	--	--	--	27.0	0.500	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	0.280	0.190	--	--	17	--	--	--	150	44
02...	--	--	--	--	--	--	1.30	<0.100	--	--
02...	--	--	--	--	--	--	--	--	--	--
02...	0.290	0.270	--	--	17	--	--	--	310	50
JUN										
15...	--	0.270	--	--	12	--	--	--	--	--
15...	--	--	--	--	--	--	3.20	0.100	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
JUL										
10...	--	0.620	--	--	14	--	--	--	--	--
10...	--	--	--	--	--	--	16.0	0.700	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
26...	--	0.780	--	--	13	--	--	--	--	--
26...	--	--	--	--	--	--	39.0	1.90	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	0.870	0.780	--	--	9.3	7.6	--	--	5	2
06...	--	--	--	--	--	--	20.0	1.00	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	0.840	0.750	--	--	9.7	7.7	--	--	26	8
31...	--	0.790	--	--	12	--	--	--	--	--
31...	--	--	--	--	--	--	37.0	1.80	--	--
3										

SAN JACINTO RIVER MAIN STEM

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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 mi².

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.--Estimated maximum or minimum gage heights: May 11-24. 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 ft³/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, 7.07 ft Oct. 16 at 0100 hours; minimum, minus 2.23 ft Dec. 24.

DAY	GAGE HEIGHT, FEET, WATER YEAR		OCTOBER 1989		TO SEPTEMBER 1990							
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	2.66	.82	2.32	1.08	1.90	.20	---	-.02	3.33	1.84	2.38	.52
2	2.60	1.02	2.45	.05	2.00	-.20	1.83	1.25	3.35	1.72	2.06	.68
3	2.47	.85	2.15	.80	1.25	-.70	2.42	1.43	3.30	1.50	2.65	.98
4	2.48	.87	2.59	1.15	1.55	.35	2.23	.72	1.50	-.37	3.08	1.15
5	2.63	1.38	2.77	1.20	1.72	.10	1.47	---	2.78	.57	3.31	1.61
6	3.15	1.31	2.85	1.33	1.65	.55	1.58	---	2.93	1.16	3.64	1.83
7	2.77	.54	2.20	1.28	1.85	.56	1.72	-.33	2.58	.40	3.55	1.66
8	2.25	.60	2.22	.95	.56	-1.68	1.82	-.25	2.80	.92	3.39	1.55
9	3.19	.78	2.58	.85	.97	-1.43	1.85	-.10	3.01	1.50	3.12	1.64
10	3.32	1.60	2.40	.82	1.83	-.20	1.68	-.30	2.80	.04	3.40	1.95
11	3.15	1.30	2.53	.75	1.98	-.53	1.62	-.40	1.87	.46	3.78	2.64
12	3.58	1.72	2.99	1.00	.20	-2.02	1.60	-.85	2.17	1.01	4.52	2.49
13	3.40	1.90	2.99	.93	1.15	-.95	2.12	.46	3.02	1.63	4.66	2.88
14	3.75	1.40	2.84	1.03	1.85	-.03	2.16	.52	2.65	1.48	4.60	2.30
15	6.60	2.10	3.13	.05	1.92	-.60	2.08	.61	3.38	1.52	3.32	1.87
16	7.07	1.84	.50	-1.08	1.10	-.57	2.33	1.21	3.10	.45	3.24	1.51
17	3.69	.44	2.08	.50	1.60	.47	2.47	1.25	2.35	---	2.42	1.06
18	2.18	-.65	3.30	1.48	1.98	1.16	2.58	.82	2.74	---	2.59	.67
19	.70	-1.18	3.17	1.70	2.21	.11	2.75	1.31	2.40	.87	2.12	.62
20	1.72	-.33	3.03	1.08	1.52	.30	2.00	.35	2.93	1.15	2.30	.08
21	2.26	.15	2.25	1.08	1.83	.35	1.81	-.13	3.60	2.42	2.61	.85
22	2.05	.50	2.20	1.00	.80	-.63	1.93	.07	3.00	1.43	2.77	1.51
23	2.07	.48	1.48	-.64	.10	-1.94	2.06	.41	1.98	.57	2.62	.74
24	2.47	.87	2.35	.90	1.20	-2.23	2.37	.38	1.92	.80	2.73	1.18
25	2.72	1.10	2.63	1.5	1.20	-.71	2.25	-.93	2.53	1.30	2.42	.77
26	2.80	1.40	2.37	.60	.91	-.85	2.05	.25	3.18	2.12	2.25	.67
27	2.69	1.19	2.49	.65	1.28	-.52	2.60	.95	3.03	1.78	3.00	.62
28	2.98	1.75	2.58	-.28	1.72	-.37	2.56	1.14	3.11	1.21	3.45	1.49
29	3.52	1.70	1.40	-.52	2.00	.32	1.86	-.02	---	---	3.82	1.76
30	3.70	1.06	1.62	-.21	2.08	.48	2.31	1.28	---	---	3.83	2.32
31	2.25	.07	---	---	2.00	---	3.05	1.57	---	---	3.80	2.33
MONTH	7.07	-1.18	3.30	-1.08	2.21	---	---	---	3.60	---	4.66	.08

SAN JACINTO RIVER MAIN STEM

08072050 SAN JACINTO RIVER NEAR SHELDON, TX--Continued

DAY	GAGE HEIGHT, FEET, WATER		YEAR OCTOBER 1989		TO SEPTEMBER 1990							
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	3.90	2.37	3.72	1.99	4.36	2.79	2.34	.82	2.51	.59	2.96	.47
2	4.23	2.98	4.20	2.43	4.20	2.36	2.41	.70	2.54	.85	2.78	.94
3	4.14	2.67	4.58	3.07	3.51	1.72	2.08	.38	2.63	.65	3.03	1.15
4	3.37	1.68	4.38	3.00	3.00	1.24	2.19	.20	2.53	.55	2.72	1.22
5	3.04	1.58	4.42	4.21	2.74	.80	2.92	.36	2.33	.47	2.70	1.12
6	2.94	.65	4.34	3.30	3.19	1.02	2.69	.55	2.29	.38	3.05	1.48
7	3.13	.41	3.83	2.68	3.37	1.34	2.83	.73	2.68	.45	3.04	1.46
8	3.32	2.07	4.07	2.75	3.30	1.33	2.47	.47	2.94	.98	2.78	1.05
9	3.51	2.40	3.64	2.03	3.18	1.18	2.67	.20	2.80	1.37	2.67	.48
10	3.38	1.90	2.90	.92	3.38	1.05	2.87	.83	2.65	1.37	3.05	.87
11	2.32	.77	---	1.91	2.89	.85	2.76	.93	2.64	1.26	2.75	.78
12	3.31	1.13	---	---	2.95	.75	2.28	1.00	2.57	1.03	2.77	1.05
13	4.00	2.13	---	---	3.25	1.17	2.02	.05	2.63	1.10	3.65	1.05
14	3.10	1.58	---	---	3.21	1.38	1.94	.50	2.87	.92	2.98	1.05
15	2.72	.52	---	---	3.28	1.43	2.14	.80	2.94	.84	2.63	.90
16	3.12	1.10	---	---	2.78	1.52	3.42	1.08	3.17	.88	2.67	.70
17	3.00	1.22	---	---	2.73	.99	3.62	1.52	3.53	1.08	2.82	1.05
18	2.93	.97	---	---	2.48	.67	3.62	1.22	3.37	1.50	2.67	1.38
19	3.48	1.40	---	---	2.34	.33	2.86	.80	3.07	1.30	3.04	1.66
20	3.17	1.89	---	---	2.56	.15	2.97	.66	2.83	1.15	2.95	1.62
21	3.14	1.75	---	---	2.76	.43	2.83	.69	2.78	1.08	2.83	1.62
22	2.87	1.62	---	---	2.70	.40	3.02	.90	2.78	1.14	2.87	.52
23	3.08	1.62	---	---	2.15	.08	2.62	.90	2.78	1.20	1.98	.35
24	3.72	1.52	---	---	2.82	-.05	2.66	.67	2.43	.92	2.79	1.12
25	4.42	2.34	3.93	1.46	3.03	.63	2.66	1.07	2.02	.78	2.56	1.07
26	4.65	2.69	3.88	1.48	2.78	.59	2.45	1.20	1.79	.18	2.57	.93
27	4.59	3.40	3.91	1.56	2.79	.45	2.29	1.09	1.86	.64	2.42	.93
28	3.66	1.65	3.92	1.48	2.84	.89	2.25	1.13	2.59	.92	2.58	.92
29	3.89	2.02	3.88	1.68	2.93	1.67	2.49	.94	2.55	.70	2.40	.77
30	3.45	1.91	4.41	2.66	2.91	1.03	2.40	.72	2.26	.44	2.43	.95
31	---	---	4.21	2.70	---	---	2.37	.13	2.13	.04	---	---
MONTH	4.65	.41	---	---	4.36	-.05	3.62	.05	3.53	.04	3.65	.35
CAL YR 1989	MAX	---	MIN	---								
WTR YR 1990	MAX	---	MIN	---								

SAN JACINTO RIVER BASIN

103

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. 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.--13 years, 44.2 ft³/s (32,020 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 21	1700	*1,260	*33.33				
Minimum daily discharge, 0.72 ft ³ /s Mar. 23.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	35	1.5	2.4	33	105	18	6.5	3.2	1.5	11	3.3
2	2.5	24	1.3	2.3	55	232	6.7	2.1	3.4	1.5	5.9	4.5
3	2.4	16	1.1	4.1	27	79	3.2	166	2.8	1.6	4.3	13
4	2.4	8.6	1.0	2.5	16	32	1.8	524	2.8	1.5	2.8	9.0
5	2.4	5.0	1.2	7.7	14	17	1.3	138	3.4	1.6	1.8	9.0
6	2.1	3.5	1.0	29	6.3	13	4.0	54	2.5	2.0	1.4	18
7	32	2.7	.87	38	3.6	10	2.4	26	2.3	1.7	4.5	6.9
8	18	3.0	.86	23	2.9	6.1	1.3	14	2.4	2.1	13	4.4
9	11	2.2	.82	13	2.5	3.6	1.2	8.2	2.3	2.2	34	3.1
10	7.7	1.7	.79	6.9	9.3	2.5	10	5.2	3.8	2.8	30	4.7
11	5.1	1.7	.79	3.7	6.8	1.7	18	3.6	5.4	4.6	14	5.1
12	3.3	4.5	.91	2.0	3.3	1.6	5.3	2.5	5.1	28	11	2.8
13	2.6	3.1	3.0	1.1	1.9	2.1	1.8	2.2	4.0	38	6.5	6.1
14	2.2	2.1	1.6	1.1	1.7	2.4	90	2.1	5.2	10	7.2	7.8
15	3.9	2.9	1.1	1.1	2.0	2.8	90	1.7	4.0	3.6	8.7	3.8
16	2.9	3.5	1.1	1.4	1.7	1.8	22	1.3	2.9	2.7	13	3.6
17	2.2	2.1	1.2	1.5	1.3	1.4	6.7	457	2.3	2.6	16	4.4
18	1.6	1.9	1.3	1.2	3.2	1.2	3.0	201	1.7	3.7	18	6.6
19	1.4	2.5	1.5	1.3	3.4	2.3	1.9	70	1.4	2.5	8.3	8.6
20	1.3	5.2	1.1	1.9	1.8	2.2	1.3	28	1.1	1.7	8.4	6.2
21	2.4	2.7	1.1	1.1	534	1.3	1.1	14	.97	1.6	6.9	4.3
22	4.0	10	2.1	.90	509	.85	.96	7.9	.84	2.1	12	2.6
23	4.9	13	3.1	.92	135	.72	1.1	51	.84	2.5	10	2.0
24	2.6	6.3	3.5	9.2	51	.87	1.3	17	1.9	20	12	1.4
25	4.5	2.9	2.1	4.8	25	1.1	1.0	8.3	2.4	15	5.9	1.1
26	8.8	2.3	1.4	2.5	12	1.0	22	4.5	4.5	7.3	3.1	.97
27	4.8	2.8	1.5	1.5	7.8	.99	112	3.8	3.0	13	1.9	.90
28	3.8	1.6	1.3	8.2	14	1.1	424	3.3	2.2	11	1.6	.95
29	3.5	1.4	1.2	9.8	---	6.5	97	3.4	1.7	8.3	1.3	.95
30	19	1.6	21	3.7	---	68	23	3.1	1.6	6.4	1.4	.95
31	41	---	5.0	2.1	---	56	---	2.8	---	19	2.2	---
TOTAL	208.3	175.8	67.34	189.92	1484.5	658.13	973.36	1832.5	81.95	222.1	278.1	147.02
MEAN	6.72	5.86	2.17	6.13	53.0	21.2	32.4	59.1	2.73	7.16	8.97	4.90
MAX	41	35	21	38	534	232	424	524	5.4	38	34	18
MIN	1.3	1.4	.79	.90	1.3	.72	.96	1.3	.84	1.5	1.3	.90
AC-FT	413	349	134	377	2940	1310	1930	3630	163	441	552	292
CAL YR 1989	TOTAL	10351.57	MEAN	28.4	MAX	940	MIN	.79	AC-FT	20530		
WTR YR 1990	TOTAL	6319.02	MEAN	17.3	MAX	534	MIN	.72	AC-FT	12530		

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 mi². Prior to August 1977, 134 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.--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 releveing survey made in 1974 using National Geodetic Vertical Datum, 1973 adjustment as base.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 39,200 acre-ft May 15, 1968 (gage height, 94.60 ft, former datum and former capacity table); minimum, reservoir was dry at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,550 acre-ft Feb. 24 from 0200 hours to 1100 hours (elevation, 86.32 ft); minimum, 0.12 acre-ft many days (elevation, 73.67 ft).

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

73.2	0	78.4	14	81.0	100	84.0	1,370
76.3	2	79.2	22	81.6	193	85.0	2,430
76.9	4	79.8	32	82.2	331	86.0	3,980
77.6	8	80.4	49	83.0	671	87.0	6,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.12	.37	.12	.18	.22	147	1370	1130	.13	.15	.19	.12
2	.12	.31	.12	.17	.47	462	1540	1070	.13	.13	.19	.12
3	.12	.27	.14	.26	.99	334	1380	1380	.12	.12	.18	.12
4	.12	.22	.13	.22	.43	63.3	1190	2180	.13	.12	.16	.15
5	.12	.20	.13	.19	.27	.49	1220	3090	.13	.13	.15	.15
6	.12	.19	.12	.82	.22	.33	1100	3400	.13	.17	.13	.40
7	.15	.17	.13	1.56	.16	.26	912	3050	.13	.27	.12	.28
8	.19	.16	.12	.47	.16	.22	944	2500	.13	.19	.12	.19
9	.17	.16	.12	.23	.16	.19	765	1800	.13	.14	.14	.15
10	.16	.16	.12	.18	.22	.17	706	1070	.13	.12	.18	.17
11	.14	.16	.13	.16	.19	.15	579	328	.15	.12	.19	.18
12	.13	.14	.12	.13	.17	.14	277	.36	.14	.12	.17	.15
13	.12	.16	.12	.12	.15	.16	164	.14	.14	1.34	.15	.15
14	.12	.16	.13	.12	.14	.14	363	.14	.13	.42	.13	.23
15	.12	.14	.13	.12	.16	.15	735	.13	.14	.25	.13	.17
16	.14	.12	.12	.12	.13	.14	919	.12	.13	.21	.12	.15
17	.13	.13	.13	.12	.12	.14	706	12.6	.12	.17	.14	.14
18	.12	.14	.13	.13	.30	.12	408	1200	.12	1.97	.15	.15
19	.12	.20	.14	.14	.20	.12	238	2540	.12	.33	.16	.15
20	.12	.23	.13	.21	.14	.12	263	2930	.12	.21	.15	.16
21	.12	.17	.13	.15	404	.12	49.0	2430	.12	.16	.14	.15
22	.12	.35	.13	.13	3570	.12	.18	1080	.12	.14	.27	.14
23	.12	.30	.16	.12	4540	.12	.12	.83	.12	.14	.21	.12
24	.12	.23	.18	.15	4330	.12	.12	.35	.12	.14	.17	.12
25	.12	.18	.22	.15	3570	.12	.12	.25	.12	.17	.17	.12
26	.12	.15	.16	.14	2300	1.05	30.3	.19	.17	.17	.15	.12
27	.14	.14	.16	.12	856	3.67	458	.16	.13	.15	.13	.12
28	.14	.13	.16	.33	32.2	12.8	863	.15	.12	.16	.12	.12
29	.17	.16	.18	.33	---	79.3	1410	.13	.12	.16	.12	.12
30	.33	.12	.19	.23	---	442	1500	.13	.18	.17	.12	.12
31	.68	---	.21	.16	---	1000	---	.13	---	.17	.12	---
MEAN	.16	.19	.14	.25	700	82.2	670	1010	.13	.27	.15	.16
MAX	.68	.37	.22	1.56	4540	1000	1540	3400	.18	1.97	.27	.40
MIN	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12
CAL YR 1989	MEAN	667	MAX	12900	MIN	0.11						
WTR YR 1990	MEAN	201	MAX	4540	MIN	0.12						

SAN JACINTO RIVER BASIN

105

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 mi². Prior to Oct. 1, 1988, 19.8 mi². 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.--13 years, 18.0 ft³/s (13,040 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,060 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 21	1500	419	8.28	Apr. 28	0100	*431	*8.39

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	1.6	.10	.30	1.5	32	4.4	13	.52	.62	6.0	.00
2	.02	.57	.09	.21	12	44	2.2	5.9	.40	.57	4.1	.00
3	.01	.24	.06	.38	11	25	.98	46	.34	.35	3.0	.00
4	.01	.11	.05	.78	5.5	11	.57	131	.33	.21	2.3	.00
5	.01	.10	.04	3.9	2.4	5.8	.39	81	.28	2.5	1.7	.00
6	.00	.18	.03	7.0	1.2	3.3	1.5	52	.21	11	1.5	.00
7	.00	.23	.02	8.7	.59	2.2	2.5	33	.14	9.1	1.3	.00
8	.00	.25	.01	4.4	.36	1.7	1.1	22	.11	17	1.0	.01
9	.00	.20	.01	2.6	.30	1.6	.72	16	.11	15	.77	.00
10	.00	3.3	.01	1.5	.51	1.2	1.7	9.0	.11	8.5	.56	.03
11	.00	3.7	.01	.92	.54	.91	4.3	5.2	.11	5.2	.39	.50
12	.00	2.2	.00	.56	.40	.77	1.5	3.3	.11	3.3	.26	.15
13	.00	1.3	.00	.32	.30	.78	.64	2.3	.12	5.8	.17	.14
14	.00	.82	.00	.22	.18	.86	8.2	2.0	.12	5.6	.11	.24
15	.00	.51	.01	.16	.13	.98	8.8	2.1	.11	5.0	.07	.16
16	.00	.27	.03	.13	.09	.85	2.2	1.6	.11	3.8	.05	.16
17	.00	.16	.04	.11	.05	.58	1.0	14	.11	2.7	.04	.12
18	.00	.11	.05	.12	.36	.41	.61	25	.11	6.3	.03	.30
19	.00	.11	.06	.21	.69	.29	.39	24	.11	8.4	.02	.46
20	.00	.18	.06	.92	.84	.21	.28	14	.11	9.1	.02	.22
21	.00	.24	.06	.62	165	.15	.22	9.2	.11	11	.07	.14
22	.00	1.2	.07	.31	123	.11	.17	14	.11	21	.13	.12
23	.00	4.0	.09	.19	49	.08	.13	16	.11	17	.05	.10
24	.00	2.3	.15	.16	25	.07	.10	5.9	.11	12	.03	.09
25	.00	1.1	.21	.17	12	.05	.07	2.9	7.4	11	.01	.05
26	.00	.68	.19	.14	6.6	.04	43	1.8	53	7.8	.01	.03
27	.00	.50	.23	.10	3.8	.03	92	1.4	21	5.4	.01	.01
28	.00	.33	.27	1.5	6.5	.19	250	1.1	6.3	4.8	.00	.01
29	.05	.20	.27	3.6	---	1.5	67	.89	1.7	9.4	.00	.01
30	2.0	.13	.40	1.0	---	12	29	.75	.75	8.0	.00	.00
31	5.6	---	.41	.59	---	7.7	---	.64	---	7.8	.00	---
TOTAL	7.73	26.82	3.03	41.82	429.84	156.36	525.67	556.98	94.26	235.25	23.70	3.05
MEAN	.25	.89	.098	1.35	15.4	5.04	17.5	18.0	3.14	7.59	.76	.10
MAX	5.6	4.0	.41	8.7	165	44	250	131	53	21	6.0	.50
MIN	.00	.10	.00	.10	.05	.03	.07	.64	.11	.21	.00	.00
AC-FT	15	53	6.0	83	853	310	1040	1100	187	467	47	6.0
CAL YR 1989	TOTAL	3109.09	MEAN	8.52	MAX	447	MIN	.00	AC-FT	6170		
WTR YR 1990	TOTAL	2104.51	MEAN	5.77	MAX	250	MIN	.00	AC-FT	4170		

SAN JACINTO RIVER BASIN

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 1990 (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, 1973 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 ft³/s Sept. 19, 1979, at 2100 hours (gage height, 24.42 ft); no flow for few days during period July to September 1977, and during the 1978 and 1980 water years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 27	2330	*415	*18.81	No other peak greater than base discharge.			

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 releveing 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, 6,200 acre-ft May 5 at 2045 hours (elevation, 90.29 ft); minimum, 0.35 acre-ft Dec. 3 (elevation, 71.66).

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

71.1	0	77.2	54	83.0	598	89.0	4,300
73.6	2	78.0	85	84.5	1,030	89.5	4,960
75.1	8	79.0	134	86.0	1,680	90.0	5,710
75.7	16	80.0	202	87.0	2,320	90.3	6,210
76.4	30	81.5	351	88.0	3,190		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.43	.70	.36	.43	5.5	438	2380	3490	.43	.49	1.5	.66
2	.45	.55	.36	.40	63	904	2470	3300	.44	.46	.76	.59
3	.45	.44	.36	.43	21	480	1850	3780	.43	.44	.65	.55
4	.44	.39	.36	.54	.93	17	1270	5430	.42	.46	.64	.59
5	.43	.37	.36	.43	.54	.63	1290	6180	.44	2.7	.55	.48
6	.43	.37	.36	13	.47	1.1	1050	5950	.46	1.4	.46	.47
7	.43	.36	.36	4.0	.43	.95	810	4930	.37	8.2	.43	.49
8	.51	.36	.36	.95	.44	.86	846	4010	.36	1.9	.43	.53
9	.50	.36	.36	.58	.44	.78	739	2680	.36	1.1	.40	.59
10	.49	.36	.36	.46	.78	.74	764	1030	.36	.86	.39	2.3
11	.47	.50	.36	.41	.44	.75	790	156	.36	.75	.38	32
12	.49	.43	.36	.37	.40	.82	554	.83	.36	.72	.38	1.5
13	.48	.37	.36	.37	.37	1.1	444	.71	.36	1.3	.37	.63
14	.47	.37	.36	.36	.37	1.1	840	.63	.37	1.1	.38	.60
15	.46	.36	.37	.38	.41	1.4	1190	.60	.37	.76	.38	.49
16	.47	.36	.36	.37	.41	1.1	1160	.55	.36	.64	.38	.50
17	.47	.45	.37	.37	.40	1.1	882	61	.36	.63	.39	.82
18	.44	.36	.39	.38	1.4	1.1	615	240	.36	25	.38	.84
19	.43	.38	.40	.45	.61	1.2	476	198	.36	1.7	.39	1.1
20	.41	.43	.39	1.0	.44	1.2	491	89	.36	1.1	.41	.59
21	.42	.38	.39	.54	989	1.2	318	1.3	.36	5.0	.46	.46
22	.51	.65	.40	.43	4140	1.2	95	.66	.36	1.9	1.2	.39
23	.55	.67	.42	.40	3830	1.3	.41	1.1	.36	1.9	.57	.37
24	.49	.43	.45	.44	2720	1.2	.38	.69	.37	1.7	.46	.37
25	.46	.38	.44	.54	1370	1.2	.37	.52	.38	1.2	.44	.37
26	.47	.36	.41	.41	260	19	218	.46	124	.90	.41	.37
27	.53	.36	.39	.39	.74	37	1140	.41	69	.73	.43	.36
28	.53	.36	.37	7.4	25	139	3140	.42	1.0	.71	.43	.36
29	4.2	.36	.45	1.2	---	454	3980	.46	.59	.89	.43	.36
30	26	.36	.45	.50	---	1460	3920	.44	.48	5.3	.44	.37
31	1.8	---	.45	.43	---	2220	---	.43	---	61	.44	---
MAX	26	.70	.45	13	4140	2220	3980	6180	124	61	1.5	32
MIN	.41	.36	.36	.36	.37	.63	.37	.41	.36	.44	.37	.36

CAL YR 1989 MAX 18800 MIN 0.33
WTR YR 1990 MAX 6180 MIN 0.36

SAN JACINTO RIVER BASIN

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 recorder 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.--No estimated daily discharges. Records fair. 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. One observation of water temperature was made during the year.

AVERAGE DISCHARGE.--45 years, 211 ft³/s (152,900 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, 2,540 ft³/s Feb. 21 at 1330 hours (gage height, 63.47 ft, influenced by backwater); minimum daily, 19 ft³/s Mar. 27, Apr. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	131	25	47	101	496	39	688	42	57	148	33
2	23	78	25	42	292	522	30	331	42	47	48	32
3	23	62	28	48	304	925	336	262	40	45	44	40
4	23	49	28	64	215	783	400	124	41	43	42	40
5	22	44	29	46	103	347	26	228	40	49	40	55
6	23	41	29	204	64	131	221	560	40	79	35	74
7	25	34	29	282	47	87	283	859	39	87	32	55
8	33	32	27	160	50	77	20	963	38	142	30	45
9	36	32	25	79	50	64	120	965	37	71	29	106
10	32	35	26	54	69	54	169	1100	40	56	32	143
11	28	40	27	43	53	49	176	842	49	52	36	148
12	28	42	28	36	45	49	287	370	43	52	35	160
13	26	37	29	33	37	51	168	63	44	143	33	56
14	25	35	32	30	34	53	200	54	43	155	31	65
15	24	30	34	31	36	62	39	53	42	80	30	52
16	27	30	31	29	36	48	116	49	41	60	31	51
17	26	30	33	28	32	42	299	134	39	57	33	95
18	24	33	35	34	64	40	286	450	40	193	31	90
19	23	38	35	57	99	39	200	334	40	212	34	90
20	22	48	35	92	58	38	19	295	40	103	38	49
21	23	44	33	63	954	39	197	388	40	135	212	47
22	28	81	32	43	761	37	232	603	39	101	134	42
23	31	125	37	31	1160	38	80	675	40	96	69	39
24	29	59	44	41	1310	37	37	141	40	91	36	36
25	28	39	50	46	1220	36	35	80	53	80	34	35
26	30	33	43	35	1210	29	225	63	226	67	33	33
27	29	29	37	31	904	19	434	55	248	54	31	33
28	30	27	46	118	618	76	1080	52	121	47	29	32
29	145	30	52	230	---	249	760	49	53	50	27	32
30	334	27	47	88	---	196	722	47	47	175	26	32
31	279	---	51	50	---	71	---	44	---	194	30	---
TOTAL	1501	1395	1062	2215	9926	4784	7236	10921	1727	2873	1473	1840
MEAN	48.4	46.5	34.3	71.5	354	154	241	352	57.6	92.7	47.5	61.3
MAX	334	131	52	282	1310	925	1080	1100	248	212	212	160
MIN	22	27	25	28	32	19	19	44	37	43	26	32
AC-FT	2980	2770	2110	4390	19690	9490	14350	21660	3430	5700	2920	3650
CAL YR 1989	TOTAL	68858	MEAN	189	MAX	3100	MIN	21	AC-FT	136600		
WTR YR 1990	TOTAL	46953	MEAN	129	MAX	1310	MIN	19	AC-FT	93130		

SAN JACINTO RIVER BASIN

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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 Rumel Creek, 3.5 mi downstream from station 08073500, and 3.7 mi upstream from station 08073700.

DRAINAGE AREA.--307 mi², unadjusted for basin boundary changes.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorders and crest-stage gage. Datum of gage is 0.67 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment.

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

AVERAGE DISCHARGE.--19 years, 296 ft³/s (214,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,350 ft³/s Aug. 31, 1981 (gage height, 64.58 ft); minimum daily, 20 ft³/s Apr. 20, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,320 ft³/s Apr. 27 at 2330 hours (gage height, 54.09 ft); minimum daily, 20 ft³/s Apr. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	201	50	83	239	884	45	734	58	77	201	e60
2	51	139	49	80	416	562	32	434	54	59	97	e59
3	52	108	52	118	437	986	298	476	52	52	88	e55
4	53	88	52	127	332	872	506	256	52	48	81	e82
5	52	82	53	103	182	462	25	245	52	62	73	e114
6	51	110	52	405	119	196	231	627	52	123	59	e176
7	57	70	52	476	91	133	344	838	50	137	48	e135
8	64	61	52	275	110	103	24	1030	48	191	47	e92
9	72	58	47	155	130	86	107	946	46	100	45	e330
10	115	60	47	105	160	70	267	1110	53	67	51	e265
11	66	68	51	83	108	61	180	909	64	58	57	e280
12	63	77	49	71	88	70	315	464	55	60	55	e246
13	59	77	51	64	73	70	214	103	58	161	49	e154
14	56	66	55	59	67	83	400	73	55	198	45	e122
15	53	57	55	60	87	79	53	67	53	113	43	e130
16	58	53	51	59	67	58	103	60	51	85	71	e95
17	58	51	56	56	58	49	332	161	46	72	54	e170
18	53	67	64	69	147	46	319	517	46	208	47	e150
19	50	80	65	156	171	43	248	407	47	274	80	e156
20	47	92	62	217	88	43	20	357	48	132	75	e82
21	49	79	58	104	1040	45	184	434	47	153	e340	e84
22	53	176	56	72	934	40	279	643	45	123	e511	e66
23	59	177	64	60	e1200	39	116	744	45	109	e270	e48
24	68	106	75	116	e1340	39	37	228	45	102	e98	e44
25	59	77	84	94	e1300	37	36	132	142	93	e70	e42
26	72	64	83	72	e1250	33	484	94	283	84	e60	e40
27	67	61	70	62	e1100	21	487	75	299	66	e56	e38
28	61	59	89	283	e800	172	1350	66	182	62	e53	e39
29	280	58	101	374	---	448	804	63	74	72	e48	e39
30	605	54	101	164	---	365	761	61	68	299	e45	e37
31	364	---	88	98	---	109	---	59	---	341	e48	---
TOTAL	2917	2576	1934	4320	12134	6304	8601	12413	2270	3781	2965	3430
MEAN	94.1	85.9	62.4	139	433	203	287	400	75.7	122	95.6	114
MAX	605	201	101	476	1340	986	1350	1110	299	341	511	330
MIN	47	51	47	56	58	21	20	59	45	48	43	37
AC-FT	5790	5110	3840	8570	24070	12500	17060	24620	4500	7500	5880	6800
CAL YR 1989	TOTAL	88152	MEAN	242	MAX	3720	MIN	23	AC-FT	174800		
WTR YR 1990	TOTAL	63645	MEAN	174	MAX	1350	MIN	20	AC-FT	126200		

e Estimated

SAN JACINTO RIVER BASIN

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 1989 TO SEPTEMBER 1990

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 CAC03)	
NOV 29...	0945	50	782	7.1	19.5	20	15	8.3	88	1.3	0.8	130	
FEB 12...	1010	90	606	7.7	17.5	130	16	8.5	88	1.4	1.0	110	
MAY 21...	1245	426	239	7.8	27.0	110	24	6.5	82	2.7	2.0	55	
AUG 02...	0904	83	464	8.0	28.0	55	17	7.2	91	1.4	1.0	98	
DATE		HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (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 CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV 29...	0	40	7.7	110	4	9.7	190	30	91	0.40	21	425	
FEB 12...	0	35	6.5	77	3	7.9	160	26	64	0.30	16	327	
MAY 21...	0	17	3.1	24	1	4.7	66	10	21	0.20	9.3	129	
AUG 02...	0	31	4.9	53	2	6.0	110	15	57	0.20	41	276	
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)	CARBON, ORGANIC TOTAL (MG/L AS C)	
NOV 29...		24	18	6	7.56	0.340	7.90	0.360	1.1	1.5	4.60	7.2	
FEB 12...		61	46	15	5.11	0.190	5.30	0.480	1.5	2.0	0.980	9.3	
MAY 21...		2	2	0	1.51	0.090	1.60	0.100	1.1	1.2	12.0	12	
AUG 02...		45	12	33	2.75	0.050	2.80	0.090	1.3	1.4	2.00	8.2	

SAN JACINTO RIVER BASIN

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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. Datum of gage is 1.35 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. 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. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--19 years (water years 1964-76, 1985-90), 267 ft³/s (193,400 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, 2,280 ft³/s Feb. 21 at 1745 hours (gage height, 46.18 ft); minimum daily, 24 ft³/s Mar. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	251	61	103	255	1050	62	773	70	85	234	63
2	54	180	59	99	416	650	44	510	56	62	135	62
3	54	145	62	146	431	1110	279	496	57	53	112	58
4	53	119	64	149	338	1000	626	352	59	48	100	85
5	53	114	66	130	189	578	38	233	57	66	97	120
6	51	167	65	e450	127	234	248	656	53	136	78	185
7	61	95	62	e600	99	161	440	851	51	159	64	141
8	66	79	66	e330	109	124	34	1120	53	226	58	98
9	77	75	59	e180	155	101	100	984	47	144	53	348
10	120	77	58	e120	178	83	353	1180	54	99	59	279
11	80	85	64	e90	118	69	199	1010	67	86	70	300
12	67	97	60	e80	90	82	372	512	60	86	67	259
13	65	102	61	71	73	94	284	134	63	172	59	162
14	61	86	66	64	67	121	512	82	59	231	52	128
15	57	73	e66	66	100	108	81	74	56	151	49	140
16	63	66	e62	65	67	72	91	65	54	115	88	100
17	64	63	e68	61	57	69	374	164	50	98	69	179
18	59	86	e76	75	159	56	355	541	51	213	54	159
19	55	105	e76	124	184	50	302	428	49	312	109	165
20	50	120	e70	250	96	50	31	379	54	159	107	86
21	51	101	e68	125	1010	47	180	439	55	160	355	88
22	55	224	e66	83	1110	42	335	661	52	138	525	70
23	65	198	e74	67	1270	40	155	808	50	120	281	51
24	74	134	e86	136	1440	41	47	279	49	109	104	46
25	63	96	e94	116	1400	40	42	156	134	97	74	44
26	130	78	e92	83	1360	36	641	109	309	89	63	42
27	90	73	e80	67	1180	24	581	83	312	66	59	41
28	73	83	e100	303	967	220	1550	72	207	61	56	38
29	398	69	129	413	---	512	860	68	83	70	50	40
30	794	68	134	183	---	511	809	65	94	247	47	39
31	475	---	110	113	---	154	---	60	---	469	51	---
TOTAL	3530	3309	2324	4942	13045	7529	10025	13344	2465	4327	3379	3616
MEAN	114	110	75.0	159	466	243	334	430	82.2	140	109	121
MAX	794	251	134	600	1440	1110	1550	1180	312	469	525	348
MIN	50	63	58	61	57	24	31	60	47	48	47	38
AC-FT	7000	6560	4610	9800	25870	14930	19880	26470	4890	8580	6700	7170
CAL YR 1989	TOTAL	97539	MEAN	267	MAX	3900	MIN	37	AC-FT	193500		
WTR YR 1990	TOTAL	71835	MEAN	197	MAX	1550	MIN	24	AC-FT	142500		

e Estimated

SAN JACINTO RIVER BASIN

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-foot 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 good. 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, 4,520 ft³/s Apr. 26 at 2200 hours (gage height, 17.68 ft); maximum gage-height 18.00 ft Apr. 26 at 1900 hrs; minimum discharges not determined (affected by tides).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	306	---	---	---	1760	---	808	---	---	---	---
2	---	229	---	---	---	1020	---	656	---	---	---	---
3	---	---	---	---	---	1180	---	618	---	---	---	---
4	---	---	---	---	---	1110	---	942	---	---	---	---
5	---	---	---	---	---	747	---	---	---	---	---	---
6	---	---	---	---	---	247	---	---	---	---	---	---
7	---	---	---	---	---	---	---	722	---	---	---	---
8	---	---	---	---	---	---	---	1290	---	---	---	---
9	---	---	---	---	---	---	---	988	---	---	---	---
10	---	---	---	---	---	---	---	1340	---	---	---	---
11	---	---	---	---	---	---	---	1140	---	---	---	---
12	---	---	---	---	---	---	---	586	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	578	---	---	---	---	---	284	---
22	---	---	---	---	1690	---	---	---	---	---	1280	---
23	---	---	---	---	1460	---	---	---	---	---	297	---
24	---	---	---	---	1730	---	---	---	---	---	---	---
25	---	---	---	---	1650	---	---	---	---	---	---	---
26	---	---	---	---	1450	---	1510	---	---	---	---	---
27	---	---	---	---	1410	---	1500	---	---	---	---	---
28	---	---	---	---	1050	323	2370	---	---	---	---	---
29	955	---	---	---	---	710	961	---	---	---	---	---
30	1510	---	---	---	---	1230	860	---	---	---	---	---
31	1130	---	---	---	---	319	---	---	---	---	---	---
CAL YR 1989	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---	---	---
WTR YR 1990	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---	---	---

SAN JACINTO RIVER BASIN

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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, 1000 microsiemens Dec. 9, Jan. 16; minimum, 67 microsiemens Apr. 27.

WATER TEMPERATURE: Maximum, 31.5°C several days during summer months; minimum, 5.0°C Dec. 24.

DISSOLVED OXYGEN: Maximum, 10.9 mg/L Dec. 23, 24; minimum, 1.7 mg/L June 26.

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	880	841	849	385	264	327	764	742	755	772	726	750
2	869	826	847	488	377	439	792	761	777	754	740	747
3	895	834	849	533	475	501	795	737	774	773	619	746
4	933	846	871	591	536	559	804	786	795	608	559	586
5	884	831	850	605	432	581	802	776	787	615	579	598
6	965	861	909	563	421	527	820	792	808	619	333	486
7	995	953	975	582	424	522	857	818	834	387	282	319
8	999	996	999	760	533	643	982	848	904	367	320	349
9	---	---	---	---	---	---	1000	987	996	480	367	423
10	867	821	835	---	---	---	---	---	---	584	484	542
11	983	764	825	---	---	---	827	817	821	713	588	646
12	820	761	783	---	---	---	832	817	823	765	715	735
13	850	801	818	---	---	---	838	810	822	790	769	781
14	846	804	823	---	---	---	851	822	831	889	791	862
15	836	782	801	---	---	---	849	817	831	998	890	987
16	914	779	796	---	---	---	848	823	833	1000	986	990
17	801	774	788	---	---	---	864	826	841	996	772	872
18	789	767	776	---	---	---	892	842	861	795	767	784
19	798	769	779	---	---	---	854	792	820	802	142	621
20	795	760	776	---	---	---	962	810	875	449	296	375
21	794	778	788	767	699	718	991	960	975	622	379	536
22	814	785	794	755	257	602	903	791	813	604	512	550
23	841	795	814	403	285	325	814	795	807	674	607	642
24	859	775	822	438	394	414	815	810	812	679	459	589
25	856	814	836	476	420	444	810	778	791	549	416	475
26	882	142	705	541	480	506	776	747	759	703	475	609
27	404	178	296	613	545	579	748	731	738	704	681	692
28	472	404	432	569	189	408	810	740	766	721	278	575
29	503	162	378	705	546	626	874	731	796	446	204	308
30	267	144	217	764	709	734	706	667	685	455	338	380
31	348	184	269	---	---	---	748	702	724	537	435	488
MONTH	999	142	743	767	189	525	1000	667	815	1000	142	614

SAN JACINTO RIVER BASIN

08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	571	344	508	240	153	183	455	331	389	191	178	183
2	415	283	361	295	168	225	552	451	516	224	185	193
3	360	309	333	274	158	176	653	550	608	355	170	254
4	344	299	322	180	166	170	499	228	260	298	158	225
5	420	325	378	232	182	198	370	246	315	417	300	371
6	526	397	463	355	239	296	561	323	439	412	211	262
7	617	528	569	430	337	387	450	263	304	223	186	209
8	643	418	606	479	421	449	399	301	353	196	168	184
9	544	150	460	537	479	506	591	408	476	194	176	184
10	462	260	385	587	541	558	757	295	459	190	171	179
11	601	426	558	597	580	586	369	279	315	211	188	198
12	604	542	574	675	536	612	436	334	367	251	211	236
13	671	603	625	633	534	588	382	329	356	413	256	334
14	709	670	689	686	584	624	408	141	266	622	425	509
15	709	536	633	640	479	553	328	191	261	707	636	675
16	659	585	610	678	508	612	476	333	409	803	699	724
17	736	668	702	729	687	702	613	279	395	834	252	671
18	737	384	588	746	704	727	310	288	297	611	195	385
19	599	363	467	763	728	747	325	305	316	236	194	216
20	553	438	488	838	739	770	456	334	389	277	242	264
21	555	139	418	809	768	791	736	446	511	307	245	275
22	191	142	164	837	789	818	768	363	417	281	159	225
23	146	132	137	824	752	795	473	372	435	231	203	218
24	144	128	133	839	763	803	580	455	500	323	232	262
25	142	129	136	851	775	831	737	588	655	448	335	410
26	151	139	144	856	833	844	779	94	495	528	435	471
27	180	145	154	875	834	849	282	67	202	593	510	541
28	231	180	192	862	219	590	203	111	150	622	592	609
29	---	---	---	382	82	272	203	169	188	715	638	663
30	---	---	---	229	150	192	184	168	177	735	671	705
31	---	---	---	315	198	259	---	---	---	806	526	741
MONTH	737	128	421	875	82	539	779	67	374	834	158	373
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	753	616	687	577	390	460	368	327	351	834	786	820
2	759	679	729	709	575	643	439	137	337	819	479	665
3	823	748	789	744	648	692	526	200	404	752	633	710
4	827	804	816	757	705	741	629	531	571	781	695	755
5	842	811	822	751	269	660	665	618	638	761	561	650
6	851	813	826	693	208	502	728	612	644	717	300	453
7	872	823	841	696	544	600	982	650	680	652	345	477
8	871	844	858	631	399	536	720	672	692	527	98	430
9	919	853	868	472	327	401	867	693	734	588	191	478
10	878	809	854	555	479	519	807	533	739	374	154	248
11	845	819	833	617	564	583	827	741	756	411	175	314
12	823	663	780	715	619	651	780	741	759	371	246	309
13	770	653	719	689	586	623	822	720	736	381	86	309
14	791	717	757	692	402	501	811	719	744	483	310	404
15	814	783	800	448	382	423	948	726	769	595	492	547
16	842	808	823	558	441	476	823	310	539	556	312	444
17	835	820	827	598	551	568	770	515	691	615	315	497
18	838	817	828	675	599	634	986	480	633	553	304	421
19	830	811	819	636	266	380	836	714	749	527	389	465
20	853	814	832	459	323	390	653	163	426	512	421	469
21	853	832	844	525	455	486	667	76	523	614	503	547
22	873	838	854	523	424	475	328	143	216	627	264	454
23	869	846	859	474	281	396	435	311	387	704	386	591
24	872	849	862	519	274	452	478	228	324	729	684	707
25	865	758	843	580	522	551	639	500	579	760	719	737
26	768	154	367	631	575	597	698	640	670	776	743	757
27	394	259	317	662	580	617	730	687	709	801	780	789
28	337	282	318	707	660	678	809	720	750	810	781	798
29	512	338	400	700	662	677	806	742	772	840	798	818
30	589	188	487	696	597	675	820	784	802	855	816	836
31	---	---	---	673	180	312	832	680	797	---	---	---
MONTH	919	154	742	757	180	545	986	76	617	855	86	563

SAN JACINTO RIVER BASIN
08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	25.5	---	---	19.5	19.0	19.0	15.0	14.5	15.0	14.5	14.0	14.5
2	26.0	28.0	26.0	19.5	18.5	19.0	16.0	15.0	15.0	15.0	14.5	14.5
3	25.5	24.0	25.0	18.5	17.5	18.0	15.5	14.5	15.0	17.0	15.0	15.5
4	26.5	24.5	25.5	19.0	17.5	18.0	15.0	13.5	14.5	17.5	17.0	17.0
5	26.5	25.0	25.5	22.0	19.0	20.0	16.0	13.5	14.5	17.0	15.0	16.0
6	27.5	25.5	26.0	23.5	21.5	22.5	18.5	16.0	17.0	15.0	13.5	14.5
7	27.0	25.5	26.5	24.5	23.5	24.0	19.5	18.0	19.0	13.5	13.0	13.5
8	25.5	23.5	24.5	25.5	24.5	24.5	18.0	14.5	16.5	13.5	12.5	13.0
9	23.5	22.0	23.0	24.0	21.5	22.5	14.5	13.5	14.0	15.0	12.5	14.0
10	23.5	21.5	22.5	21.0	19.5	20.5	15.5	13.0	14.0	15.5	14.0	15.0
11	23.5	22.0	22.5	21.0	19.5	20.0	16.0	14.5	15.5	17.5	15.5	16.5
12	24.0	22.0	23.0	21.5	20.0	20.5	14.5	12.0	13.5	17.0	15.5	16.5
13	25.0	23.0	24.0	22.0	21.0	21.5	12.5	10.5	11.5	15.5	14.0	14.5
14	25.5	24.0	24.5	24.0	22.0	23.0	12.5	10.5	11.5	16.5	14.0	15.5
15	25.0	24.0	24.5	24.0	21.5	23.5	14.5	12.5	13.5	18.5	16.5	17.5
16	26.5	24.5	25.5	21.5	18.0	19.5	12.5	10.5	11.0	19.5	18.0	19.0
17	26.0	24.0	25.5	18.0	16.5	17.0	10.5	10.0	10.0	20.5	19.5	20.0
18	24.0	20.5	22.0	17.5	16.5	17.0	10.5	10.0	10.0	21.5	20.5	21.0
19	20.5	18.0	19.0	18.0	17.5	17.5	11.0	10.5	11.0	21.5	20.5	21.5
20	18.5	16.5	17.5	19.5	18.0	18.5	11.5	10.5	11.0	20.5	18.0	19.5
21	20.0	17.0	18.5	20.5	19.5	20.0	11.0	10.5	11.0	18.0	17.0	17.5
22	21.5	19.0	20.0	21.0	20.5	20.5	10.5	7.0	9.0	17.0	15.5	16.0
23	22.5	21.0	21.5	20.5	17.5	18.5	7.0	5.5	6.0	17.5	16.0	16.5
24	23.5	22.5	23.0	17.0	15.5	16.5	7.5	5.0	6.5	19.0	17.5	18.5
25	23.5	23.0	23.0	18.5	17.0	17.5	9.0	7.5	8.0	19.0	16.0	17.5
26	23.5	21.5	22.5	20.5	18.5	19.5	10.5	9.0	10.0	16.0	14.5	15.5
27	23.5	21.5	22.5	22.0	20.5	21.5	12.5	10.5	11.5	17.5	15.5	16.5
28	23.0	22.5	23.0	22.5	20.0	21.5	15.5	12.5	14.0	18.5	16.5	17.5
29	23.5	21.5	22.5	20.0	17.0	18.0	17.5	15.5	16.5	16.0	14.5	15.5
30	23.0	21.5	22.5	16.5	15.5	16.0	19.0	17.5	18.5	15.5	14.5	15.0
31	21.5	20.0	21.0	---	---	---	17.5	15.0	16.0	17.0	14.5	15.5
MONTH	27.5	16.5	23.0	25.5	15.5	20.0	19.5	5.0	13.0	21.5	12.5	16.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	19.5	17.0	18.0	19.0	14.0	17.0	21.5	20.5	21.0	26.0	24.5	25.5
2	19.5	18.5	19.0	14.5	13.5	14.0	22.5	21.0	21.5	26.0	25.5	25.5
3	19.5	18.0	19.0	14.0	13.0	13.5	22.5	20.5	21.5	25.5	23.5	24.5
4	18.0	15.5	17.0	15.5	14.0	15.0	21.0	20.0	20.5	24.0	23.0	23.5
5	15.5	14.5	15.0	17.5	15.0	16.5	23.5	20.0	21.5	23.0	22.0	22.5
6	16.0	14.5	15.5	19.5	17.0	18.0	22.5	20.0	21.0	23.0	21.5	22.5
7	18.0	16.5	17.0	20.5	19.0	19.5	20.0	19.0	19.5	22.5	22.0	22.5
8	20.0	18.0	19.0	22.0	20.0	21.0	19.0	18.0	18.5	22.5	22.0	22.5
9	20.5	19.5	20.5	23.5	21.5	22.0	20.5	18.5	19.5	23.5	22.0	23.0
10	20.0	18.5	19.0	23.5	22.5	23.0	21.5	20.0	20.5	24.5	23.0	23.5
11	19.0	17.5	18.0	23.0	22.5	23.0	22.5	20.5	21.5	24.0	23.0	23.5
12	19.0	17.0	18.0	23.0	22.0	22.5	21.5	19.5	20.5	24.5	23.5	24.0
13	20.0	18.0	18.5	22.5	21.5	22.0	21.0	20.0	20.5	26.5	24.5	25.0
14	20.5	19.5	20.0	22.5	21.0	22.0	20.5	18.0	19.0	27.5	25.5	26.5
15	22.0	20.5	21.0	21.0	20.0	20.5	21.0	18.0	19.5	28.5	26.5	27.5
16	22.0	19.0	20.0	20.5	18.5	19.5	23.5	20.5	22.0	28.5	27.0	28.0
17	19.0	16.5	17.5	21.0	18.5	19.5	23.5	22.0	23.0	28.5	26.5	27.5
18	16.0	14.5	15.5	21.5	18.5	20.0	23.5	22.0	23.0	27.0	26.5	26.5
19	17.0	14.5	15.5	21.0	19.0	20.0	23.5	22.5	23.0	27.5	26.0	26.5
20	17.5	15.0	16.5	20.0	18.0	19.0	25.0	23.0	23.5	28.5	26.5	27.5
21	17.5	16.0	17.0	20.5	17.5	19.0	26.0	24.0	25.0	29.5	27.0	28.0
22	16.0	15.0	15.5	21.0	18.5	20.0	26.0	24.0	25.0	29.0	27.0	28.0
23	15.0	14.5	15.0	22.5	20.0	21.0	26.5	24.5	25.0	27.5	26.5	27.0
24	15.5	14.5	15.0	22.5	21.0	21.5	25.5	24.5	25.0	28.5	26.0	27.0
25	16.0	15.0	15.5	22.0	19.5	21.0	25.0	24.0	24.5	29.0	26.5	27.5
26	16.5	16.0	16.0	21.5	20.0	20.5	25.0	20.0	23.0	29.0	26.5	27.5
27	17.5	16.5	17.0	20.0	19.0	19.5	22.5	20.5	21.5	29.5	27.5	28.5
28	19.0	17.5	18.5	20.5	19.5	20.0	22.0	20.5	21.5	29.0	28.0	28.5
29	---	---	---	21.0	19.5	20.5	24.0	22.0	23.0	28.5	27.0	27.5
30	---	---	---	19.5	19.0	19.0	25.5	23.5	24.5	28.5	27.0	28.0
31	---	---	---	21.0	18.5	19.5	---	---	---	30.0	28.0	28.5
MONTH	22.0	14.5	17.5	23.5	13.0	19.5	26.5	18.0	22.0	30.0	21.5	26.0

SAN JACINTO RIVER BASIN
08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.3	5.8	6.4	---	---	---	8.2	8.0	8.1	8.3	7.5	8.0
2	7.1	6.1	6.5	---	---	---	8.2	8.0	8.1	8.4	8.1	8.2
3	7.1	6.1	6.5	---	---	---	8.5	7.9	8.2	8.2	6.8	7.6
4	7.1	6.0	6.5	---	---	---	8.5	8.2	8.3	6.9	6.6	6.8
5	7.1	5.9	6.3	---	---	---	8.4	8.1	8.3	7.8	6.9	7.4
6	7.2	5.8	6.3	6.3	4.9	5.6	8.2	7.6	8.0	9.0	7.7	8.4
7	6.2	4.2	5.6	5.5	4.8	5.2	7.6	6.8	7.1	9.4	9.0	9.2
8	6.5	4.4	5.4	5.5	4.8	5.2	7.8	7.0	7.4	9.5	9.4	9.5
9	7.4	6.3	6.7	5.9	5.4	5.7	8.6	7.8	8.3	9.5	8.8	9.2
10	7.5	6.6	7.0	6.5	5.9	6.2	8.5	8.1	8.3	9.1	8.3	8.8
11	7.1	6.7	6.9	6.8	6.5	6.6	8.1	7.6	7.7	8.3	7.7	8.1
12	7.5	6.7	7.0	6.9	6.5	6.7	8.5	7.7	8.1	7.9	7.6	7.8
13	7.4	6.4	6.9	6.8	6.2	6.6	9.1	8.2	8.7	8.4	7.9	8.1
14	7.5	6.2	6.7	6.3	5.2	5.7	9.1	8.6	8.9	8.4	7.9	8.2
15	6.7	5.3	6.2	6.0	4.6	5.3	8.8	8.1	8.4	7.8	7.4	7.6
16	6.9	5.2	6.2	6.9	5.9	6.4	9.2	8.2	8.6	7.5	6.9	7.2
17	6.4	5.2	5.9	7.5	6.9	7.2	9.2	8.8	9.0	6.9	5.8	6.4
18	6.8	5.7	6.3	7.5	6.9	7.2	9.3	8.8	9.0	6.1	5.7	5.8
19	8.1	6.8	7.3	7.2	6.4	6.8	9.3	8.6	8.9	7.2	5.6	6.2
20	8.4	7.4	7.8	6.8	6.2	6.6	9.4	8.4	8.8	6.6	5.5	6.2
21	8.3	7.4	7.7	7.0	6.3	6.7	9.6	8.6	9.0	7.5	6.6	7.1
22	8.0	6.8	7.3	7.2	6.5	6.7	10.1	9.0	9.4	7.8	7.1	7.6
23	7.1	6.2	6.7	7.7	6.4	7.0	10.9	9.8	10.4	7.5	7.0	7.2
24	7.2	6.0	6.4	8.4	7.8	8.2	10.9	10.3	10.6	7.1	6.2	6.8
25	6.8	5.9	6.3	8.2	7.7	8.1	10.8	10.1	10.4	6.6	6.2	6.5
26	7.2	5.2	6.2	7.7	7.0	7.3	10.4	9.6	10.1	7.9	6.7	7.5
27	6.4	4.7	5.4	6.9	6.3	6.7	9.9	8.9	9.5	7.7	7.2	7.5
28	5.5	4.6	5.0	9.6	5.3	6.5	8.9	8.0	8.5	8.0	6.7	7.3
29	---	---	---	7.3	6.0	6.6	7.9	5.7	7.0	8.2	7.6	8.0
30	---	---	---	8.0	7.3	7.7	6.7	5.1	5.9	8.4	8.1	8.3
31	---	---	---	---	---	---	7.5	6.0	6.8	8.3	7.7	8.1
MONTH	8.4	4.2	6.5	9.6	4.6	6.6	10.9	5.1	8.5	9.5	5.5	7.6

SAN JACINTO RIVER BASIN

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08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7.9	6.9	7.4	9.6	7.3	8.3	7.5	6.5	6.9	6.4	6.2	6.3
2	7.4	6.8	7.1	9.7	9.1	9.4	6.7	5.7	6.2	6.2	5.7	6.1
3	7.5	7.3	7.4	9.9	9.6	9.7	7.1	6.0	6.6	7.6	4.9	5.8
4	8.5	7.3	7.9	9.6	9.1	9.2	7.8	7.2	7.6	6.2	5.6	5.8
5	8.8	8.5	8.7	9.1	8.5	8.7	8.3	7.1	7.7	6.5	5.7	6.2
6	9.3	8.4	8.7	8.5	7.7	8.1	7.2	5.4	6.4	7.0	6.6	6.8
7	8.5	7.8	8.3	7.8	7.3	7.6	7.8	5.8	7.3	7.1	6.6	7.0
8	8.2	7.1	7.7	7.3	6.9	7.1	8.1	7.2	7.6	7.0	6.4	6.6
9	9.4	5.9	6.6	6.9	6.5	6.8	8.4	6.9	7.4	7.2	6.5	7.0
10	7.4	6.8	7.0	6.6	6.3	6.5	7.4	6.4	7.0	6.8	6.5	6.6
11	8.1	7.0	7.7	6.7	6.3	6.5	6.6	5.8	6.0	6.7	6.4	6.5
12	8.2	7.6	7.9	6.8	5.6	6.5	7.5	6.4	7.2	6.7	6.3	6.6
13	7.7	7.3	7.5	6.0	2.7	4.8	7.4	7.0	7.3	6.6	6.0	6.5
14	7.3	6.9	7.1	5.9	4.3	4.9	8.3	6.6	7.4	6.3	5.9	6.1
15	7.2	5.7	6.6	6.1	5.0	5.7	7.7	6.1	6.9	6.5	6.1	6.3
16	6.5	5.4	6.0	7.1	5.7	6.6	6.1	5.1	5.8	6.6	6.1	6.3
17	7.6	6.5	7.1	7.3	6.9	7.1	7.2	5.2	6.6	6.8	5.0	6.1
18	9.0	7.6	8.2	7.6	6.9	7.2	7.3	7.1	7.2	5.3	3.6	4.6
19	8.6	8.2	8.4	7.7	7.0	7.4	7.2	7.1	7.1	5.7	5.2	5.6
20	8.6	7.8	8.3	8.3	7.3	7.7	7.1	6.1	6.8	5.9	5.7	5.8
21	8.4	6.4	7.6	8.4	7.5	8.0	7.1	5.5	6.2	6.1	5.7	5.9
22	8.8	8.1	8.3	8.4	7.6	8.0	7.3	6.6	6.9	6.8	5.2	5.8
23	9.1	8.8	9.0	8.4	7.4	7.9	7.9	6.4	7.0	5.8	4.4	5.4
24	9.0	8.8	8.9	8.1	7.3	7.8	6.3	5.7	6.0	5.9	5.5	5.7
25	8.9	8.7	8.8	8.7	7.1	7.9	6.4	5.7	6.0	5.8	4.6	5.3
26	8.7	8.5	8.6	8.5	7.4	7.9	9.7	5.8	6.7	4.9	4.5	4.8
27	8.6	8.3	8.4	8.6	7.5	8.0	8.7	5.3	6.1	4.9	4.5	4.7
28	8.8	7.2	8.2	8.9	5.6	7.4	6.6	5.6	6.0	4.9	4.4	4.7
29	---	---	---	9.7	5.0	6.5	6.6	6.1	6.2	4.9	4.5	4.6
30	---	---	---	8.2	6.8	7.7	6.5	5.9	6.3	5.1	4.5	4.7
31	---	---	---	8.0	7.0	7.6	---	---	---	5.7	4.4	4.8
MONTH	9.4	5.4	7.8	9.9	2.7	7.4	9.7	5.1	6.7	7.6	3.6	5.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	4.5	3.2	3.8	6.1	5.1	5.8	6.7	5.3	5.9
2	---	---	---	5.8	4.0	4.8	6.1	4.9	5.8	6.2	2.5	5.1
3	---	---	---	6.3	4.7	5.3	5.2	4.3	4.8	6.4	4.5	5.6
4	---	---	---	7.2	4.8	5.7	5.8	4.8	5.5	6.9	5.7	6.3
5	7.4	5.3	6.0	5.4	4.5	4.9	6.2	5.4	5.8	6.7	5.6	6.2
6	7.5	4.7	5.9	5.5	4.1	4.6	6.6	5.6	6.0	6.3	2.8	4.0
7	7.8	4.7	6.1	6.0	4.9	5.4	6.7	5.8	6.2	5.9	4.1	5.4
8	8.6	4.8	6.3	5.5	4.6	5.2	7.5	6.0	6.6	8.4	5.6	6.0
9	8.2	3.6	5.8	5.4	4.9	5.2	7.8	6.3	6.9	6.5	5.0	5.9
10	7.2	4.8	5.7	5.9	5.2	5.6	7.6	6.1	6.7	6.9	4.8	5.9
11	8.1	4.3	5.9	5.9	5.1	5.4	7.6	5.9	6.5	7.3	6.1	6.6
12	7.1	2.4	5.5	6.1	5.0	5.4	8.0	5.9	6.7	6.5	5.7	6.2
13	6.1	3.0	4.6	6.0	3.5	5.2	8.5	5.8	6.8	9.2	6.0	6.6
14	6.2	3.9	5.1	5.9	5.6	5.8	8.3	5.8	6.8	6.2	5.8	6.0
15	6.8	4.7	5.5	6.1	5.7	5.9	7.7	5.6	6.4	6.5	6.1	6.3
16	7.2	4.8	5.8	5.9	5.6	5.8	5.7	2.9	4.4	6.5	4.4	5.5
17	7.0	4.8	5.8	5.8	5.0	5.3	5.5	3.0	4.6	6.5	4.6	5.8
18	7.5	4.8	6.0	6.3	5.2	5.6	5.5	3.5	4.7	6.0	4.6	5.4
19	8.2	4.9	6.2	5.9	4.1	5.6	6.4	5.2	5.7	6.4	5.8	6.1
20	8.8	5.0	6.5	6.0	5.0	5.7	5.6	3.3	4.8	6.3	6.0	6.1
21	8.9	5.2	6.7	5.9	5.8	5.9	8.9	5.5	6.1	6.0	5.0	5.6
22	8.0	5.3	6.4	6.0	5.5	5.8	5.7	3.6	4.3	6.0	4.3	5.2
23	8.2	5.4	6.7	5.9	3.9	5.2	5.6	4.4	5.2	6.6	4.2	5.7
24	8.9	5.5	7.0	5.2	3.6	4.8	5.1	4.6	5.0	7.6	6.3	6.9
25	8.1	4.0	6.7	5.6	5.1	5.3	5.7	5.1	5.5	8.1	7.0	7.4
26	6.1	1.7	3.6	6.1	5.1	5.5	6.1	5.3	5.8	8.3	6.9	7.4
27	5.6	4.3	5.1	6.2	5.3	5.7	6.6	5.6	6.0	8.0	6.8	7.2
28	5.2	4.4	4.9	6.6	5.3	5.8	6.5	5.7	6.0	8.0	6.7	7.1
29	5.5	4.5	4.9	7.1	5.3	6.1	7.0	5.8	6.2	8.1	6.6	7.2
30	5.8	4.3	4.8	7.5	5.2	6.3	7.2	5.6	6.2	8.1	6.7	7.3
31	---	---	---	6.1	2.4	4.2	6.8	5.3	5.8	---	---	---
MONTH	8.9	1.7	5.7	7.5	2.4	5.4	8.9	2.9	5.8	9.2	2.5	6.1

SAN JACINTO RIVER BASIN

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; 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.--Records good except those for estimated daily discharges, which are poor. Low flow is sustained by sewage effluent and industrial waste water. No diversions above station. Stage and rainfall telemetry at station.

AVERAGE DISCHARGE.--54 years, 90.0 ft³/s (65,200 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 29	1700	*8,550	*33.21	Apr. 26	1630	6,920	31.03

Minimum daily discharge, 24 ft³/s Oct. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	60	36	40	280	668	82	45	86	52	114	111
2	28	43	35	46	273	343	53	40	34	38	232	68
3	32	38	35	151	178	86	48	659	32	33	50	49
4	28	33	37	124	67	51	39	547	32	40	37	39
5	28	104	36	106	38	44	38	127	32	514	34	41
6	27	182	39	516	37	42	200	59	34	147	33	53
7	33	37	38	359	36	44	54	43	34	45	33	44
8	31	28	36	72	103	42	42	129	32	37	34	81
9	30	27	36	44	141	41	38	86	31	34	36	187
10	32	26	36	38	163	41	256	43	68	36	46	355
11	29	26	36	e39	42	41	179	39	38	34	35	393
12	27	26	36	e37	41	89	47	40	39	35	35	177
13	26	85	37	e37	37	83	37	40	34	36	36	208
14	27	33	39	e36	37	120	366	39	35	32	65	48
15	26	29	42	e35	83	86	130	38	32	30	423	39
16	26	27	36	e33	38	45	42	38	32	54	211	78
17	25	29	35	e27	36	45	37	48	31	44	45	300
18	25	38	35	e26	228	46	35	43	33	41	35	164
19	24	72	35	e220	83	45	35	35	33	108	143	38
20	26	43	36	e180	40	45	34	35	33	70	83	36
21	32	34	36	e60	1140	47	35	37	34	128	110	38
22	31	261	36	e40	430	45	37	282	35	42	42	42
23	32	90	41	e33	116	45	38	109	35	224	35	31
24	30	33	44	e250	52	46	37	42	35	100	37	30
25	30	31	44	e200	44	49	36	34	176	40	33	30
26	34	32	46	e70	40	47	1590	33	426	37	33	31
27	29	53	44	e40	41	47	772	32	128	35	35	31
28	30	150	56	e450	356	763	761	36	43	35	34	32
29	1720	35	158	e200	---	849	142	36	47	38	35	31
30	750	35	136	e70	---	800	58	37	184	384	36	32
31	247	---	48	35	---	252	---	41	---	397	63	---
TOTAL	3524	1740	1420	3614	4200	5037	5298	2892	1898	2920	2253	2837
MEAN	114	58.0	45.8	117	150	162	177	93.3	63.3	94.2	72.7	94.6
MAX	1720	261	158	516	1140	849	1590	659	426	514	423	393
MIN	24	26	35	26	36	41	34	32	31	30	33	30
AC-FT	6990	3450	2820	7170	8330	9990	10510	5740	3760	5790	4470	5630
CAL YR 1989	TOTAL	59326	MEAN	163	MAX	10700	MIN	24	AC-FT	117700		
WTR YR 1990	TOTAL	37633	MEAN	103	MAX	1720	MIN	24	AC-FT	74650		

e Estimated

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 20...	1224	40	724	8.2	18.0	15	12	19.0	200	2.6	2.4	2300
JUN 12...	1050	31	866	8.5	29.0	5	1.3	12.0	155	2.1	2.0	2500
JUL 17...	0722	41	726	7.4	25.5	22	5.6	7.5	91	1.7	1.7	2200
AUG 21...	1140	34	738	8.9	31.0	16	1.9	17.8	237	1.8	1.7	2000
27...	1024	31	860	8.6	30.0	13	1.4	13.8	181	2.2	2.0	12000

[illegible]

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 20...	0.40	19	402	18	17	1	6.60	0.200	6.80	0.280	1.1
JUN 12...	--	24	--	1	<1	--	0.290	0.010	0.300	0.020	0.68
JUL 17...	0.30	19	388	1	1	0	7.40	0.100	7.50	0.280	1.8
AUG 21...	--	--	--	1	<1	--	6.63	0.070	6.70	0.030	1.2
27...	--	--	--	6	6	0	8.10	0.200	8.30	0.070	1.3

	NITRO- GEN,AM- MONIA + ORGANIC TOTAL	PHOS- PHORUS TOTAL	CARBON, ORGANIC TOTAL	ARSENIC DIS- SOLVED	BARIUM, DIS- SOLVED	BERYL- LIUM, DIS- SOLVED	CADMIUM DIS- SOLVED	CHROMIUM, DIS- SOLVED	COBALT, DIS- SOLVED	COPPER, DIS- SOLVED	IRON, DIS- SOLVED
DATE	(MG/L AS N)	(MG/L AS P)	(MG/L AS C)	(UG/L AS AS)	(UG/L AS BA)	(UG/L AS BE)	(UG/L AS CD)	(UG/L AS CR)	(UG/L AS CO)	(UG/L AS CU)	(UG/L AS FE)
FEB 20...	1.4	3.70	6.1	10	170	<0.5	<1.0	<5	<3	<10	8
JUN 12...	0.70	3.40	6.1	12	180	<0.5	<1.0	<5	<3	<10	11
JUL 17...	2.1	4.40	7.4	10	170	<0.5	4.0	<5	<3	<10	14
AUG 21...	1.2	2.30	6.5	--	--	--	--	--	--	--	--
27...	1.4	3.70	5.7	--	--	--	--	--	--	--	--

[illegible]

DATE _____

AME-
TRYNE
TOTAL

ATRA-
ZINE,
TOTAL
(UG/L)

CYAN-
AZINE
TOTAL
(UG/L)

METHO-
MYL
TOTAL
(UG/L)

PROMETONE
TOTAL
(UG/L)

PROMETRYNE
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 20...
JUN 12...
JUL 17...
AUG 21...
27...

SAN JACINTO RIVER BASIN

121

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.--Records good except those for estimated daily 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, 13.5 ft Oct. 29 at 1800 hours; minimum (estimated), -0.3 ft Dec. 12, 22-23.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	4.2	2.5	4.1	2.6	3.5	2.0	3.0	1.5	4.9	3.1	5.4	2.5
2	4.0	2.7	4.0	1.7	3.4	1.4	3.5	2.4	4.8	2.9	3.9	2.1
3	4.0	2.5	3.9	2.3	3.0	1.0	4.0	3.1	4.5	2.0	3.9	1.9
4	4.1	2.5	4.2	2.6	3.3	2.0	3.7	2.5	2.4	.4	4.5	2.2
5	4.3	3.0	4.4	2.7	3.4	1.8	3.1	1.7	4.2	1.7	4.6	2.8
6	4.7	2.9	4.4	2.6	3.2	2.4	3.4	2.2	4.2	2.4	5.0	3.1
7	4.4	2.1	4.0	2.7	3.4	2.3	3.4	1.7	3.8	1.8	5.0	3.1
8	3.9	2.4	4.1	2.5	2.1	e-.1	3.4	1.4	4.2	2.4	4.6	3.1
9	4.8	3.3	4.1	2.6	2.6	e.2	3.4	1.5	4.4	2.8	4.6	3.2
10	4.7	2.8	4.0	2.4	3.3	1.3	3.1	1.3	3.5	1.6	4.8	3.5
11	4.5	3.0	4.1	2.3	3.5	1.1	3.1	1.3	3.4	1.9	5.1	4.0
12	5.0	3.3	4.5	2.5	1.6	e-.3	3.0	1.0	3.6	2.5	6.4	3.9
13	4.7	3.5	4.5	2.4	2.8	.8	3.7	2.1	4.3	3.1	6.1	4.4
14	5.1	3.0	4.6	2.6	3.4	1.6	3.8	2.2	4.1	2.9	6.2	3.7
15	9.1	3.7	4.7	1.5	3.6	1.0	3.6	2.3	4.8	3.0	4.6	3.3
16	7.0	3.3	2.5	.6	2.8	1.0	3.9	2.9	4.0	2.0	4.6	2.9
17	4.8	2.1	4.3	2.6	3.2	2.0	4.0	2.7	4.0	1.9	3.8	2.6
18	3.7	.9	5.1	3.0	3.6	2.7	4.1	2.5	4.4	2.8	4.2	2.2
19	2.2	.4	4.9	3.3	3.7	1.7	5.2	2.9	3.9	2.3	3.7	2.2
20	3.2	1.6	4.6	2.6	3.0	1.9	4.1	2.0	4.4	2.7	3.9	1.8
21	3.5	1.9	3.7	2.7	3.3	2.0	3.4	1.6	7.8	3.7	4.2	2.3
22	3.6	2.1	4.0	1.8	2.6	e-.3	3.6	1.6	5.4	2.1	4.3	3.1
23	3.8	2.5	3.0	1.0	1.6	e-.3	3.6	2.0	3.0	.9	4.1	2.4
24	4.1	2.7	3.9	2.3	2.7	.7	3.7	2.1	3.3	1.8	4.2	2.7
25	4.3	2.8	4.2	2.7	2.6	.9	3.3	.4	3.9	2.5	4.0	2.5
26	4.4	3.0	3.9	2.3	2.5	.7	3.4	1.5	4.6	3.5	3.8	2.3
27	4.2	2.8	6.3	2.1	2.8	1.2	4.0	2.3	4.6	3.5	4.6	2.2
28	4.7	3.3	7.1	1.4	3.2	1.3	4.4	2.8	6.5	2.8	7.9	3.0
29	13.5	3.3	3.2	1.1	3.6	2.0	3.5	1.5	---	---	8.5	3.2
30	6.1	3.2	3.3	1.5	3.7	2.1	3.9	2.6	---	---	5.8	3.6
31	4.6	1.8	---	---	3.6	1.0	4.7	2.9	---	---	4.7	2.8
MONTH	13.5	.4	7.1	.6	3.7	-.3	5.2	.4	7.8	.4	8.5	1.8

e Estimated

SAN JACINTO RIVER BASIN

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

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	4.7	2.7	5.1	3.3	5.8	4.4	3.9	2.4	4.1	2.3	4.4	2.2
2	4.4	2.6	5.6	3.8	5.7	3.6	4.0	2.1	4.2	2.5	4.7	2.6
3	4.2	2.2	9.1	4.3	4.9	2.8	3.7	2.0	4.2	2.2	4.6	2.8
4	4.3	2.5	5.8	2.7	4.5	2.6	3.8	1.8	4.0	2.2	4.3	2.9
5	4.4	2.8	4.0	2.5	4.2	2.3	5.0	2.1	3.9	2.1	4.3	2.7
6	4.3	2.0	4.0	2.7	4.6	2.5	4.2	2.2	3.9	2.0	4.6	3.2
7	4.6	1.8	4.9	2.9	4.9	2.8	4.4	2.4	4.3	2.1	4.3	3.1
8	4.9	3.6	5.5	3.7	4.7	2.9	4.0	2.2	4.5	2.6	4.3	2.7
9	5.1	3.6	5.1	3.2	4.7	2.7	4.3	1.9	4.2	3.0	4.2	2.4
10	4.8	2.9	4.6	2.7	4.9	2.6	4.4	2.5	4.0	3.0	4.8	2.6
11	3.9	2.0	5.6	3.6	4.4	2.5	4.5	2.6	4.2	2.9	4.9	2.7
12	4.9	2.7	6.0	4.0	4.5	2.3	4.0	2.7	4.1	2.7	4.5	2.8
13	5.5	3.7	4.9	3.1	4.7	2.8	3.2	1.9	4.2	2.7	6.6	3.0
14	5.1	3.1	5.0	2.7	4.6	3.0	3.5	2.2	4.4	2.6	4.6	2.6
15	4.2	2.0	5.2	3.3	4.7	3.0	3.7	2.7	4.8	2.8	4.3	2.5
16	4.6	2.5	5.3	3.8	4.3	3.1	5.2	3.2	4.9	2.7	4.2	2.3
17	4.4	2.8	4.6	2.9	4.2	2.5	5.1	3.0	5.0	2.8	4.7	2.7
18	4.5	2.6	4.9	3.3	4.0	2.0	5.4	2.8	4.9	3.1	4.4	3.2
19	5.0	3.0	5.0	3.9	3.9	1.8	4.5	2.5	4.7	2.9	4.6	3.3
20	4.6	3.3	5.0	3.4	4.0	1.8	4.6	2.4	4.3	2.9	4.3	3.2
21	4.6	3.3	5.0	2.5	4.3	2.1	4.6	2.3	6.3	2.7	4.4	3.2
22	4.4	3.3	5.2	2.5	4.2	2.0	4.6	2.5	4.3	3.2	4.4	2.1
23	4.5	3.1	4.7	2.6	3.8	1.8	5.4	2.6	4.6	2.7	3.7	2.1
24	5.3	3.1	5.2	2.9	4.3	1.6	4.2	2.3	4.0	2.6	4.4	2.8
25	5.8	3.8	5.4	3.0	4.6	2.3	4.1	2.7	3.6	2.3	4.2	2.7
26	12.9	4.2	5.3	3.1	4.3	2.4	3.9	2.9	3.4	1.8	4.2	2.6
27	7.9	4.7	5.3	3.1	5.6	2.1	3.8	2.8	3.5	2.4	4.0	2.7
28	6.6	4.2	5.7	3.0	4.3	2.6	3.8	2.8	4.3	2.7	4.3	2.5
29	5.1	3.2	5.4	3.4	4.4	3.3	4.0	2.4	4.1	2.3	4.0	2.4
30	4.8	3.1	5.8	4.2	4.6	2.4	4.0	2.2	3.8	1.9	4.0	2.6
31	---	---	5.6	4.1	---	---	4.1	2.1	3.8	1.6	---	---
MONTH	12.9	1.8	9.1	2.5	5.8	1.6	5.4	1.8	6.3	1.6	6.6	2.1
WTR YR 1990	MAX	13.5	MIN	-0.3								

SAN JACINTO RIVER BASIN

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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. Several days the specific conductance exceeded the upper recording limit of 2000 microsiemens. Data for maximum, minimum, and mean were not computed for days that exceeded this limit. Due to tidal effects, backwater from Whiteoak Bayou, probe location, 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, >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. 15; minimum, 100 microsiemens July 23.

WATER TEMPERATURE: Maximum, 31.0°C on several days during summer months; minimum, 5.0°C Dec. 23, 24.

DISSOLVED OXYGEN: Maximum, 11.2 mg/L Oct. 23; minimum, 1.2 mg/L on several days during June, July, August and September.

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	1060	824	879	360	275	319	775	714	742	761	597	673
2	1000	853	882	497	347	424	777	747	764	812	685	749
3	1320	851	930	537	490	508	805	767	783	1040	525	713
4	1230	853	926	678	521	559	807	753	786	577	478	520
5	1650	851	1010	632	270	581	1030	794	819	601	471	536
6	1270	867	979	564	368	505	1190	799	876	489	272	364
7	1330	878	987	542	371	461	1420	860	1040	327	281	302
8	1140	860	923	584	446	516	1080	806	928	365	286	343
9	1310	873	1000	700	622	673	1030	812	882	464	361	398
10	988	845	919	745	704	728	2750	974	1380	560	442	484
11	975	844	879	766	731	746	2080	1010	1310	632	505	575
12	1330	811	1020	799	752	771	1030	837	924	706	570	626
13	1180	788	907	798	374	692	2230	848	1070	731	635	674
14	1760	820	1000	742	645	702	2010	1000	1360	764	664	703
15	2960	834	1240	725	651	687	1680	1030	1300	815	716	753
16	2920	815	1280	779	675	732	1510	928	1110	959	737	795
17	862	800	825	795	754	775	1610	1020	1240	843	747	780
18	885	793	816	800	743	774	1630	1160	1320	954	765	833
19	837	771	792	757	667	728	1550	900	1260	894	144	717
20	836	782	810	668	601	632	1280	871	978	464	202	374
21	847	777	813	689	608	641	1870	858	1250	548	317	424
22	832	793	812	722	363	616	1580	799	1010	609	508	562
23	1050	788	823	396	296	351	851	786	811	664	505	580
24	934	794	840	572	377	494	957	800	857	622	425	586
25	940	796	843	608	467	517	1330	829	1010	556	410	493
26	875	179	738	656	536	581	1130	788	974	539	408	479
27	353	152	248	705	608	651	1160	801	937	677	513	604
28	688	347	502	570	144	350	1570	887	1060	695	271	571
29	697	111	501	662	347	491	1400	729	943	413	196	276
30	262	113	202	733	583	654	705	354	510	386	313	336
31	330	141	217	---	---	---	642	492	567	537	350	413
MONTH	2960	111	824	800	144	595	2750	354	994	1040	144	556

SAN JACINTO RIVER BASIN

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

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	625	403	477	207	141	175	412	292	344	177	169	173
2	412	265	322	292	158	203	523	356	436	189	177	183
3	378	280	320	300	148	182	570	434	510	366	165	222
4	350	267	296	166	157	161	584	277	353	252	154	201
5	346	268	313	196	162	183	547	284	376	371	259	306
6	499	345	400	384	198	258	486	352	407	394	210	288
7	671	429	530	615	308	382	514	351	403	223	179	206
8	756	532	593	635	412	493	508	360	415	181	160	170
9	558	393	483	747	442	552	533	399	460	183	160	172
10	419	295	354	835	516	609	636	424	489	177	158	164
11	563	373	467	804	574	653	430	276	363	193	175	183
12	645	568	595	769	574	665	404	275	343	235	196	215
13	699	546	601	604	508	548	366	325	348	385	229	288
14	759	602	658	630	492	585	432	133	256	736	316	467
15	689	596	645	649	487	584	330	148	226	708	424	560
16	670	566	618	615	500	554	529	227	364	758	571	686
17	750	589	639	705	501	625	587	277	409	798	637	721
18	689	454	622	756	662	708	301	264	280	602	187	424
19	478	361	414	785	669	730	308	273	293	223	183	202
20	585	432	528	810	711	758	630	298	365	268	210	245
21	488	114	381	795	693	749	969	368	530	280	234	257
22	177	127	149	835	738	778	730	354	449	262	133	213
23	172	118	131	864	762	812	426	347	376	248	190	204
24	128	116	121	848	773	812	695	430	521	300	215	233
25	130	116	124	840	768	805	725	453	582	426	260	335
26	136	125	129	847	790	820	751	101	450	782	412	475
27	155	130	137	834	802	822	228	141	178	761	426	538
28	188	125	169	841	132	606	184	101	142	812	503	616
29	---	---	---	423	138	310	191	158	178	938	572	663
30	---	---	---	227	147	184	173	159	167	910	583	703
31	---	---	---	305	221	256	---	---	---	834	642	737
MONTH	759	114	401	864	132	534	969	101	367	938	133	356
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	875	614	686	633	365	471	369	264	333	787	523	658
2	897	621	690	615	483	540	397	196	343	864	664	753
3	1000	675	748	784	619	695	413	136	246	748	566	650
4	875	733	779	837	677	734	551	436	504	730	549	655
5	879	793	814	845	201	666	683	554	616	859	705	769
6	966	790	851	486	292	399	757	625	676	748	430	607
7	933	800	852	703	471	624	749	621	680	711	308	454
8	962	804	863	648	413	584	791	642	713	623	136	426
9	1190	829	890	617	333	494	879	652	759	531	196	324
10	990	786	884	669	341	472	1210	366	760	279	137	212
11	891	740	811	621	490	555	755	353	613	385	158	302
12	1000	816	860	684	547	607	819	716	758	341	166	272
13	905	767	821	690	614	647	901	750	801	357	144	269
14	890	711	797	716	400	577	931	713	813	440	271	336
15	1020	741	816	482	377	423	856	105	660	558	425	484
16	941	785	853	547	431	480	686	216	371	589	351	517
17	939	804	853	700	433	529	733	166	424	541	186	423
18	1070	808	883	664	549	598	768	618	699	585	314	432
19	1060	813	866	651	265	490	720	517	625	497	363	443
20	1070	800	862	448	249	319	756	479	582	593	405	465
21	1030	804	860	615	386	473	572	171	436	716	426	528
22	1020	788	871	586	457	509	251	139	186	607	344	480
23	985	825	880	563	100	400	409	160	303	656	368	509
24	942	834	881	420	294	349	541	236	353	796	489	648
25	935	784	863	662	443	511	622	287	448	1040	678	829
26	829	156	401	664	513	565	727	553	636	1270	1040	1210
27	484	235	337	702	563	633	799	642	705	1330	1120	1250
28	378	255	307	772	594	665	854	685	736	1380	1160	1340
29	504	310	365	801	656	725	844	719	758	1470	1080	1280
30	631	331	478	826	524	707	933	772	816	1630	1070	1290
31	---	---	---	634	178	332	933	582	812	---	---	---
MONTH	1190	156	757	845	100	541	1210	105	586	1630	136	627

SAN JACINTO RIVER BASIN

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

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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

SAN JACINTO RIVER BASIN

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

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	4.9	3.6	4.4	7.5	7.0	7.3	7.6	6.2	6.7	5.3	3.1	4.1
2	5.3	3.8	4.5	7.3	6.9	7.1	8.2	6.7	7.2	4.9	4.5	4.6
3	5.0	3.5	4.4	7.3	6.8	7.0	8.7	7.0	7.6	4.7	4.1	4.4
4	5.0	3.6	4.3	7.2	7.0	7.1	9.7	6.5	7.6	4.1	3.4	3.7
5	5.2	2.9	4.1	7.3	6.1	6.8	8.4	7.4	7.8	4.1	3.3	3.7
6	4.8	3.5	4.2	6.6	4.5	5.5	9.0	6.5	7.2	5.5	4.0	4.8
7	4.3	3.4	3.9	5.0	3.7	4.4	6.7	5.4	6.0	5.9	5.5	5.7
8	5.7	2.4	3.6	4.0	3.4	3.7	6.8	5.2	5.8	6.1	5.8	5.9
9	5.4	2.8	4.1	5.6	3.7	4.1	9.2	6.4	6.9	5.9	5.4	5.7
10	5.7	4.5	5.1	5.7	3.4	4.1	7.5	5.4	6.8	5.4	4.9	5.1
11	6.2	5.3	5.7	5.6	4.1	5.0	7.2	6.1	6.7	---	---	---
12	5.8	4.4	5.2	6.2	5.2	5.8	9.5	6.5	7.0	---	---	---
13	5.8	4.7	5.2	7.8	5.2	6.0	8.3	6.6	7.1	---	---	---
14	5.6	4.4	5.0	5.8	4.4	5.2	7.9	5.9	7.2	---	---	---
15	5.6	2.3	4.7	4.5	3.4	4.1	7.6	6.5	6.9	---	---	---
16	4.8	2.2	4.2	6.7	3.7	4.9	8.4	6.2	6.8	5.4	5.2	5.2
17	5.3	3.9	4.6	6.9	4.9	5.8	8.7	6.2	6.8	5.9	4.2	4.9
18	5.4	3.8	4.7	7.0	5.4	6.1	7.8	6.2	6.6	4.6	3.4	4.0
19	9.5	4.7	5.9	8.0	5.9	6.4	6.9	6.1	6.4	6.4	3.5	4.3
20	8.6	6.1	7.2	6.7	5.7	6.0	6.7	5.8	6.0	6.4	4.7	5.3
21	10.0	6.5	7.4	6.6	5.6	5.9	5.9	5.3	5.7	6.3	4.9	5.8
22	8.3	6.5	7.1	6.8	5.5	6.0	6.8	5.5	6.3	6.5	5.9	6.3
23	11.2	6.0	6.9	6.7	6.0	6.1	7.5	6.9	7.2	6.7	5.9	6.3
24	7.7	5.5	6.0	7.7	6.8	7.3	8.0	7.4	7.6	6.7	5.3	5.7
25	6.5	5.3	5.7	8.1	6.9	7.4	7.6	7.0	7.1	7.1	5.3	5.8
26	6.4	4.9	5.3	7.7	6.2	6.9	7.2	6.7	6.9	6.4	4.9	5.6
27	7.1	3.9	5.3	6.5	5.3	6.0	6.8	6.2	6.5	7.4	5.6	6.4
28	3.8	2.4	3.0	8.3	5.3	6.3	6.2	5.1	5.7	7.9	5.9	6.7
29	8.4	3.6	5.3	6.1	4.0	4.8	5.2	3.8	4.6	8.4	7.3	7.8
30	8.0	5.1	6.4	6.6	4.8	5.6	3.8	2.2	3.0	8.3	8.0	8.2
31	7.4	6.8	7.0	---	---	---	3.5	1.8	2.7	8.0	7.1	7.6
MONTH	11.2	2.2	5.2	8.3	3.4	5.8	9.7	1.8	6.5	8.4	3.1	5.5

SAN JACINTO RIVER BASIN

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

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	7.6	6.5	7.1	8.9	7.0	8.0	6.3	4.9	5.7	6.5	6.2	6.3
2	6.8	6.3	6.5	9.1	8.6	8.9	7.1	3.8	4.9	6.2	5.8	6.1
3	7.2	6.7	7.0	9.3	8.7	9.1	5.1	3.2	4.0	6.7	5.1	5.7
4	7.9	7.0	7.5	9.2	8.7	8.8	7.5	4.9	7.0	6.2	5.0	5.6
5	8.3	7.9	8.2	8.8	7.9	8.3	7.4	5.8	6.8	7.4	4.7	5.1
6	8.4	7.8	8.0	8.0	7.2	7.7	6.5	4.4	5.6	6.9	5.7	6.5
7	8.0	7.0	7.5	7.1	6.3	6.8	7.6	4.6	6.6	6.9	6.5	6.7
8	8.3	6.0	6.8	6.6	5.4	6.1	7.5	6.3	6.8	6.3	5.8	6.1
9	6.4	5.0	5.8	7.3	5.2	5.8	7.9	5.6	6.6	6.5	6.0	6.3
10	7.8	5.3	6.2	7.6	4.8	5.5	7.1	6.0	6.6	6.5	5.9	6.1
11	7.5	5.6	6.2	8.5	4.4	5.4	6.5	4.8	5.9	6.1	5.8	5.9
12	7.9	6.3	6.6	6.6	4.4	5.4	7.2	4.5	6.4	5.8	5.5	5.7
13	7.1	6.0	6.4	4.3	2.3	3.2	7.3	6.9	7.0	5.7	5.0	5.4
14	7.6	5.0	5.4	4.3	1.4	2.8	7.6	6.4	6.9	6.0	4.0	4.7
15	5.5	4.1	5.0	5.1	2.8	4.0	7.6	6.0	7.0	5.7	4.0	4.7
16	5.6	3.6	4.6	4.3	1.7	3.3	5.9	2.7	4.4	8.1	4.3	5.4
17	5.5	3.0	4.4	5.3	2.1	4.4	6.7	3.8	5.4	9.4	4.3	5.3
18	8.3	4.1	6.3	5.6	3.8	4.8	6.8	6.5	6.7	5.0	3.1	4.2
19	7.8	7.3	7.6	6.5	3.0	5.0	6.9	6.6	6.7	5.6	5.0	5.4
20	7.8	7.2	7.5	6.1	2.1	4.9	6.5	3.3	5.4	5.8	5.4	5.6
21	9.0	6.6	7.4	6.4	4.7	5.7	4.3	2.2	3.4	5.9	5.4	5.7
22	8.7	7.4	8.1	6.8	4.2	5.6	6.7	4.0	6.1	6.7	5.2	5.9
23	9.2	8.8	9.0	7.2	5.3	6.2	6.4	5.7	6.0	5.9	4.3	5.3
24	9.2	9.0	9.0	7.8	4.7	6.0	7.7	4.2	5.4	6.0	5.0	5.6
25	9.0	8.9	9.0	7.9	5.7	6.3	4.7	2.7	3.5	5.5	4.0	4.6
26	9.0	8.6	8.8	9.2	5.9	6.7	8.1	3.4	5.2	5.2	1.9	4.4
27	8.6	8.4	8.5	7.3	5.0	6.3	6.8	5.3	6.0	5.0	3.9	4.3
28	8.7	7.7	8.3	8.0	4.7	5.9	6.7	5.7	6.1	5.1	4.0	4.4
29	---	---	---	7.4	3.3	5.1	6.6	6.1	6.3	5.3	3.1	3.9
30	---	---	---	7.7	6.3	7.1	6.7	6.1	6.4	5.9	3.8	4.8
31	---	---	---	7.6	6.5	7.1	---	---	---	6.3	4.4	5.2
MONTH	9.2	3.0	7.1	9.3	1.4	6.0	8.1	2.2	5.9	9.4	1.9	5.4
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	7.2	1.8	3.8	1.4	1.2	1.2	5.1	2.4	3.8	3.4	1.2	1.8
2	4.1	1.8	3.2	2.1	1.3	1.5	5.1	3.4	4.5	4.7	3.2	4.0
3	5.7	2.7	3.7	5.9	1.6	2.2	4.3	2.3	3.0	4.8	2.3	3.3
4	5.8	3.3	4.6	6.0	1.9	2.8	4.3	2.4	3.0	6.0	2.2	3.8
5	7.7	4.1	5.1	5.6	1.2	3.0	4.4	2.7	3.6	6.0	3.7	4.8
6	6.7	4.5	5.3	---	---	---	4.7	3.4	4.0	5.8	1.3	3.7
7	6.9	2.8	4.9	---	---	---	5.1	3.4	4.3	4.4	1.2	2.7
8	7.6	4.8	5.7	---	---	---	6.1	3.6	4.5	6.5	2.2	4.4
9	8.6	4.7	5.6	---	---	---	6.2	2.9	4.3	5.5	1.6	3.5
10	7.7	2.0	5.0	4.3	3.0	3.5	5.8	3.5	4.5	6.3	4.4	5.3
11	4.0	1.2	2.0	3.6	2.5	3.1	4.2	1.2	2.2	6.4	5.0	5.6
12	5.4	2.4	3.9	3.3	2.2	2.8	5.0	1.3	3.8	6.0	4.9	5.4
13	5.3	1.8	3.4	6.2	1.8	3.1	6.3	3.7	4.4	7.3	3.9	5.4
14	4.6	2.2	3.0	4.8	3.7	4.5	6.8	3.6	4.5	5.5	3.6	4.4
15	4.2	1.7	2.8	5.1	4.4	4.6	5.2	1.2	2.8	4.5	2.6	3.7
16	6.2	3.7	4.5	5.7	3.4	4.7	---	---	---	4.6	2.8	4.1
17	6.6	4.3	5.0	4.9	1.9	3.7	---	---	---	6.0	1.2	3.0
18	6.6	4.0	5.1	4.7	1.9	3.2	---	---	---	5.0	1.9	3.4
19	6.3	4.7	5.4	5.1	3.2	4.6	---	---	---	3.8	1.9	2.7
20	7.5	4.0	5.6	4.8	2.7	4.2	4.2	2.3	3.0	3.7	1.2	2.4
21	6.0	3.5	4.7	4.3	2.1	3.4	6.8	2.2	3.4	2.0	1.2	1.4
22	8.5	3.3	4.5	4.6	3.2	4.3	5.6	2.8	3.8	3.2	1.2	2.1
23	5.0	3.0	3.7	6.4	3.4	4.3	6.5	2.6	3.7	---	---	---
24	4.9	1.6	3.6	3.6	1.6	2.4	5.0	3.3	4.0	---	---	---
25	6.0	3.7	4.5	3.1	2.2	2.7	5.4	3.0	3.6	---	---	---
26	3.9	1.2	1.9	4.5	2.4	3.0	4.8	3.3	3.9	---	---	---
27	2.4	1.3	2.2	5.3	2.8	3.4	5.2	3.3	3.9	---	---	---
28	2.8	1.6	2.3	4.7	2.2	3.1	6.6	3.6	4.2	---	---	---
29	2.8	1.2	1.9	3.9	1.8	2.9	5.0	2.8	3.6	---	---	---
30	4.7	1.3	2.0	7.5	2.8	4.5	7.0	3.7	4.2	---	---	---
31	---	---	---	4.7	1.3	3.2	5.4	2.0	4.0	---	---	---
MONTH	8.6	1.2	4.0	7.5	1.2	3.3	7.0	1.2	3.8	7.3	1.2	3.7

SAN JACINTO RIVER BASIN

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, -3.1 ft Mar. 6, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 7.0 ft Oct. 15 at 2230 hours; minimum, -2.4 ft Dec. 22, 23.

DAY	ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990											
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	2.1	.5	1.3	2.0	.5	1.4	1.4	-.2	.8	.8	-.6	.3
2	2.0	.6	1.4	2.0	-.4	.7	1.3	-.6	.5	1.4	-.2	.8
3	2.0	.5	1.4	1.8	.3	.9	.9	-1.1	-.1	1.9	1.0	1.4
4	2.0	.5	1.3	2.2	.5	1.5	1.1	-.1	.6	1.6	.3	.8
5	2.2	1.0	1.7	2.3	.6	1.7	1.3	-.3	.5	1.0	-.4	.4
6	2.6	.9	1.9	2.3	.5	1.5	1.1	.3	.7	1.0	-.4	.5
7	2.3	.1	1.4	2.0	.6	1.4	1.3	.1	.8	1.1	-.7	.4
8	1.8	.4	1.2	2.1	.4	1.4	.1	-2.2	-1.2	1.3	-.8	.4
9	2.7	1.0	2.0	2.0	.5	1.2	.4	-1.9	-.9	1.3	-.6	.5
10	2.7	.8	2.0	1.9	.4	1.2	1.3	-.8	.4	1.0	-.8	.3
11	2.5	.9	2.0	2.0	.2	1.2	1.5	-1.0	.2	1.0	-.8	.3
12	2.9	2.1	2.4	2.4	.4	1.5	-.4	-2.4	-1.5	.9	-1.3	.1
13	2.7	2.1	2.4	2.4	.3	1.6	.7	-1.3	-.3	1.6	.0	.6
14	3.0	1.7	2.3	2.5	.5	1.7	1.3	-.4	.6	1.6	.1	.9
15	7.0	1.9	3.2	2.6	-.5	1.2	1.5	-1.0	.4	1.5	.1	.9
16	5.1	1.4	2.7	.4	-1.5	-.7	.7	-1.0	-.4	1.8	.8	1.2
17	2.8	.0	1.2	2.2	.5	1.1	1.2	-.1	.7	1.9	.7	1.3
18	1.5	-1.1	.3	3.0	1.0	2.0	1.5	.6	1.2	2.1	.4	1.3
19	.1	-1.8	-.7	2.8	1.2	2.0	1.6	-.4	.5	2.1	.8	1.5
20	1.1	-.5	.3	2.5	.5	1.4	1.0	-.1	.4	1.7	-.2	.8
21	1.4	-.1	.8	1.6	.6	1.1	1.2	-.1	.6	1.3	-.5	.5
22	1.5	.1	1.0	1.9	-.5	1.1	.4	-2.4	-1.4	1.4	-.4	.6
23	1.7	.4	1.2	.9	-1.1	-.2	-.5	-2.4	-1.9	1.5	-.1	.8
24	2.0	.7	1.4	1.8	.2	1.1	.5	-1.5	-.4	1.6	-.1	.8
25	2.2	.7	1.6	2.1	.6	1.5	.5	-1.2	-.2	1.4	-1.7	-.4
26	2.2	1.0	1.6	1.8	.2	1.2	.3	-1.4	-.4	1.3	-.7	.2
27	2.1	.7	1.5	2.0	.1	1.1	.7	-1.0	.0	1.9	.2	1.1
28	2.6	1.3	1.9	2.6	-.7	.8	1.1	-.9	.2	1.9	.4	1.2
29	3.2	1.3	2.1	1.1	-.9	.2	1.4	-.2	.7	1.1	-.6	.1
30	3.2	.6	1.8	1.2	-.6	.4	1.5	.0	.9	1.8	.5	1.1
31	1.6	-.3	.8	---	---	---	1.5	-1.0	.3	2.5	.8	1.5
MONTH	7.0	-1.8	1.5	3.0	-1.5	1.1	1.6	-2.4	.1	2.5	-1.7	.7

SAN JACINTO RIVER BASIN

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

DAY	ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990									MAX	MIN	MEAN
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN			
FEBRUARY			MARCH			APRIL			MAY			
1	2.7	1.0	1.9	1.3	-.1	.6	2.5	.6	1.8	3.0	1.1	2.1
2	2.6	.7	1.7	1.0	-.6	.5	2.3	.6	1.5	3.5	1.7	2.6
3	2.4	-.1	1.0	1.7	-.6	.7	2.1	.2	1.2	4.0	2.3	3.2
4	.3	-1.7	-.7	2.3	-.2	1.1	2.1	.3	1.3	2.5	.6	1.6
5	2.1	-.4	.6	2.5	.5	1.6	2.3	.7	1.6	1.8	.4	1.0
6	2.2	.3	1.4	3.0	1.0	2.1	2.1	-.1	1.0	1.9	.6	1.4
7	1.6	-.3	.8	2.9	1.0	2.1	2.4	-.4	1.3	2.7	.7	2.0
8	2.0	.3	1.3	2.5	1.0	1.9	2.7	1.5	2.2	3.2	1.5	2.4
9	2.2	.8	1.6	2.5	1.0	1.9	2.9	1.4	2.2	3.0	.8	2.0
10	1.3	-.5	.4	2.7	1.4	2.1	2.6	.6	1.7	2.4	.4	1.5
11	1.3	-.1	.6	3.1	2.0	2.5	1.7	-.2	1.0	3.4	1.4	2.6
12	1.5	.4	.8	4.1	1.9	2.6	2.8	.5	1.8	3.9	1.9	3.0
13	2.2	1.0	1.5	4.1	2.4	3.0	3.4	1.6	2.5	2.7	1.0	1.9
14	1.9	.8	1.5	4.0	1.7	2.9	2.7	.9	1.6	2.9	.7	1.9
15	2.6	.9	1.9	2.5	1.3	2.0	2.2	-.1	1.2	3.1	1.2	2.3
16	2.0	-.1	.7	2.6	1.0	1.9	2.5	.5	1.5	3.1	1.8	2.3
17	1.9	-.3	.8	1.8	.5	1.2	2.3	.7	1.5	2.5	.8	1.6
18	2.2	.6	1.4	2.0	.1	1.1	2.4	.5	1.4	2.8	1.2	1.9
19	1.8	.2	1.1	1.6	.1	.8	2.8	.8	1.8	2.9	1.8	2.4
20	2.4	.6	1.5	1.8	-.3	.7	2.5	1.3	2.0	2.8	1.4	2.2
21	2.9	1.6	2.1	2.1	.3	1.2	2.5	1.2	1.8	2.9	.4	1.8
22	2.1	-.3	.8	2.2	.9	1.7	2.3	1.1	1.7	2.2	.3	1.3
23	.7	-1.7	-.6	2.1	.3	1.2	2.4	1.0	1.9	2.5	.3	1.8
24	.8	-.9	.1	2.1	.7	1.6	3.2	1.0	2.4	3.1	.7	2.2
25	1.5	-.1	.6	1.9	.4	1.3	3.7	1.7	3.0	3.3	.9	2.2
26	2.3	1.1	1.8	1.7	.3	.9	4.6	2.1	3.3	3.3	1.0	2.3
27	2.3	1.2	1.6	2.5	.1	1.4	3.6	1.6	2.7	3.2	1.0	2.3
28	2.4	.6	1.7	2.9	1.0	2.2	2.8	.4	1.8	3.4	1.0	2.2
29	---	---	---	3.4	1.1	2.3	3.0	.9	2.1	3.3	1.3	2.4
30	---	---	---	3.1	.9	2.0	2.7	.8	2.0	3.7	2.2	3.0
31	---	---	---	2.6	.5	1.7	---	---	---	3.5	2.1	2.7
MONTH	2.9	-1.7	1.1	4.1	-.6	1.6	4.6	-.4	1.8	4.0	.3	2.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	3.7	2.4	3.0	1.8	.4	1.3	2.0	.2	1.3	2.4	.1	1.4
2	3.5	1.5	2.8	1.9	.0	1.3	2.0	.4	1.2	2.4	.6	1.7
3	2.9	.7	2.1	1.6	-.2	.9	2.1	.1	1.3	2.4	.7	1.8
4	2.4	.5	1.6	1.6	-.3	1.0	1.9	.1	1.1	2.1	.8	1.6
5	2.1	.3	1.4	2.5	.0	1.2	1.8	.0	1.1	2.2	.7	1.4
6	2.5	.5	1.7	2.1	.0	1.3	1.7	-.1	1.0	2.5	1.0	1.7
7	2.8	.8	1.9	2.3	.3	1.4	2.2	.0	1.3	2.3	1.0	1.6
8	2.7	.8	1.9	1.9	.0	1.1	2.3	.5	1.6	2.2	.5	1.3
9	2.6	.7	1.8	2.1	-.2	1.1	2.0	.9	1.5	2.1	.1	1.3
10	2.8	.5	1.8	2.3	.4	1.5	2.0	1.0	1.4	2.5	.4	1.5
11	2.3	.5	1.5	2.2	.5	1.5	2.1	.8	1.4	2.3	.3	1.6
12	2.4	.3	1.5	1.9	.6	1.2	2.0	.6	1.4	2.4	.7	1.7
13	2.7	.7	1.8	1.5	-.3	.4	2.1	.6	1.6	3.2	.9	2.3
14	2.5	.9	1.7	1.4	.1	.7	2.2	.5	1.7	2.5	.5	1.8
15	2.6	1.0	1.7	1.6	.6	1.2	2.4	.5	1.8	2.1	.4	1.5
16	2.2	1.0	1.7	3.0	1.1	2.0	2.6	.5	1.9	2.1	.2	1.5
17	2.1	.4	1.5	3.0	.9	2.3	2.9	.7	2.1	2.2	.6	1.6
18	1.9	.0	1.2	3.2	.6	2.1	2.8	1.0	2.1	2.2	1.0	1.6
19	1.8	-.3	1.0	2.4	.4	1.6	2.5	.9	1.9	2.4	1.1	1.7
20	2.0	-.3	1.3	2.4	.3	1.5	2.2	.7	1.7	2.3	1.1	1.7
21	2.2	.0	1.4	2.4	.2	1.6	2.2	.6	1.5	2.3	1.2	1.8
22	2.1	-.1	1.3	2.4	.5	1.6	2.1	.7	1.5	2.3	.1	1.2
23	1.7	-.3	.9	2.2	.5	1.3	2.1	.7	1.4	1.6	.0	1.0
24	2.2	-.5	1.1	2.1	.3	1.4	1.9	.5	1.1	2.3	.7	1.5
25	2.5	.1	1.5	2.0	.7	1.4	1.5	.3	.9	2.1	.6	1.5
26	2.2	.0	1.2	1.9	.8	1.3	1.2	-.2	.6	2.1	.5	1.5
27	2.8	.0	1.1	1.7	.7	1.2	1.3	.3	.9	2.0	.6	1.3
28	2.3	.5	1.4	1.7	.7	1.3	2.1	.6	1.4	2.1	.4	1.5
29	2.3	1.2	1.6	1.9	.3	1.4	2.0	.2	1.4	1.9	.4	1.4
30	2.4	.3	1.6	1.8	-.5	1.2	1.7	-.2	1.0	1.9	.5	1.3
31	---	---	---	1.9	-.4	1.1	1.7	-.5	.9	---	---	---
MONTH	3.7	-.5	1.6	3.2	-.5	1.3	2.9	-.5	1.4	3.2	.0	1.5
WTR YR 1990	MEAN	1.3	MAX	7.0	MIN	-2.4						

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 was 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 in situ 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, 19,700 microsiemens Dec. 2; minimum, 160 microsiemens Apr. 27-29.

WATER TEMPERATURE: Maximum, 36.5°C Aug. 21; minimum, 9.5°C Dec. 23, 26.

DISSOLVED OXYGEN: Maximum, 10.9 mg/L Mar. 3; minimum, 0.8 mg/L May 30.

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	10200	5110	6680	2340	480	1100	16300	6640	10400	14400	7370	8940
2	10500	7220	8780	5800	1300	2210	19700	5620	8160	12800	7010	10500
3	11400	7410	9440	7140	2870	4100	14400	6290	9120	11600	3760	7820
4	10900	5520	8010	11400	1740	4430	12500	7320	9810	8860	2920	5370
5	9460	6120	7320	4280	1670	2840	17000	7560	11700	10300	4160	6970
6	9030	6140	7530	4230	1910	3200	14900	6650	10300	7590	2820	5370
7	10600	6510	8310	7350	1800	4000	14700	7330	11100	3170	1830	2400
8	12100	5860	8860	9760	3980	5780	17800	9840	14100	8000	1180	2490
9	10600	6230	7990	9090	5260	6490	16800	6830	12000	11000	2390	5560
10	10200	6680	8400	14000	3300	5470	12700	6740	9890	8240	2880	5300
11	9350	7020	8330	10800	6030	7880	16500	7460	12100	14000	3620	7310
12	11900	7790	9150	8870	4970	6730	18500	11900	14800	13300	4890	9130
13	9600	6470	7800	8770	5250	6760	19400	9860	15200	14300	6420	7660
14	9460	4920	7360	9170	5150	6350	19100	14100	17000	11800	5200	7410
15	16100	6680	8960	8390	5560	6860	17200	10200	14000	17200	5920	8660
16	16100	8900	11700	13000	5050	8110	17000	7560	12300	10800	5160	6770
17	9860	6560	8060	13700	9210	11400	18900	6140	11700	11500	4990	7020
18	13900	6940	10400	11700	4910	8380	17800	10000	13100	7020	2910	4760
19	13900	8670	11100	7470	5600	6370	18400	10100	14100	12700	3910	6570
20	14800	9700	12600	11600	2920	5990	16000	7660	11000	5510	1440	2440
21	12300	7620	10400	6930	3270	4580	18800	6480	11900	6800	2140	3190
22	13200	6770	10300	11900	4690	6590	19000	7290	11300	7290	2690	4450
23	11000	7140	9030	7870	2470	3820	17400	6880	11100	7890	4020	6080
24	11600	6920	8760	6710	2610	4400	13300	6560	10100	9380	4740	6730
25	11100	5920	8310	6010	1900	3550	13600	4850	6830	12400	3980	6410
26	9950	6910	8400	14100	2460	6390	15000	5190	9000	10500	5170	7330
27	8940	4440	6110	13900	5610	8210	15100	7040	9690	6590	3900	5220
28	7300	3890	5270	13800	2120	4710	14900	7220	10800	6000	3890	4840
29	5030	350	3500	8210	3050	4430	11500	3800	7680	2970	872	1530
30	1070	280	502	12400	5500	7690	15000	4770	6390	5550	916	2140
31	790	350	558	---	---	---	16300	7950	10300	8310	1760	3090
MONTH	16100	280	8000	14100	480	5630	19700	3800	11200	17200	872	5790

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SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	5200	2910	3730	1320	360	639	893	383	608	340	220	260
2	3710	1000	1940	1190	290	600	1810	487	860	350	240	276
3	3130	1250	2180	1020	480	700	1650	626	1070	360	270	300
4	4490	1520	2860	1040	480	758	1370	533	796	260	190	215
5	5510	2160	3350	680	390	545	1080	638	774	320	210	231
6	10600	2850	4940	1280	610	865	1150	441	686	390	320	340
7	7430	2090	4510	1670	900	1140	789	522	656	410	330	364
8	6040	3000	4640	2600	1130	1630	893	580	689	410	320	376
9	6660	2350	3520	4020	1250	1810	997	580	719	340	260	286
10	5840	1510	2950	2920	1470	1870	754	545	652	830	240	311
11	4170	1680	2900	3480	1520	2140	1790	603	977	6990	220	679
12	7990	3110	4720	3630	1740	2280	1530	570	901	320	230	256
13	8760	3810	5870	2430	1250	1600	1430	530	779	280	250	265
14	5510	3670	4400	2340	960	1480	1180	450	761	410	260	320
15	5660	2380	3700	2060	1000	1480	910	330	559	540	360	441
16	8040	2740	3740	3470	1140	1940	1280	350	630	860	410	489
17	5810	2510	3540	2900	1580	2170	1260	380	648	9260	420	857
18	8190	2360	3990	4440	1500	2800	1690	370	744	670	500	547
19	7140	1660	2840	3710	1560	2050	4230	480	1730	720	590	660
20	4450	1720	3250	4600	1560	2690	7750	440	1740	620	360	537
21	7650	590	3140	11200	1990	2910	5770	1510	4000	500	390	425
22	1860	540	745	5610	1880	2440	2280	549	804	440	320	399
23	1950	680	1170	5630	1070	2230	955	609	670	420	340	394
24	1230	380	865	9050	1620	3020	840	650	720	400	300	339
25	2340	360	731	8960	2320	3250	1220	680	899	430	340	368
26	810	240	420	5340	2670	3440	1030	190	716	450	400	421
27	460	260	317	5610	2440	4020	220	160	180	500	410	448
28	650	290	497	8840	417	3380	250	160	180	550	470	497
29	---	---	---	881	406	577	250	160	195	540	500	516
30	---	---	---	916	278	508	280	200	227	600	510	558
31	---	---	---	916	267	435	---	---	---	620	560	590
MONTH	10600	240	2910	11200	267	1850	7750	160	852	9260	190	418
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	650	570	617	2550	1120	1860	2400	1070	1560	10100	6640	8070
2	670	610	635	3560	1350	2220	4580	1210	2500	10200	5730	7800
3	730	630	652	4040	2510	3060	3370	1630	2440	7120	4800	5690
4	720	640	676	3630	2120	2980	4870	2070	3340	9550	5150	7590
5	740	670	688	6050	1110	2970	12400	3450	6870	14700	4210	7000
6	760	690	712	2220	640	1480	11800	6970	8630	12800	5740	8800
7	760	710	730	4650	1210	2590	12700	5310	8960	9780	6280	7780
8	760	710	737	5100	1980	3110	10400	5490	8570	10000	5600	7690
9	780	730	756	3920	1450	2700	11000	6750	8940	8170	5010	7230
10	780	730	752	4080	2280	3320	11400	6650	8800	5220	1650	3600
11	810	750	771	4930	2570	3740	9910	6580	7720	6820	1300	3100
12	790	760	777	5080	2580	3610	8010	5190	6860	2520	1200	1760
13	940	780	824	5180	3850	4250	9490	6450	7990	6790	680	3310
14	1100	860	935	4550	2870	3670	8850	6140	7120	4160	660	2090
15	3100	900	1380	5380	2550	3600	10300	6250	8660	5880	1710	2980
16	1690	1120	1420	5180	2300	3670	9040	3200	5860	9130	1530	3060
17	1680	1240	1410	5430	2830	4100	5160	2740	3740	5340	3280	4310
18	1750	940	1400	6440	3160	5170	6310	3190	4530	6960	2320	3910
19	2100	1360	1720	4080	2140	3020	10100	3060	7000	4730	2280	3490
20	2410	1260	1810	5160	2190	3280	6150	3320	4420	6060	2230	4010
21	2200	1300	1850	6130	3090	4110	10900	3370	5280	9790	3990	6310
22	2140	1150	1780	4940	1820	3390	3620	1080	1660	6550	3040	4480
23	2300	1230	1810	5190	910	2860	4210	950	2160	8270	3460	4700
24	2400	1190	1690	3550	1030	2280	3180	1620	2300	8170	4320	6210
25	2980	1560	2480	3110	2070	2530	5300	2500	3470	8420	3750	6220
26	2370	1110	1540	3440	1730	2370	7060	3930	4980	8490	5330	7180
27	2450	550	1480	4900	3190	3630	8280	3730	6350	8270	5260	6200
28	2320	910	1430	5610	2580	4170	7720	5240	6720	10500	5060	7640
29	3530	1140	1980	3340	2160	2780	10200	5730	7580	7650	4940	6010
30	2600	1470	2020	5780	2470	4080	10200	6390	8150	9540	4050	7120
31	---	---	---	2670	1480	2060	11000	6730	8860	---	---	---
MONTH	3530	550	1250	6440	640	3180	12700	950	5870	14700	660	5510

SAN JACINTO RIVER BASIN

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

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	26.5	25.5	26.0	21.5	20.5	21.0	19.5	18.0	18.5	15.5	13.0	14.0
2	27.5	24.5	25.5	22.0	21.0	21.5	19.5	17.0	18.0	15.0	13.0	13.5
3	26.5	24.5	25.5	23.0	20.5	21.5	19.0	15.5	17.0	16.5	13.0	15.0
4	26.0	25.0	25.5	23.0	20.5	21.5	18.5	15.0	17.0	16.5	14.0	15.5
5	26.5	24.5	25.5	24.0	20.5	22.5	18.5	16.0	17.5	16.5	14.0	15.0
6	27.5	24.5	25.5	24.5	22.0	23.0	20.5	17.5	19.0	15.5	13.5	14.5
7	26.0	24.5	25.5	25.0	22.5	24.0	19.5	17.0	18.5	14.0	13.0	13.5
8	25.5	23.5	24.5	25.5	23.0	24.5	17.0	15.5	16.5	14.5	12.5	13.5
9	26.0	24.0	24.5	24.5	22.0	23.5	16.5	14.5	16.0	15.0	13.0	14.0
10	28.0	24.5	26.0	25.0	22.5	23.5	17.5	15.5	16.5	17.0	14.0	15.0
11	27.5	25.5	26.5	24.5	22.5	23.5	19.0	15.5	16.5	16.0	13.0	15.5
12	28.0	25.5	26.5	24.5	22.5	23.5	15.5	13.5	14.5	16.0	13.0	15.0
13	28.5	26.0	27.0	24.5	22.5	23.5	15.5	13.0	14.5	16.0	13.5	14.5
14	28.0	26.0	27.0	24.5	23.0	24.0	16.5	14.0	15.0	18.0	14.0	15.5
15	27.0	26.5	27.0	24.5	22.0	23.5	17.0	13.5	15.5	18.0	13.0	16.5
16	28.0	26.5	27.0	22.5	20.5	21.5	15.0	12.5	13.5	19.0	16.5	17.5
17	27.5	25.5	26.5	22.0	19.5	21.0	15.0	12.0	13.0	19.5	16.0	18.5
18	26.0	23.5	25.0	22.0	20.0	21.0	14.0	12.5	13.0	20.0	18.5	19.5
19	24.5	23.0	24.0	21.5	19.5	20.5	14.5	12.0	13.0	21.0	18.0	19.5
20	26.0	20.0	24.0	21.5	19.5	20.5	14.0	11.5	12.5	20.0	18.5	19.5
21	25.5	22.5	24.0	21.0	20.0	21.0	13.5	11.5	13.0	19.0	16.0	18.0
22	25.5	22.5	24.5	21.5	19.5	20.5	13.0	10.0	10.5	20.0	16.5	18.0
23	25.5	23.5	24.5	20.5	18.5	19.5	11.5	9.5	10.0	19.0	17.0	18.0
24	26.5	23.5	25.0	20.0	18.0	19.0	11.5	10.0	11.0	19.0	17.5	18.0
25	25.0	24.0	24.5	20.5	19.5	20.0	11.0	10.0	10.5	18.0	14.5	16.5
26	25.5	24.0	24.5	21.0	19.5	20.0	13.0	9.5	11.0	17.5	16.0	16.5
27	25.0	23.5	24.0	22.0	19.5	21.0	13.0	11.5	12.5	18.5	15.5	17.5
28	25.5	24.0	24.5	21.5	19.5	20.5	14.5	12.0	13.0	19.0	17.0	18.0
29	26.0	21.5	24.0	20.5	18.0	19.5	16.0	13.0	15.0	17.0	15.5	16.0
30	22.5	21.5	22.0	19.5	18.0	18.5	17.0	12.5	16.0	18.0	15.5	16.0
31	22.0	21.0	21.5	---	---	---	16.0	13.5	14.5	18.0	16.5	17.0
MONTH	28.5	20.0	25.0	25.5	18.0	21.5	20.5	9.5	14.5	21.0	12.5	16.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	19.5	17.5	18.5	19.0	16.5	18.0	21.5	19.5	20.5	26.0	24.0	25.0
2	19.5	17.5	18.5	16.5	14.0	15.0	21.5	20.0	20.5	25.0	24.0	25.0
3	20.0	18.0	19.0	16.0	14.5	15.0	22.5	20.0	21.0	25.5	24.5	25.0
4	18.5	17.5	18.0	16.5	14.5	15.5	23.0	20.5	22.0	24.0	23.0	23.5
5	17.5	16.5	17.0	17.5	15.5	16.5	23.5	22.0	22.5	23.5	22.5	23.0
6	19.0	17.0	17.5	18.5	17.0	17.5	22.5	21.0	22.0	25.0	22.0	24.0
7	19.0	16.5	18.0	19.5	18.0	19.0	21.0	20.0	20.5	24.0	22.0	23.0
8	20.0	18.0	18.5	21.0	19.0	20.0	21.0	20.5	21.0	23.5	22.0	22.5
9	20.0	18.0	19.0	22.5	19.5	21.0	21.5	20.5	21.0	24.5	22.5	23.0
10	20.0	18.5	19.0	22.5	20.5	21.5	22.0	21.0	21.5	24.5	22.0	23.5
11	20.0	18.5	19.0	22.5	21.0	21.5	23.0	20.5	21.5	24.5	22.0	23.5
12	19.5	17.5	18.5	22.0	21.0	21.5	22.5	21.0	21.5	24.5	23.5	24.0
13	21.0	18.0	19.5	22.5	21.0	22.0	22.0	21.0	21.5	27.5	24.0	25.5
14	21.0	19.5	20.0	22.5	21.5	22.0	22.0	20.5	21.5	26.0	25.0	25.5
15	23.0	20.0	21.5	22.5	21.5	22.0	23.0	19.5	21.0	27.0	25.5	26.5
16	21.5	19.0	19.5	22.5	20.5	21.5	22.5	20.5	21.5	27.5	25.5	26.5
17	20.0	17.0	18.0	22.5	20.0	21.5	24.5	21.5	22.5	28.5	27.0	27.5
18	19.5	17.5	18.5	22.0	20.5	21.5	23.0	22.0	22.5	28.5	27.0	27.5
19	19.0	17.0	18.0	22.5	21.0	21.5	23.5	22.5	23.0	28.5	27.0	27.5
20	18.0	17.5	18.0	22.0	20.0	21.0	25.0	23.0	24.0	28.0	27.0	27.5
21	19.0	16.0	17.5	23.0	20.5	21.5	25.5	23.0	24.0	29.0	27.5	28.0
22	16.5	16.0	16.0	23.0	20.0	21.5	26.5	24.0	25.0	29.0	28.0	28.0
23	16.5	15.5	16.0	22.5	21.0	21.5	26.5	24.0	25.0	28.5	27.0	28.0
24	16.0	15.0	15.5	22.5	21.5	22.0	25.5	24.5	25.0	30.0	27.0	28.0
25	17.0	15.0	16.0	23.0	21.0	22.0	25.5	25.0	25.0	29.5	28.0	28.5
26	17.5	16.5	16.5	22.5	20.5	21.5	25.5	21.0	24.5	30.0	28.0	28.5
27	17.5	16.5	17.0	22.0	20.0	21.0	22.0	20.5	21.0	29.5	28.5	29.0
28	19.0	17.5	18.0	21.5	20.0	21.0	23.5	21.5	22.5	30.0	29.0	29.0
29	---	---	---	20.5	20.0	20.0	24.0	21.0	22.5	28.5	28.5	28.5
30	---	---	---	20.0	19.0	19.5	25.0	21.0	23.0	29.0	28.0	28.5
31	---	---	---	21.5	18.0	19.5	---	---	---	30.0	28.5	29.0
MONTH	23.0	15.0	18.0	23.0	14.0	20.0	26.5	19.5	22.5	30.0	22.0	26.0

SAN JACINTO RIVER BASIN

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

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	30.0	28.5	29.5	32.5	29.0	30.5	32.0	28.5	29.5	31.5	30.0	30.5
2	30.5	29.0	29.5	32.5	29.5	30.5	30.5	28.5	29.5	31.5	29.5	30.5
3	30.5	29.0	30.0	33.0	30.0	31.0	31.5	28.5	30.0	31.5	29.5	30.5
4	30.5	29.5	30.0	33.0	30.0	31.0	32.5	29.0	30.5	32.0	29.5	30.5
5	31.0	29.5	30.0	30.5	29.5	30.0	32.0	29.5	30.5	31.5	29.5	30.5
6	30.5	30.0	30.5	30.5	28.5	29.5	32.0	29.0	30.5	32.0	29.5	31.0
7	31.0	30.0	30.5	31.0	28.5	29.5	31.5	29.5	30.5	32.5	30.0	31.0
8	31.0	30.0	30.5	31.5	29.0	30.0	31.5	29.0	30.0	31.5	30.0	30.5
9	32.0	30.0	31.0	32.0	29.5	31.0	31.5	29.5	30.5	30.5	29.0	30.0
10	31.0	30.0	30.5	31.5	29.5	30.5	31.5	30.0	30.5	29.0	26.5	28.0
11	32.0	30.0	31.0	32.0	30.0	31.0	32.0	30.0	30.5	28.0	26.5	27.5
12	31.5	30.5	31.0	31.0	30.0	30.5	32.0	29.5	30.5	27.0	26.5	27.0
13	31.5	30.5	31.0	31.0	29.5	30.5	32.0	29.5	30.5	28.0	26.0	27.0
14	32.5	30.5	31.0	31.0	29.0	30.0	32.0	29.5	30.5	28.5	26.5	27.5
15	32.0	30.5	31.0	31.0	28.5	29.5	32.5	30.0	30.5	29.0	27.5	28.0
16	32.5	30.5	31.5	29.5	28.0	28.5	31.5	29.0	30.0	29.5	27.5	28.5
17	33.0	30.5	31.5	30.0	28.0	29.0	31.5	28.5	30.0	30.0	28.0	29.0
18	33.5	30.5	32.0	30.5	28.5	29.5	31.5	29.0	30.0	30.0	28.5	29.5
19	33.0	31.0	31.5	30.0	28.0	29.0	31.5	29.5	30.5	31.0	28.5	29.5
20	33.0	30.0	31.5	29.0	28.0	28.5	32.5	29.5	30.5	30.5	29.0	30.0
21	33.5	31.0	31.5	31.0	28.0	29.5	36.5	30.0	32.0	31.0	29.5	30.0
22	32.5	31.0	31.5	31.0	28.0	29.5	34.0	27.5	33.0	30.5	29.5	30.0
23	33.0	31.0	31.5	30.0	28.5	29.0	33.0	28.0	30.5	29.5	28.5	29.0
24	32.5	31.0	31.5	30.5	28.0	29.0	31.0	28.5	29.5	29.5	26.5	28.0
25	33.0	31.0	32.0	31.0	28.5	29.5	32.0	29.0	30.0	29.5	26.5	28.0
26	32.0	30.5	31.0	32.0	29.0	30.0	32.5	29.5	31.0	30.0	27.5	28.5
27	31.5	27.5	30.0	32.0	30.0	30.5	35.5	30.0	32.5	30.0	28.0	29.0
28	30.0	28.0	29.0	31.5	30.0	30.5	32.0	30.5	31.0	30.5	28.0	29.0
29	30.5	28.5	29.5	32.5	30.0	31.0	32.0	30.0	31.0	30.5	28.0	29.0
30	31.0	29.0	29.5	32.0	30.0	31.0	33.0	30.0	31.0	30.0	28.0	29.0
31	---	---	---	31.0	29.0	30.0	32.5	30.0	31.0	---	---	---
MONTH	33.5	27.5	30.5	33.0	28.0	30.0	36.5	27.5	30.5	32.5	26.0	29.0

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	6.5	3.0	5.2	5.8	4.1	5.0	5.6	2.9	4.1	7.8	6.0	6.7
2	5.3	3.5	4.4	4.8	2.3	4.2	5.5	2.5	4.1	8.6	6.5	7.8
3	5.5	3.3	4.3	5.1	2.2	4.2	6.5	2.6	4.3	9.8	8.5	9.2
4	6.1	3.2	4.8	5.3	2.1	4.2	6.1	3.1	4.8	9.2	7.5	8.1
5	5.8	3.4	4.8	6.0	3.8	5.0	6.2	2.6	4.8	8.9	6.4	7.8
6	7.1	3.9	5.2	5.4	4.3	4.9	6.2	4.3	5.4	9.7	7.2	8.4
7	5.1	2.8	4.2	4.9	3.3	4.1	5.9	4.8	5.4	---	---	---
8	5.3	1.5	3.6	4.1	2.7	3.5	5.7	4.5	5.0	---	---	---
9	5.8	2.3	4.3	4.8	2.7	3.5	6.8	4.7	5.8	---	---	---
10	4.7	2.7	3.8	4.4	2.5	3.8	7.4	5.5	6.5	---	---	---
11	5.0	2.4	3.6	4.1	2.0	2.9	6.9	4.8	5.7	---	---	---
12	4.0	1.5	3.2	4.2	2.8	3.5	6.3	5.6	6.0	---	---	---
13	4.5	2.9	3.7	4.7	2.4	3.7	7.0	5.9	6.5	---	---	---
14	5.0	3.6	4.3	4.4	2.7	3.8	7.2	5.6	6.2	---	---	---
15	5.0	1.5	3.9	4.6	2.7	3.5	6.9	5.9	6.5	---	---	---
16	5.0	1.0	3.1	4.1	2.1	3.2	7.5	6.4	7.0	7.4	5.2	6.7
17	5.4	3.7	4.3	4.0	1.6	3.2	8.1	6.8	7.5	6.7	5.2	6.2
18	4.9	1.9	3.4	4.6	3.2	4.0	8.0	6.8	7.4	6.8	5.7	6.3
19	4.4	1.9	3.2	4.3	2.8	3.6	7.6	6.7	7.1	7.0	3.5	5.8
20	4.2	1.5	2.7	5.2	2.3	3.9	8.4	7.1	7.7	5.5	3.4	4.6
21	5.4	3.0	3.9	4.7	3.1	4.1	8.4	6.9	7.7	5.8	4.8	5.5
22	5.3	2.1	3.8	5.1	3.0	3.9	8.1	7.2	7.7	---	---	---
23	5.5	3.0	4.2	5.3	3.1	4.3	9.4	8.1	8.8	---	---	---
24	5.2	2.9	4.4	5.6	3.9	4.4	9.8	8.6	9.3	---	---	---
25	5.5	3.1	4.7	5.5	4.3	4.8	9.9	8.6	9.6	---	---	---
26	5.1	3.8	4.5	5.4	3.7	4.4	9.9	7.0	9.1	---	---	---
27	5.1	3.1	4.1	5.6	3.9	4.7	9.7	7.7	9.1	---	---	---
28	5.3	3.9	4.7	5.6	3.6	4.8	9.4	7.9	8.7	---	---	---
29	6.8	2.7	4.8	5.7	3.9	4.8	9.3	7.9	8.6	---	---	---
30	6.7	4.6	5.7	5.0	3.1	4.0	8.8	5.9	7.7	7.2	5.2	6.8
31	5.9	4.9	5.4	---	---	---	7.1	5.1	5.8	7.0	4.5	6.4
MONTH	7.1	1.0	4.2	6.0	1.6	4.1	9.9	2.5	6.8	9.8	3.4	6.9

SAN JACINTO RIVER BASIN

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

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.8	4.8	6.1	8.4	7.2	7.8	7.7	5.5	6.3	4.4	3.7	4.0
2	6.2	5.2	5.7	9.6	7.8	8.7	6.8	3.1	5.4	4.1	3.2	3.6
3	6.3	5.1	5.6	10.9	9.0	9.6	5.7	2.9	4.3	4.0	3.1	3.5
4	6.2	4.9	5.6	10.3	8.7	9.5	4.6	1.5	2.7	4.2	3.5	3.9
5	6.5	4.9	6.1	9.7	9.0	9.3	5.3	3.0	3.9	3.7	2.2	2.9
6	7.0	4.9	6.0	9.3	8.3	8.9	5.5	2.7	4.5	4.2	2.7	3.2
7	7.1	4.5	5.8	8.6	7.5	8.1	5.9	2.4	4.4	6.1	3.0	3.4
8	6.9	5.1	5.8	7.8	6.8	7.5	3.5	2.5	3.0	5.9	3.1	3.9
9	6.5	5.0	6.1	7.4	6.6	7.0	4.7	1.8	3.6	5.8	4.3	4.8
10	6.3	4.9	5.4	7.1	6.2	6.7	6.2	3.3	4.6	6.1	4.1	5.2
11	7.3	4.9	5.8	6.7	5.5	6.3	6.3	4.5	5.5	5.8	4.8	5.3
12	6.6	4.9	6.0	7.4	5.5	6.4	6.1	4.9	5.5	5.4	4.8	5.2
13	7.0	4.8	6.2	6.6	4.8	5.6	5.7	4.9	5.2	5.1	3.8	4.5
14	7.7	5.9	6.6	6.2	4.8	5.3	6.9	5.2	5.8	4.3	3.1	3.8
15	8.0	6.0	7.2	4.7	3.2	3.9	7.9	6.3	6.8	4.9	3.0	4.0
16	7.7	4.5	6.1	4.1	2.8	3.3	7.8	5.8	6.7	4.2	2.7	3.4
17	8.3	4.9	6.8	3.9	2.4	3.1	9.0	5.3	6.6	4.4	1.7	3.0
18	8.0	5.4	6.0	4.2	1.8	2.6	6.1	3.2	4.7	4.7	2.3	2.9
19	8.2	4.8	6.1	4.6	1.9	3.3	5.0	3.8	4.5	4.7	3.1	4.0
20	8.1	5.9	6.7	4.2	2.1	2.8	5.9	4.5	5.2	4.0	2.5	3.1
21	8.8	5.3	7.6	4.1	2.3	3.3	5.4	4.3	4.8	4.1	2.5	3.3
22	8.9	7.3	8.7	4.7	1.6	3.7	5.0	2.1	3.9	4.7	2.5	3.3
23	8.4	7.0	7.5	6.0	2.6	4.6	3.7	1.7	2.7	3.4	2.1	2.8
24	9.0	7.9	8.5	5.9	3.4	4.8	4.1	2.3	2.8	3.5	.9	2.2
25	9.0	7.6	8.5	6.0	3.9	5.2	4.3	3.1	3.7	4.4	1.8	2.5
26	10.7	8.5	9.4	7.7	4.2	5.8	5.1	1.6	4.0	4.6	2.0	3.1
27	9.7	8.9	9.3	7.3	2.8	5.3	5.9	4.1	5.2	3.6	2.0	2.6
28	9.2	8.1	8.6	7.1	3.2	4.8	5.4	3.6	4.4	4.5	1.8	2.7
29	---	---	---	7.0	4.8	5.9	4.8	3.6	4.1	3.4	1.2	1.9
30	---	---	---	7.6	5.0	6.6	4.4	3.5	4.0	4.4	.8	2.7
31	---	---	---	7.9	6.9	7.4	---	---	---	4.3	2.3	3.3
MONTH	10.7	4.5	6.8	10.9	1.6	5.9	9.0	1.5	4.6	6.1	.8	3.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	4.4	1.7	3.2	3.1	1.1	1.8	3.9	1.5	2.2	---	---	---
2	4.6	2.2	3.3	3.9	1.5	2.2	2.9	1.1	1.5	---	---	---
3	4.9	2.3	3.4	4.3	1.1	2.8	3.5	1.5	2.4	---	---	---
4	5.1	1.7	3.0	6.1	2.7	4.3	6.1	1.6	3.0	---	---	---
5	4.2	1.5	2.7	5.9	1.9	3.5	3.5	1.5	2.6	---	---	---
6	4.6	1.6	2.6	3.8	1.4	2.4	3.6	1.5	2.3	---	---	---
7	4.4	2.0	3.2	4.1	1.7	2.7	3.5	1.5	2.7	---	---	---
8	4.1	1.9	3.1	3.9	1.7	2.6	4.5	1.3	2.7	---	---	---
9	4.4	2.4	3.5	6.9	1.6	3.6	3.7	1.7	2.6	---	---	---
10	3.9	1.4	2.7	7.8	2.4	4.4	3.9	1.4	2.6	---	---	---
11	4.6	1.2	3.4	6.2	3.0	3.9	4.3	1.3	2.2	---	---	---
12	4.8	2.0	3.4	4.5	2.2	3.3	4.3	1.1	2.1	---	---	---
13	5.0	2.6	3.6	3.6	1.4	2.6	3.7	1.1	2.0	---	---	---
14	6.3	2.8	4.4	5.4	1.9	3.1	4.6	1.5	2.5	---	---	---
15	4.5	1.0	3.5	5.3	2.4	3.8	3.7	1.2	1.9	---	---	---
16	5.3	3.4	4.1	4.3	2.9	3.7	---	---	---	---	---	---
17	6.7	3.3	4.5	3.9	2.3	3.3	2.7	1.1	1.6	---	---	---
18	6.1	3.3	4.8	3.6	1.8	2.8	1.7	1.1	1.4	---	---	---
19	---	---	---	3.8	1.4	2.1	2.4	1.2	1.5	---	---	---
20	6.3	2.2	3.3	2.7	1.1	1.6	1.6	1.2	1.4	---	---	---
21	6.2	2.4	3.8	3.2	1.1	2.0	3.7	1.5	2.6	---	---	---
22	5.6	2.3	3.8	2.3	1.3	1.8	2.7	1.6	2.0	---	---	---
23	5.0	1.3	3.3	3.2	1.2	2.0	---	---	---	---	---	---
24	4.9	2.4	3.7	3.2	1.9	2.6	---	---	---	---	---	---
25	6.3	2.1	4.0	2.9	1.6	2.4	---	---	---	---	---	---
26	5.1	1.7	3.9	3.6	2.0	2.5	---	---	---	---	---	---
27	4.6	2.6	3.0	4.3	1.5	2.7	---	---	---	---	---	---
28	3.3	1.8	2.4	4.4	1.2	2.3	---	---	---	---	---	---
29	2.4	1.3	1.9	5.6	1.4	3.6	---	---	---	---	---	---
30	2.3	1.4	1.8	6.8	2.6	3.9	---	---	---	---	---	---
31	---	---	---	2.9	1.2	1.9	---	---	---	---	---	---
MONTH	6.7	1.0	3.4	7.8	1.1	2.8	6.1	1.1	2.2	---	---	---

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.--Records fair except those for estimated daily discharges, which are poor. There no known diversions above station. Low flow is mostly sewage effluent from Houston suburbs. Gage-height telemeter at station.

AVERAGE DISCHARGE.--54 years, 139 ft³/s (100,700 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 29	1600	10,200	39.73	May 17	1730	9,710	39.30
Apr. 26	1600	*10,400	*39.94				

Minimum daily discharge, 94 ft³/s Nov. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	126	96	112	230	1610	240	129	128	143	131	142
2	103	129	98	124	259	601	220	118	109	111	185	139
3	106	94	99	268	135	194	142	1270	107	99	127	114
4	106	96	99	162	122	136	129	666	110	98	105	139
5	101	240	97	192	104	122	124	173	106	338	100	116
6	99	276	98	781	105	113	271	130	105	181	105	170
7	104	139	96	518	99	102	132	120	103	115	100	113
8	103	100	97	151	185	114	118	269	103	155	100	120
9	101	97	101	116	344	116	116	141	102	110	99	394
10	98	99	101	108	359	108	173	115	100	100	105	474
11	99	e100	101	102	119	115	193	112	113	100	102	594
12	96	e100	96	102	114	242	116	108	136	150	100	150
13	98	101	98	100	98	206	113	110	117	112	100	603
14	97	102	97	100	103	164	652	113	111	98	105	198
15	108	101	97	106	220	180	201	115	108	98	115	160
16	111	97	98	99	122	120	127	117	100	130	115	139
17	105	95	95	103	105	117	119	1630	101	128	104	209
18	96	137	100	101	278	110	113	624	105	258	110	186
19	101	229	108	570	159	118	115	169	102	152	111	127
20	104	158	105	345	116	104	116	130	106	117	107	131
21	98	109	101	121	1280	102	115	120	100	110	315	114
22	101	407	103	101	409	108	114	249	105	112	368	105
23	105	167	108	97	155	103	111	208	105	256	181	100
24	107	99	122	217	120	104	115	118	112	124	136	99
25	105	98	119	157	106	105	112	116	189	100	108	98
26	750	101	123	99	109	106	2380	105	386	98	107	98
27	132	116	117	99	106	104	1170	103	194	98	110	98
28	95	871	122	738	975	393	1610	105	123	98	130	97
29	1480	115	229	458	---	1170	239	107	110	96	117	96
30	1830	97	188	135	---	1150	154	106	175	100	106	96
31	355	---	120	101	---	309	---	106	---	297	100	---
TOTAL	7195	4796	3429	6583	6636	8446	9650	7802	3771	4282	4004	5419
MEAN	232	160	111	212	237	272	322	252	126	138	129	181
MAX	1830	871	229	781	1280	1610	2380	1630	386	338	368	603
MIN	95	94	95	97	98	102	111	103	100	96	99	96
AC-FT	14270	9510	6800	13060	13160	16750	19140	15480	7480	8490	7940	10750

CAL YR 1989	TOTAL	98789	MEAN	271	MAX	9660	MIN	91	AC-FT	195900
WTR YR 1990	TOTAL	72013	MEAN	197	MAX	2380	MIN	94	AC-FT	142800

e Estimated

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to September 1985, October 1986 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 21...	1058	258	614	7.8	19.0	25	20	8.8	95	5.0	3.8	56
JUN 12...	1435	118	840	8.8	31.0	11	32	14.2	190	2.8	2.5	290
JUL 17...	1345	125	764	8.7	29.0	23	7.6	16.0	206	2.1	1.7	150
AUG 21...	1340	109	790	8.8	33.0	12	15	16.2	223	1.7	1.0	20
27...	1334	115	800	8.7	31.5	12	8.2	16.0	216	0.9	0.6	K2

[illegible]

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 21...	0.30	17	339	65	47	18	6.03	0.070	6.10	0.770	1.8
JUN 12...	--	24	--	<1	<1	--	5.61	0.090	5.70	0.070	6.1
JUL 17...	0.40	23	420	30	5	25	6.93	0.070	7.00	0.090	1.4
AUG 21...	--	--	--	18	2	16	7.72	0.080	7.80	0.160	1.2
27...	--	--	--	12	<1	--	5.32	0.080	5.40	1.30	1.4

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[illegible]

SAN JACINTO RIVER BASIN

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 19.1 acre-ft of ground water was used for cooling purposes then released to the Bayou about 200 ft upstream from this station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--25 years (water years 1965-78, 1980-90), 29.6 ft³/s (21,450 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 (ft ³ /s)	Elevation (ft)	Date	Time	Discharge (ft ³ /s)	Elevation (ft)
Apr. 26	1930	*875	*42.59				

Minimum daily discharge, 7.1 ft³/s Nov. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	11	7.7	9.6	17	318	17	12	e9.0	21	9.7	9.5
2	9.4	10	7.7	8.6	19	143	34	9.6	e8.8	13	12	10
3	9.9	9.0	8.0	32	17	26	16	93	e8.8	11	12	11
4	9.6	9.2	8.3	17	15	15	11	90	e9.2	9.9	9.6	9.8
5	8.7	11	8.2	15	14	11	10	17	e11	11	9.0	9.6
6	9.0	19	8.3	142	14	9.6	42	11	e14	21	11	9.6
7	10	11	10	100	15	11	14	10	e12	17	11	9.3
8	10	8.6	11	19	20	9.9	10	e33	e11	10	9.6	9.8
9	10	8.6	9.3	13	24	11	9.4	e20	e9.8	9.6	9.5	39
10	9.4	8.4	8.9	12	27	10	9.5	e13	e9.8	10	9.7	33
11	9.2	8.7	8.9	12	13	14	9.1	e11	e9.6	9.5	9.8	24
12	8.5	9.0	9.4	13	13	37	8.6	e19	e9.6	16	9.6	13
13	8.5	8.2	9.7	13	13	13	8.6	e12	e13	11	9.7	113
14	9.9	7.5	9.3	12	14	21	57	e9.6	e12	9.0	11	29
15	9.3	7.7	8.3	12	26	13	18	e11	e9.8	8.8	11	15
16	8.4	7.1	8.3	11	14	12	10	e12	e9.6	11	13	11
17	7.9	7.4	8.2	11	12	13	9.4	e90	e9.2	12	10	12
18	8.0	9.3	8.9	11	17	10	9.1	e80	e10	13	9.9	14
19	7.8	14	8.1	43	14	9.8	9.1	e17	e11	11	11	15
20	8.5	15	7.6	90	13	10	9.7	e13	e10	9.7	12	14
21	9.3	9.8	7.4	20	32	11	11	e12	9.6	9.8	13	12
22	8.4	36	9.2	15	22	9.8	10	e16	10	12	16	11
23	9.6	20	11	17	11	9.8	11	e22	11	18	15	10
24	8.7	11	12	32	11	11	11	e15	9.8	15	11	9.8
25	8.8	11	12	19	10	9.0	11	e14	11	11	11	11
26	11	11	11	12	11	7.9	275	e13	18	9.2	9.5	9.9
27	9.9	11	11	12	10	7.8	199	e12	13	9.1	9.3	9.4
28	11	150	9.8	152	85	36	287	e10	13	9.5	9.4	9.0
29	161	14	15	114	---	257	30	e9.8	11	8.9	11	9.0
30	116	9.9	22	20	---	269	14	e9.8	27	9.1	10	9.3
31	45	---	13	19	---	41	---	e9.2	---	8.9	9.2	---
TOTAL	580.0	483.4	307.5	1028.2	523	1386.6	1180.5	716.6	350.0	365.0	334.5	511.0
MEAN	18.7	16.1	9.92	33.2	18.7	44.7	39.3	23.1	11.7	11.8	10.8	17.0
MAX	161	150	22	152	85	318	287	93	27	21	16	113
MIN	7.8	7.1	7.4	8.6	10	7.8	8.6	9.2	8.8	8.8	9.0	9.0
AC-FT	1150	959	610	2040	1040	2750	2340	1420	694	724	663	1010

CAL YR 1989 TOTAL 11845.8 MEAN 32.5 MAX 2260 MIN 7.1 AC-FT 23500
WTR YR 1990 TOTAL 7766.3 MEAN 21.3 MAX 318 MIN 7.1 AC-FT 15400

e Estimated

SAN JACINTO RIVER BASIN

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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.--No estimated daily discharges. Records good. 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.--38 years, 88.6 ft³/s (64,190 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 26	2330	*1,680	*18.84				
Minimum daily discharge, 31 ft ³ /s Oct. 5.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	55	49	49	133	752	105	53	41	88	47	57
2	34	51	48	46	128	605	127	45	39	49	43	55
3	37	42	47	90	210	138	146	139	37	45	44	48
4	38	39	49	85	74	72	73	533	37	43	41	50
5	31	38	49	60	55	59	62	102	48	45	44	51
6	37	62	48	309	53	54	96	53	49	49	50	54
7	32	49	49	328	54	55	67	44	42	61	45	51
8	34	43	50	84	70	53	45	109	41	41	46	68
9	34	41	40	52	105	50	43	77	39	41	44	73
10	37	39	38	45	111	48	51	54	37	38	43	206
11	35	37	39	44	57	46	46	40	39	43	45	216
12	36	34	39	55	52	71	42	36	65	67	35	90
13	36	38	40	53	51	120	40	44	46	57	38	351
14	36	40	39	49	42	55	146	37	43	40	48	263
15	36	38	38	50	82	74	94	41	39	38	75	64
16	40	36	37	53	53	50	44	43	39	44	55	57
17	35	38	37	56	37	43	43	296	35	55	53	54
18	35	53	40	54	50	40	40	241	36	44	51	60
19	34	63	52	69	52	38	39	63	38	46	57	65
20	34	73	52	219	44	39	35	52	38	56	52	60
21	36	45	51	69	119	39	36	47	40	46	48	58
22	36	97	41	56	112	40	35	63	39	41	68	51
23	35	94	42	58	58	39	36	77	40	128	56	54
24	36	51	44	149	49	37	40	53	39	80	61	55
25	37	49	42	81	46	36	38	50	37	45	46	55
26	39	48	45	47	45	36	462	47	56	42	41	54
27	47	50	53	43	44	37	742	45	158	41	40	54
28	37	269	48	286	241	107	846	46	117	40	44	54
29	493	77	49	486	---	373	161	46	48	39	46	54
30	439	53	84	84	---	681	70	48	51	63	47	52
31	238	---	55	56	---	324	---	43	---	59	82	---
TOTAL	2178	1742	1434	3265	2227	4211	3850	2667	1453	1614	1535	2534
MEAN	70.3	58.1	46.3	105	79.5	136	128	86.0	48.4	52.1	49.5	84.5
MAX	493	269	84	486	241	752	846	533	158	128	82	351
MIN	31	34	37	43	37	36	35	36	35	38	35	48
AC-FT	4320	3460	2840	6480	4420	8350	7640	5290	2880	3200	3040	5030
CAL YR 1989	TOTAL	41036	MEAN	112	MAX	4570	MIN	31	AC-FT	81390		
WTR YR 1990	TOTAL	28710	MEAN	78.7	MAX	846	MIN	31	AC-FT	56950		

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE	SPE- CIFIC	PH	TEMPER-ATURE	COLOR	TUR- BID-ITY	OXYGEN,	OXYGEN,	BOD	COLI-	
		INST. CUBIC FEET PER SECOND	CON- DUCT-ANCE (US/CM)	(STAND- ARD UNITS)	WATER (DEG C)	(PLAT- INUM- COBALT UNITS)	(NTU)	DIS- SOLVED (MG/L)	(PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	OXYGEN DEMAND, BIOCHEM CARBON, 5 DAY (MG/L)	FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
FEB 21...	0845	79	1070	7.8	19.0	25	24	7.2	77	5.7	4.1	7300
JUN 12...	1308	56	958	7.9	29.0	25	35	3.2	41	7.2	4.9	7300
JUL 17...	1230	51	1300	7.6	26.0	28	7.3	6.0	74	3.0	2.0	12000
AUG 21...	1430	42	965	7.9	31.0	14	18	5.1	68	2.5	2.0	750
27...	1238	40	834	8.0	31.5	17	14	5.4	73	2.0	1.6	3200

[illegible]

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, 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 21...	0.70	16	618	50	38	12	6.90	0.500	7.40	0.490	1.7
JUN 12...	--	16	--	28	5	23	5.33	0.370	5.70	0.800	0.20
JUL 17...	0.50	16	760	46	11	35	9.56	0.140	9.70	0.320	1.4
AUG 21...	--	--	--	27	1	26	7.15	0.150	7.30	0.240	1.1
27...	--	--	--	30	7	23	7.32	0.180	7.50	0.230	1.2

[illegible][illegible]

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

SAN JACINTO RIVER BASIN

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, 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, are contain additional storm runoff data for this station. Stage and rain-fall 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, 10.54 ft Oct. 15 at 2330 hours; minimum, 3.72 ft Dec. 3.

DAY	GAGE HEIGHT, FEET, WATER YEAR		OCTOBER 1989		TO SEPTEMBER 1990							
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	5.40	3.93	5.33	3.94	4.77	3.82	4.18	3.81	6.00	4.25	7.28	4.30
2	5.39	4.02	5.29	3.91	4.64	3.83	4.58	3.82	5.89	4.10	5.35	4.27
3	5.25	3.90	5.06	3.85	4.22	3.72	5.38	4.40	6.38	4.05	4.95	3.99
4	5.38	3.91	5.50	3.91	4.48	3.80	4.95	3.98	4.15	3.92	5.52	3.87
5	5.67	4.38	5.62	3.93	4.62	3.81	4.33	3.85	5.33	3.83	5.74	3.95
6	6.08	4.33	5.63	4.00	4.41	3.83	5.42	3.80	5.42	3.87	6.22	4.27
7	5.66	3.86	5.25	3.95	4.63	3.82	5.02	4.22	4.89	3.83	6.14	4.23
8	5.12	3.86	5.36	3.96	4.25	3.84	4.55	3.93	5.56	3.94	5.77	4.17
9	6.04	4.00	5.29	3.96	3.84	3.76	4.60	3.85	5.48	4.12	5.77	4.30
10	6.05	4.26	5.18	3.89	4.55	3.76	4.27	3.83	5.27	4.01	5.92	4.57
11	5.87	4.15	5.31	3.86	4.75	3.80	4.30	3.83	4.54	3.90	6.35	5.15
12	6.21	5.09	5.72	3.88	3.82	3.75	4.22	3.82	4.80	3.84	7.28	5.03
13	6.03	4.75	5.73	3.83	4.04	3.76	4.80	3.78	5.37	4.20	7.39	5.60
14	6.39	4.29	5.84	3.85	4.62	3.81	4.93	3.86	5.12	4.06	7.26	4.90
15	10.54	5.06	5.88	3.81	4.73	3.80	4.77	3.84	5.92	4.27	5.74	4.59
16	10.05	4.63	3.91	3.74	3.95	3.77	5.00	4.42	5.33	3.87	5.86	4.17
17	6.28	3.83	5.55	3.86	4.44	3.86	5.12	4.02	5.13	3.79	4.88	3.87
18	4.95	3.82	6.31	4.25	4.83	4.02	5.18	3.80	5.57	3.98	5.30	3.77
19	3.82	3.76	6.10	4.55	4.92	3.85	5.47	4.01	5.02	3.90	4.83	3.77
20	4.44	3.80	5.82	3.92	4.33	3.77	5.48	4.11	5.63	3.93	5.03	3.75
21	4.70	3.80	4.93	3.98	4.57	3.80	4.53	3.85	6.36	4.98	5.35	3.80
22	4.82	3.84	5.48	4.17	3.87	3.78	4.60	3.79	5.40	3.93	5.53	4.17
23	4.96	3.86	4.22	3.90	3.83	3.75	4.76	3.80	4.08	3.83	5.32	3.79
24	5.28	3.89	5.16	3.83	3.89	3.83	5.67	4.07	4.15	3.82	5.36	3.97
25	5.52	4.03	5.38	3.92	3.89	3.83	4.90	3.89	4.72	3.83	5.18	3.83
26	5.68	4.32	5.08	3.81	3.85	3.81	4.58	3.84	5.56	4.27	5.02	3.79
27	5.56	4.09	5.25	3.83	4.06	3.80	5.12	3.86	5.49	4.38	5.08	3.78
28	6.02	4.68	6.52	3.99	4.38	3.83	8.37	4.57	8.12	3.90	6.24	4.23
29	10.46	4.60	4.32	3.84	4.68	3.84	8.04	4.11	---	---	7.56	4.38
30	6.61	4.24	4.52	3.82	4.78	3.86	5.02	3.97	---	---	6.73	4.40
31	4.99	3.95	---	---	4.80	3.83	5.68	4.07	---	---	5.95	4.15
MONTH	10.54	3.76	6.52	3.74	4.92	3.72	8.37	3.78	8.12	3.79	7.56	3.75

SAN JACINTO RIVER BASIN

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08075650 BERRY BAYOU AT FOREST OAKS STREET, HOUSTON, TX--Continued

DAY	GAGE HEIGHT, FEET, WATER YEAR		OCTOBER 1989		TO SEPTEMBER 1990							
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	5.88	4.01	6.26	4.34	6.96	5.66	5.17	3.93	5.33	3.89	5.88	4.10
2	5.70	3.98	6.77	4.90	6.84	4.95	5.20	3.86	5.39	3.92	5.83	4.00
3	5.42	4.02	9.22	5.43	6.25	4.30	4.38	3.83	5.40	3.91	5.78	4.12
4	5.47	3.92	8.00	4.35	5.73	3.95	5.01	3.82	5.25	3.86	5.58	4.12
5	5.61	4.07	5.10	4.08	5.38	3.83	5.95	3.82	5.20	3.84	5.63	4.01
6	5.48	3.97	5.20	4.01	5.82	3.86	5.45	3.83	5.13	4.06	5.88	4.37
7	5.80	3.88	6.00	4.07	6.08	4.04	5.62	3.86	5.56	3.88	5.70	4.30
8	6.03	4.77	6.97	4.71	6.03	4.10	5.18	3.80	5.72	3.97	5.61	3.94
9	6.18	4.90	6.35	4.75	5.90	4.00	5.44	3.80	5.46	4.22	5.47	3.90
10	5.93	4.30	5.72	4.00	6.16	3.90	5.63	3.82	5.39	4.32	5.99	4.18
11	5.08	3.92	6.74	4.60	5.58	3.83	5.65	3.83	5.53	4.13	5.88	4.39
12	6.05	3.92	7.22	5.23	5.60	3.78	5.15	3.93	5.37	3.98	5.75	4.11
13	6.65	4.85	6.03	4.34	5.88	3.95	5.08	3.91	5.47	4.02	6.69	4.20
14	6.07	4.32	6.18	4.00	5.78	4.21	4.73	3.87	5.67	3.95	5.90	4.08
15	5.42	3.90	6.46	4.47	5.91	4.24	5.00	3.88	6.20	3.95	9.58	4.00
16	5.82	3.88	6.46	5.00	5.45	4.27	6.44	4.04	6.14	4.08	6.05	4.52
17	5.55	3.98	5.83	4.10	5.40	3.85	6.37	4.40	6.31	4.08	5.65	4.88
18	5.75	3.86	6.17	4.56	5.15	3.79	6.65	4.10	6.18	4.31	5.50	4.36
19	6.15	4.10	6.20	5.22	5.11	3.79	5.76	3.92	5.86	4.22	5.76	4.45
20	5.81	4.52	6.02	4.65	5.23	3.79	5.76	3.86	5.62	4.11	5.65	4.45
21	5.79	4.42	6.19	3.95	5.42	3.78	5.78	3.82	5.82	4.02	5.63	4.44
22	5.61	4.46	6.83	3.90	5.39	3.79	5.79	3.97	5.57	3.99	5.59	3.91
23	5.72	4.32	5.84	4.48	5.05	3.75	5.77	3.88	5.46	4.33	4.95	3.91
24	6.44	4.30	6.43	4.10	5.49	3.74	5.39	3.91	5.22	3.96	5.65	4.10
25	6.98	4.98	6.68	4.26	5.80	3.76	5.73	4.00	4.84	3.92	5.46	3.99
26	7.16	3.95	6.58	4.28	5.46	3.78	5.20	4.14	4.60	3.88	5.38	3.96
27	6.95	5.18	6.57	4.36	6.33	3.79	5.11	4.02	4.70	3.88	5.23	3.98
28	6.35	4.45	6.83	4.32	5.57	3.93	5.08	4.08	5.55	3.92	5.48	3.90
29	6.22	4.18	6.64	4.57	5.61	4.53	5.28	3.88	5.39	3.88	5.24	3.90
30	6.00	4.07	7.00	5.45	5.72	4.12	5.18	3.87	5.08	3.88	5.27	3.93
31	---	---	6.83	5.37	---	---	5.22	3.91	5.32	3.88	---	---
MONTH	7.16	3.86	9.22	3.90	6.96	3.74	6.65	3.80	6.31	3.84	9.58	3.90
CAL YR 1989	MAX	20.15	MIN	---								
WTR YR 1990	MAX	10.54	MIN	3.72								

SAN JACINTO RIVER BASIN

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.--No estimated daily discharges. Records fair. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--19 years, 15.8 ft³/s (11,450 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 29	1645	*2,170	*14.66	No other peak greater than base discharge.			
Minimum daily discharge, 0.01 ft ³ /s July 9, 10.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.56	4.9	1.0	1.5	8.6	116	2.5	.98	1.4	5.1	.58	2.6
2	.55	5.0	.87	1.4	6.0	26	2.6	1.0	1.5	1.1	.27	3.7
3	.75	1.5	.84	33	38	3.3	1.6	112	1.6	.51	.10	.88
4	.73	1.0	.82	13	3.1	2.0	1.5	47	2.0	.47	.10	.47
5	.81	.96	1.0	5.9	1.6	1.5	1.3	5.0	2.7	1.2	.32	.35
6	.84	1.4	1.3	84	1.4	1.3	7.0	1.7	2.4	.17	.77	.27
7	.94	1.6	4.4	46	1.5	1.4	1.9	1.4	1.8	.03	.34	.26
8	.92	12	7.1	4.8	29	1.8	1.7	65	1.9	.02	.27	.44
9	.87	2.4	1.4	2.3	20	1.9	1.7	15	1.8	.01	.18	.40
10	.87	1.3	1.1	1.7	19	1.8	3.4	3.4	1.5	.01	.81	24
11	.87	1.2	1.4	1.4	3.0	2.0	2.7	1.8	1.2	.02	1.3	31
12	.87	1.1	1.2	1.2	2.0	20	2.2	1.7	1.1	.03	.55	5.0
13	.88	1.1	1.2	1.2	1.4	13	2.2	1.5	1.3	1.1	.50	43
14	1.4	1.2	.98	1.2	1.3	11	29	1.6	1.0	.11	.72	4.1
15	13	1.3	1.1	1.2	13	6.9	3.2	2.2	1.2	.09	31	121
16	12	1.4	1.5	1.3	2.6	1.7	1.3	2.6	.95	.87	2.2	14
17	1.6	1.5	1.1	3.6	1.5	.92	1.3	2.7	.95	.66	.25	4.5
18	1.0	5.1	1.2	3.3	9.3	.95	1.1	2.4	1.1	8.9	.08	3.6
19	1.0	17	1.8	18	3.0	1.0	1.2	2.1	1.0	1.0	.61	8.8
20	1.0	7.4	1.4	21	1.4	1.2	1.3	1.6	.96	.33	.19	3.3
21	.91	2.0	1.1	2.8	42	1.2	1.5	1.4	1.0	2.7	.27	3.1
22	.94	50	1.5	1.6	7.4	1.3	1.5	60	1.4	.74	1.8	3.5
23	1.2	4.7	2.8	1.3	2.3	1.3	1.5	14	1.2	2.7	21	3.9
24	1.9	1.7	2.8	84	1.4	1.3	1.6	2.2	1.1	1.6	2.9	3.3
25	1.5	1.3	2.4	8.0	1.3	1.3	1.9	1.0	1.9	.43	.40	2.1
26	1.4	1.3	2.6	2.2	.87	1.5	123	.81	8.1	.38	.14	2.0
27	1.3	1.3	2.1	1.3	.79	1.5	37	.78	5.6	.43	.12	1.8
28	.79	50	1.5	136	73	18	22	.88	1.4	.40	.14	1.7
29	283	2.4	1.3	31	---	54	2.8	1.3	.64	.47	.16	1.7
30	44	1.3	1.2	4.3	---	45	1.1	1.3	2.6	17	.21	2.0
31	6.8	---	4.0	2.1	---	6.2	---	1.3	---	3.0	8.1	---
TOTAL	385.20	186.36	56.01	521.6	295.76	348.27	264.6	357.65	54.30	51.58	76.38	296.77
MEAN	12.4	6.21	1.81	16.8	10.6	11.2	8.82	11.5	1.81	1.66	2.46	9.89
MAX	283	50	7.1	136	73	116	123	112	8.1	17	31	121
MIN	.55	.96	.82	1.2	.79	.92	1.1	.78	.64	.01	.08	.26
AC-FT	764	370	111	1030	587	691	525	709	108	102	151	589
CAL YR 1989	TOTAL	6360.22	MEAN	17.4	MAX	1610	MIN	.18	AC-FT	12620		
WTR YR 1990	TOTAL	2894.48	MEAN	7.93	MAX	283	MIN	.01	AC-FT	5740		

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 of 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.--26 years, 23.3 ft³/s (16,880 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 (ft ³ /s)	Elevation (ft)	Date	Time	Discharge (ft ³ /s)	Elevation (ft)
Apr. 26	2000	*850	*29.86				

Minimum daily discharge, 2.3 ft³/s Aug. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	7.5	5.3	5.8	43	184	22	8.4	18	6.2	6.4	11
2	3.5	7.6	5.1	5.6	26	76	34	7.5	4.7	4.1	3.9	8.6
3	3.3	4.8	4.9	26	28	23	24	120	3.9	3.6	4.1	4.9
4	3.6	4.5	4.7	12	14	15	13	116	3.4	4.4	3.4	3.2
5	3.5	26	4.4	9.5	9.9	12	10	19	3.2	209	2.9	2.6
6	3.2	26	4.4	66	8.9	10	21	11	3.7	28	2.7	2.5
7	3.3	7.2	4.4	43	8.4	11	10	8.8	3.8	13	2.6	2.4
8	3.0	5.3	4.3	13	14	9.5	8.1	21	3.7	6.3	2.4	2.4
9	2.9	4.5	4.2	7.7	24	8.7	7.6	12	3.4	4.7	2.3	3.1
10	2.8	4.1	4.2	6.4	31	8.3	7.7	7.8	3.4	4.4	11	11
11	2.7	3.9	4.2	7.0	11	7.8	37	6.5	3.2	4.9	19	7.3
12	2.7	3.9	4.1	6.2	8.9	21	12	6.5	2.8	3.9	5.0	4.4
13	2.7	3.8	3.8	5.1	8.4	22	8.9	6.4	2.9	3.8	3.4	128
14	2.7	5.8	4.1	5.0	8.3	14	145	5.9	2.9	3.8	3.1	47
15	3.0	4.4	4.1	5.1	17	15	37	6.1	2.9	3.2	8.0	27
16	3.9	3.5	4.1	5.2	8.6	9.1	17	5.4	2.6	3.2	3.9	24
17	2.9	4.0	4.3	5.1	7.2	8.1	10	5.3	e2.6	3.7	3.6	14
18	2.8	5.7	4.6	5.3	22	7.5	8.3	5.2	e2.5	4.2	3.3	21
19	2.5	8.1	5.3	13	12	6.9	7.5	5.2	2.5	3.7	2.8	8.1
20	2.4	6.1	5.0	35	8.6	6.5	7.0	4.7	2.5	6.8	2.7	5.5
21	2.7	4.7	4.5	8.5	60	6.5	6.7	4.6	e2.6	6.6	13	4.9
22	2.8	19	4.5	6.5	28	6.5	6.3	6.3	2.9	4.0	25	4.7
23	3.1	8.9	4.6	6.0	12	6.6	6.1	5.9	2.7	49	15	4.3
24	3.0	4.8	6.2	27	9.0	6.3	6.0	4.5	2.4	19	6.0	3.9
25	3.1	4.2	6.2	11	8.0	6.1	5.7	4.2	2.5	6.0	3.4	3.8
26	4.2	4.0	8.8	7.0	7.6	5.8	253	3.8	2.9	4.1	2.5	3.7
27	3.1	4.1	7.4	5.9	7.4	5.4	163	4.1	71	3.6	2.4	3.7
28	2.7	105	7.2	60	91	197	89	4.1	45	3.2	2.5	3.6
29	69	9.1	6.3	53	---	190	19	3.8	12	3.0	2.5	3.6
30	69	6.1	9.8	12	---	171	11	3.6	12	29	2.4	3.6
31	25	---	9.1	8.8	---	43	---	5.4	---	29	4.2	---
TOTAL	248.6	316.6	164.1	492.7	542.2	1119.6	1082.2	439.0	234.6	481.4	175.4	377.8
MEAN	8.02	10.6	5.29	15.9	19.4	36.1	36.1	14.2	7.82	15.5	5.66	12.6
MAX	69	105	9.8	66	91	197	253	120	71	209	25	128
MIN	2.4	3.5	3.8	5.0	7.2	5.4	5.7	3.6	2.4	3.0	2.3	2.4
AC-FT	493	628	325	977	1080	2220	2150	871	465	955	348	749

CAL YR 1989	TOTAL	9428.7	MEAN	25.8	MAX	1720	MIN	2.4	AC-FT	18700
WTR YR 1990	TOTAL	5674.2	MEAN	15.5	MAX	253	MIN	2.3	AC-FT	11250

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 1989 TO SEPTEMBER 1990

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 20...	1035	8.4	734	7.9	15.0	15	2.4	8.8	87	3.3	3.0	650
JUN 12...	0920	2.8	895	8.3	28.0	13	58	6.6	84	3.2	3.0	580
JUL 17...	1014	3.6	799	7.4	26.0	27	2.5	7.4	91	5.4	4.7	3300
AUG 21...	1100	2.5	665	8.1	29.0	23	2.5	9.4	121	3.8	3.5	520
27...	0934	2.4	656	7.7	29.5	25	2.8	5.0	65	3.3	2.9	2000

[illegible]

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 20...	0.60	14	404	11	11	0	3.60	0.200	3.80	0.360	1.0
JUN 12...	--	16	--	39	4	35	5.14	0.160	5.30	0.260	0.14
JUL 17...	0.60	15	453	8	6	2	2.89	0.110	3.00	0.330	2.9
AUG 21...	--	--	--	11	7	4	4.65	0.150	4.80	0.070	1.2
27...	--	--	--	4	4	0	5.32	0.280	5.60	0.410	1.2

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WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

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.--No estimated daily discharges. Records good. 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 2,540 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.--24 years (water years 1966-80, 1982-1990), 37.0 ft³/s (26,810 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 (ft ³ /s)	Elevation (ft)	Date	Time	Discharge (ft ³ /s)	Elevation (ft)
Feb. 21	1530	*2,930	*79.89	June 25	1930	*1,930	78.11

Minimum daily discharge, 10 ft³/s Oct. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	25	13	16	92	141	25	17	20	88	32	84
2	10	17	13	16	107	91	17	16	16	20	24	20
3	11	14	13	41	42	23	15	321	16	17	16	16
4	11	12	13	32	27	16	16	282	15	16	14	14
5	11	14	13	29	18	14	15	48	16	29	14	14
6	12	15	13	114	16	13	36	22	15	33	13	50
7	12	13	13	83	15	16	24	18	16	19	13	19
8	13	13	13	25	22	15	16	30	16	16	14	25
9	12	13	13	17	34	14	14	27	16	15	14	38
10	11	12	13	15	49	14	92	17	15	15	18	80
11	11	11	13	15	19	15	54	15	15	38	18	
12	11	12	13	14	16	18	17	35	16	23	15	69
13	11	12	13	14	15	25	15	20	17	21	14	26
14	11	13	13	16	16	17	155	17	18	19	14	22
15	12	13	14	16	18	21	48	15	19	15	15	15
16	11	12	14	16	17	14	18	15	17	17	15	14
17	11	12	14	21	14	13	15	23	17	21	16	67
18	11	12	18	16	51	14	14	18	18	19	15	94
19	11	23	21	34	33	14	14	15	17	16	14	33
20	11	23	18	71	18	14	15	16	16	16	14	37
21	11	15	18	19	700	14	14	17	17	20	18	15
22	11	35	18	15	169	14	15	16	17	31	20	14
23	11	33	19	14	30	14	14	20	18	78	13	13
24	11	17	25	30	18	14	14	18	20	46	19	13
25	11	15	27	29	15	14	14	16	372	20	15	13
26	12	15	25	15	13	14	502	15	186	15	13	12
27	12	14	21	14	13	13	348	15	30	14	14	12
28	11	13	19	59	37	235	353	15	18	14	14	12
29	136	13	34	61	---	452	61	16	16	16	14	12
30	126	13	46	20	---	322	23	15	241	206	13	12
31	58	---	20	17	---	84	---	16	---	195	43	---
TOTAL	635	474	553	914	1634	1712	1993	1166	1266	1128	518	913
MEAN	20.5	15.8	17.8	29.5	58.4	55.2	66.4	37.6	42.2	36.4	16.7	30.4
MAX	136	35	46	114	700	452	502	321	372	206	43	94
MIN	10	11	13	14	13	13	14	15	15	14	13	12
AC-FT	1260	940	1100	1810	3240	3400	3950	2310	2510	2240	1030	1810

CAL YR 1989	TOTAL	24891.8	MEAN	68.2	MAX	6320	MIN	9.8	AC-FT	49370
WTR YR 1990	TOTAL	12906	MEAN	35.4	MAX	700	MIN	10	AC-FT	25600

SAN JACINTO RIVER BASIN

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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.--38 years, 66.9 ft³/s (48,470 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 26	2000	*2,800	*57.21	No other peak greater than base discharge.			

Minimum daily discharge, 19 ft³/s Dec. 2, 9, and 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	44	20	25	159	450	70	42	91	e150	49	114
2	25	32	19	27	202	246	50	38	e29	42	42	34
3	27	27	20	58	101	58	38	454	e26	32	28	29
4	26	25	22	78	55	38	34	638	e27	28	25	25
5	26	57	21	43	35	34	32	e100	e26	42	23	27
6	25	64	20	232	31	31	69	e60	e26	55	22	64
7	27	33	21	182	29	34	49	e40	e27	36	20	37
8	28	25	20	47	42	33	34	e50	e24	27	20	30
9	25	23	19	31	81	31	31	e40	e23	24	21	51
10	24	21	20	26	109	30	148	e30	e23	23	24	91
11	23	20	21	26	38	31	131	e28	e24	27	27	95
12	24	21	19	25	30	42	40	e70	e24	44	23	115
13	27	40	20	23	27	54	32	e40	e26	27	21	93
14	25	28	22	25	28	48	294	e35	e26	28	21	55
15	27	24	21	26	41	52	108	e32	e26	22	24	29
16	26	22	21	25	30	33	42	e30	e24	24	23	26
17	25	20	22	35	24	29	36	e45	e24	29	24	40
18	25	26	29	32	105	29	32	35	e26	35	22	130
19	29	37	29	142	62	31	31	31	e24	29	22	37
20	25	38	25	209	32	28	32	31	e24	27	20	63
21	24	26	25	37	695	28	31	32	e24	25	22	29
22	25	84	28	28	331	28	31	e32	e26	38	33	24
23	27	54	30	26	59	27	31	e40	e30	162	23	22
24	30	27	38	69	35	28	31	e32	e70	77	26	22
25	28	22	38	61	29	28	31	e30	288	31	26	23
26	25	22	37	29	28	27	915	e30	572	24	22	24
27	25	24	33	24	27	26	822	e30	e91	22	24	27
28	25	28	29	97	224	599	599	30	e40	22	22	25
29	313	20	46	137	---	665	127	29	e30	22	23	22
30	232	20	108	40	---	820	54	28	e400	156	22	20
31	121	---	36	31	---	214	---	29	---	176	27	---
TOTAL	1388	954	879	1896	2689	3852	4005	2211	2141	1506	771	1423
MEAN	44.8	31.8	28.4	61.2	96.0	124	133	71.3	71.4	48.6	24.9	47.4
MAX	313	84	108	232	695	820	915	638	572	176	49	130
MIN	23	20	19	23	24	26	31	28	23	22	20	20
AC-FT	2750	1890	1740	3760	5330	7640	7940	4390	4250	2990	1530	2820

CAL YR 1989	TOTAL	44935	MEAN	123	MAX	10700	MIN	14	AC-FT	89130
WTR YR 1990	TOTAL	23715	MEAN	65.0	MAX	915	MIN	19	AC-FT	47040

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 1989 TO SEPTEMBER 1990

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 20...	0838	32	528	8.3	14.5	20	25	11.4	111	3.7	2.6	1200
JUN 12...	0750	24	917	8.4	28.0	11	21	5.5	70	2.5	2.1	800
JUL 17...	0850	30	777	7.9	26.0	35	15	7.0	86	3.1	2.3	5100
AUG 21...	0950	23	835	8.3	29.5	25	20	5.6	73	2.6	2.1	720
27...	0815	25	832	8.4	30.0	25	18	6.0	79	2.6	2.0	720

[illegible]

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											
20...	0.20	15	280	44	31	13	4.19	0.110	4.30	0.160	0.94
JUN											
12...	--	29	--	1	<1	--	3.32	0.180	3.50	0.180	0.32
JUL											
17...	0.30	24	433	45	12	33	4.72	0.180	4.90	0.250	1.5
AUG											
21...	--	--	--	45	8	37	4.97	0.130	5.10	0.130	1.1
27...	--	--	--	27	<1	--	4.17	0.130	4.30	0.140	1.3

[illegible][illegible]

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08076000 GREENS BAYOU NEAR HOUSTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

SAN JACINTO RIVER BASIN

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.

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, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Elevation (ft)	Date	Time	Discharge (ft ³ /s)	Elevation (ft)
Mar. 28	1800	945	45.88	Apr. 26	2200	*1,540	*49.69
Mar. 29	2200	978	46.11				

Minimum daily discharge, 3.0 ft³/s Sept. 28, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	8.5	6.8	7.9	72	278	22	10	9.6	43	8.7	9.6
2	7.1	7.6	6.8	8.3	32	92	30	9.1	7.1	8.7	8.4	11
3	7.0	7.4	6.8	13	46	16	13	179	5.2	6.8	6.1	13
4	6.9	7.1	6.8	18	13	12	9.5	241	5.0	6.3	5.4	9.9
5	6.8	32	6.9	11	8.6	10	7.8	23	5.5	57	4.9	7.2
6	6.9	37	6.8	90	7.6	9.1	14	13	4.6	25	4.4	19
7	7.1	18	7.0	60	6.2	9.1	9.6	10	4.8	14	4.1	9.4
8	6.8	10	6.7	12	7.2	9.8	7.7	17	5.5	11	3.7	6.2
9	6.7	8.2	6.9	8.7	21	7.9	8.3	15	5.7	8.5	3.4	6.5
10	6.6	7.2	6.7	7.7	18	8.0	127	8.7	5.0	6.5	4.8	13
11	6.9	7.3	7.1	8.2	8.0	8.0	60	8.0	4.6	5.3	7.8	23
12	6.8	7.3	6.8	7.5	8.0	11	11	9.3	5.5	4.9	5.1	13
13	6.8	8.5	6.6	7.0	7.2	19	8.5	9.2	4.9	8.5	4.5	32
14	7.0	10	6.9	7.0	6.9	11	96	8.7	4.6	4.5	4.6	22
15	7.2	9.0	6.9	7.0	11	17	19	8.4	4.3	4.4	4.5	10
16	7.4	7.9	e6.8	7.2	7.0	8.2	11	8.4	4.6	5.7	4.8	6.8
17	7.2	7.4	e7.4	10	6.1	6.5	9.0	6.8	e4.6	6.0	5.1	5.8
18	6.9	8.0	e7.4	8.7	39	6.5	7.7	6.7	e4.6	5.3	5.1	6.0
19	6.9	9.7	e7.2	93	11	6.8	6.2	6.6	e4.5	5.2	5.2	6.3
20	6.8	11	e7.0	142	7.2	6.7	5.5	6.5	e4.4	7.6	5.0	4.0
21	6.8	8.8	6.7	10	112	6.0	4.7	6.8	e4.3	11	5.4	4.0
22	7.0	32	7.1	8.8	30	6.9	4.7	7.2	e4.3	6.9	6.1	4.3
23	7.1	17	8.6	7.4	11	7.3	4.7	5.9	e4.3	134	5.6	4.6
24	7.4	8.5	11	50	9.0	6.4	5.0	6.3	e4.3	62	4.9	3.2
25	7.5	7.6	10	17	8.1	5.7	5.0	6.2	e20	12	4.6	3.1
26	7.4	7.3	8.7	7.5	8.5	5.7	409	5.9	e70	7.7	4.6	3.1
27	7.6	7.7	8.0	6.7	7.9	6.1	558	6.5	e15	5.8	4.3	3.2
28	7.9	7.7	7.7	57	102	360	56	9.2	6.3	5.4	4.2	3.0
29	33	6.7	11	65	---	338	17	7.8	6.6	5.4	4.4	3.0
30	38	6.6	13	10	---	447	13	5.7	25	6.7	4.3	3.1
31	17	---	11	7.8	---	93	---	5.2	---	12	4.9	---
TOTAL	285.5	339.0	241.1	781.4	631.5	1834.7	1559.9	677.1	264.7	513.1	158.9	268.3
MEAN	9.21	11.3	7.78	25.2	22.6	59.2	52.0	21.8	8.82	16.6	5.13	8.94
MAX	38	37	13	142	112	447	558	241	70	134	8.7	32
MIN	6.6	6.6	6.6	6.7	6.1	5.7	4.7	5.2	4.3	4.4	3.4	3.0
AC-FT	566	672	478	1550	1250	3640	3090	1340	525	1020	315	532

CAL YR 1989	TOTAL	22396.1	MEAN	61.4	MAX	5510	MIN	4.7	AC-FT	44420
WTR YR 1990	TOTAL	7555.2	MEAN	20.7	MAX	558	MIN	3.0	AC-FT	14990

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.--No estimated daily discharges. Records good. Stage discharge relationship is affected by seasonal vegetal growth during most years. There are 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.--38 years, 29.6 ft³/s (21,450 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 26	2000	*1,120	*55.44				

Minimum daily discharge, 4.7 ft³/s Oct. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	9.5	8.4	8.8	54	242	41	12	48	13	11	12
2	6.5	7.3	7.9	9.8	43	116	28	11	9.8	8.1	29	8.7
3	5.8	6.6	8.1	20	32	32	21	147	7.7	7.3	10	6.9
4	5.9	6.4	8.2	23	19	20	17	177	7.3	6.9	6.5	6.7
5	5.7	18	8.2	16	12	17	16	29	7.3	88	6.9	8.6
6	6.0	24	8.2	68	11	15	32	14	7.0	14	6.2	13
7	5.8	11	8.0	55	10	15	19	10	7.0	7.5	5.8	6.2
8	5.6	7.7	7.5	16	16	14	16	22	7.5	7.6	5.7	7.1
9	6.0	6.8	7.4	11	35	13	17	16	7.1	7.5	5.7	25
10	5.2	6.4	7.9	9.4	28	12	58	15	7.2	6.9	5.5	14
11	5.8	6.3	8.3	9.3	13	12	45	9.8	7.4	6.8	6.0	42
12	6.2	7.0	7.1	10	11	17	19	11	8.5	10	5.0	31
13	5.8	12	7.6	9.2	10	24	15	12	10	13	6.8	51
14	5.7	8.5	7.8	9.7	10	17	101	12	11	5.9	7.1	24
15	6.1	6.8	7.8	9.8	21	26	31	12	10	5.7	8.6	7.4
16	7.3	6.2	7.6	10	12	13	17	11	7.1	6.4	8.0	7.1
17	6.1	6.4	9.2	11	8.4	11	14	12	7.1	6.5	8.5	15
18	5.0	8.2	9.3	11	38	11	11	12	7.0	15	7.9	41
19	4.7	9.5	8.6	78	21	11	9.4	12	6.7	7.6	9.7	13
20	4.9	9.0	7.9	70	12	10	9.4	13	6.7	7.2	21	13
21	5.4	7.6	7.3	14	135	10	9.7	11	6.4	7.5	7.5	8.6
22	5.8	31	8.4	11	71	10	9.4	9.3	6.1	6.9	8.8	6.7
23	5.9	14	9.4	9.4	19	10	9.9	10	6.2	83	6.9	6.8
24	6.0	8.1	11	46	14	10	9.7	9.7	6.3	33	6.5	6.2
25	5.5	7.3	12	24	12	11	9.8	9.3	27	9.0	6.1	5.9
26	5.0	6.9	12	10	12	12	330	8.6	106	8.2	6.3	5.7
27	6.6	13	11	9.6	12	11	292	8.0	11	9.5	6.8	6.0
28	5.4	42	10	61	82	275	243	7.6	8.9	7.0	5.7	6.1
29	206	8.6	14	50	---	292	41	7.4	8.3	7.2	6.5	5.9
30	98	8.1	30	15	---	411	18	5.6	12	6.4	6.3	6.5
31	26	---	11	11	---	124	---	5.9	---	10	18	---
TOTAL	491.6	330.2	297.1	726.0	773.4	1824	1509.3	662.2	395.6	438.6	266.3	417.1
MEAN	15.9	11.0	9.58	23.4	27.6	58.8	50.3	21.4	13.2	14.1	8.59	13.9
MAX	206	42	30	78	135	411	330	177	106	88	29	51
MIN	4.7	6.2	7.1	8.8	8.4	10	9.4	5.6	6.1	5.7	5.0	5.7
AC-FT	975	655	589	1440	1530	3620	2990	1310	785	870	528	827

CAL YR 1989	TOTAL	14671.5	MEAN	40.2	MAX	2800	MIN	4.7	AC-FT	29100
WTR YR 1990	TOTAL	8131.4	MEAN	22.3	MAX	411	MIN	4.7	AC-FT	16130

SAN JACINTO RIVER BASIN

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 current year.

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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 27	0100	*5,220	*21.02	No other peak greater than base discharge.			

Minimum discharge not determined (affected by tides).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	e415	e65	---	---	---	---
2	---	---	---	---	---	---	e125	---	---	---	---	---
3	---	---	---	---	---	---	e75	575	---	---	---	---
4	---	---	---	---	---	---	e60	1800	---	---	---	---
5	---	---	---	---	---	---	---	e460	---	---	---	---
6	---	---	---	---	---	---	---	e135	---	---	---	---
7	---	---	---	---	---	---	---	e75	---	---	---	---
8	---	---	---	---	---	---	---	e60	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	e760	---	---	---	---	---	---	---
22	---	---	---	---	e1340	---	---	---	---	---	---	---
23	---	---	---	---	242	---	---	---	---	---	---	---
24	---	---	---	---	e100	---	---	---	---	---	---	---
25	---	---	---	---	e60	---	---	---	---	---	---	---
26	---	---	---	---	---	---	1390	---	---	---	---	---
27	---	---	---	---	---	---	2980	---	---	---	---	---
28	---	---	---	---	---	1390	1410	---	---	---	---	---
29	---	---	---	---	---	1850	e550	---	---	---	---	---
30	---	---	---	---	---	2740	e145	---	---	---	---	---
31	---	---	---	---	---	1210	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
CAL YR 1989	MEAN	---	MAX	---	MIN	---	---	---	---	---	---	---
WTR YR 1990	MEAN	---	MAX	---	MIN	---	---	---	---	---	---	---

e Estimated

CLEAR CREEK BASIN

155

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.--No estimated daily discharges. Records good. 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.--39 years (water years 1948-59, 1964-90), 36.1 ft³/s (26,150 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 4	0300	*300	*7.95				

Minimum daily discharge, 0.26 ft³/s Oct. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.31	4.1	.91	1.0	11	105	79	24	5.0	41	10	8.9
2	.26	3.8	.71	1.0	22	137	38	13	3.3	28	10	8.7
3	.61	3.2	.51	4.0	41	56	41	48	2.5	10	11	11
4	.52	3.0	.41	11	19	24	23	236	2.0	4.3	11	14
5	1.2	2.6	.36	8.0	6.4	13	11	113	1.9	4.1	10	15
6	1.0	2.3	.36	28	3.4	7.2	13	47	1.6	5.2	9.6	15
7	.89	2.3	1.2	34	3.8	4.7	13	20	2.0	7.7	9.1	14
8	.57	2.3	2.7	16	6.3	3.2	8.1	35	1.7	11	8.2	14
9	.52	2.1	2.8	9.7	12	2.6	5.0	34	3.5	5.7	8.3	19
10	.41	2.2	2.7	5.8	20	2.3	6.2	16	5.1	5.5	8.1	57
11	.60	2.0	2.5	4.5	11	2.1	5.7	8.2	12	5.0	8.4	44
12	2.1	1.6	2.6	2.2	6.2	2.5	4.3	5.5	29	5.2	8.7	32
13	2.6	1.5	2.8	1.2	3.1	9.2	3.9	4.4	20	4.9	8.6	72
14	2.6	1.2	3.1	.94	1.7	4.9	26	3.5	6.5	3.6	9.0	91
15	2.5	1.6	3.1	.79	3.5	8.3	27	2.8	4.4	3.1	9.8	58
16	2.6	2.0	1.1	.70	3.8	4.3	14	2.5	3.6	3.4	9.6	34
17	2.7	2.7	.93	1.2	1.9	2.9	7.1	5.5	2.7	5.6	9.0	24
18	2.5	2.7	3.6	1.3	2.0	2.3	4.0	4.1	2.3	6.9	8.7	20
19	2.6	2.9	4.2	5.0	1.7	2.0	3.1	2.6	1.7	6.3	8.2	16
20	2.5	2.1	1.5	14	1.6	2.0	2.7	2.4	1.2	7.2	8.4	14
21	2.4	1.4	.83	4.6	8.9	1.7	2.3	2.4	2.3	13	9.2	11
22	1.6	9.6	.56	1.2	11	2.1	1.9	5.9	4.8	15	12	8.7
23	.83	14	1.2	1.2	4.5	3.2	1.7	4.1	5.0	18	10	11
24	.62	5.5	5.3	14	4.4	3.3	1.4	2.6	4.4	19	15	9.4
25	1.4	4.1	6.3	13	6.6	3.1	1.4	2.4	10	16	15	5.1
26	2.6	3.7	5.7	6.0	6.8	3.0	56	2.3	14	13	13	3.3
27	2.4	1.7	4.5	4.4	3.2	2.8	198	2.2	13	9.9	11	2.3
28	2.3	10	1.8	18	15	8.5	264	2.2	30	8.2	11	1.7
29	14	7.7	1.1	58	---	50	188	2.3	18	7.4	11	1.7
30	15	1.6	.75	18	---	176	70	2.7	9.2	7.3	9.0	1.8
31	15	---	.76	21	---	165	---	4.4	---	9.7	9.0	---
TOTAL	87.74	107.5	66.89	309.73	241.8	814.2	1119.8	661.0	222.7	310.2	308.9	637.6
MEAN	2.83	3.58	2.16	9.99	8.64	26.3	37.3	21.3	7.42	10.0	9.96	21.3
MAX	15	14	6.3	58	41	176	264	236	30	41	15	91
MIN	.26	1.2	.36	.70	1.6	1.7	1.4	2.2	1.2	3.1	8.1	1.7
AC-FT	174	213	133	614	480	1610	2220	1310	442	615	613	1260
CAL YR 1989	TOTAL	10884.60	MEAN	29.8	MAX	1160	MIN	.24	AC-FT	21590		
WTR YR 1990	TOTAL	4888.06	MEAN	13.4	MAX	264	MIN	.26	AC-FT	9700		

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 gages. 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), 2.2 ft Oct. 15 at 2300 hours; minimum, -2.6 ft Dec. 23, 1983. Maximum elevation (Galveston Bay), 4.5 ft Oct. 15 at 2130 hours; minimum, -3.0 ft Dec. 12 and 23.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990												
DAY	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
	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN
1	1.0	.8	-.2	.9	.8	-.2	.5	.4	-.9	-.2	-.4	-1.2
2	1.0	.9	-.3	1.1	1.0	-.9	.5	.4	-1.2	.1	.0	-.5
3	1.0	.9	-.3	.5	.5	-.5	.0	-.1	-1.7	.6	.4	.0
4	1.1	1.0	-.5	1.1	1.0	-.4	.2	.0	-.9	.5	.3	-.4
5	1.3	1.1	.0	1.3	1.2	-.2	.2	.1	-1.1	.2	.1	-1.0
6	1.6	1.5	-.1	1.1	1.0	-.3	.0	-.1	-.5	.3	.1	-1.0
7	1.4	1.2	-.3	.9	.7	-.2	.4	.3	-.2	.3	.1	-1.3
8	1.0	.8	-.3	.9	.8	-.1	.2	-.1	-2.1	.1	.0	-1.6
9	1.7	1.5	.2	.8	.6	-.2	-.9	-.7	-2.5	.2	.2	-1.5
10	1.7	1.6	.2	.7	.5	-.3	-.1	.1	-1.6	.1	.0	-1.6
11	1.2	1.0	.2	.7	.7	-.5	.4	.3	-1.2	.1	.0	-1.7
12	1.5	1.3	.6	.9	1.0	-.4	-.3	-.6	-3.0	.2	.2	-1.8
13	1.5	1.4	.7	1.3	1.2	-.4	-.8	-.6	-2.1	.1	.3	-.8
14	1.6	1.6	.5	1.4	1.3	-.6	.0	.1	-1.2	.5	.3	-.8
15	2.2	4.5	1.0	1.5	1.5	-.5	.5	.4	-1.1	.2	.1	-.6
16	1.9	3.1	.4	-.1	-.5	-1.9	-.4	-.5	-1.5	.5	.4	-.2
17	1.8	1.7	-.6	.4	.7	-.6	.3	.1	-.6	.6	.4	-.1
18	1.0	.8	-1.1	1.7	1.5	.3	.8	.5	.0	.7	.7	-.4
19	.0	-.3	-2.0	1.7	1.6	.5	.7	.5	-.9	.9	.9	-.2
20	-.1	-.2	-1.3	1.2	1.2	-.2	.0	.0	-.8	1.0	.9	-.6
21	.4	.3	-1.0	.5	.3	-.1	.3	.1	-.7	.4	.2	-1.1
22	.5	.3	-.6	.7	.6	-.4	.2	-.1	-2.1	.3	.2	-1.3
23	.6	.5	-.4	.0	.0	-1.5	-1.6	-1.7	-3.0	.4	.3	-.9
24	.9	.7	-.1	.7	.7	-.5	-.6	-.7	-2.0	.5	.5	-.9
25	1.0	.7	.0	1.0	.9	-.2	-.4	-.6	-2.0	.5	.7	-2.3
26	1.0	.9	.2	.8	.7	-.5	-.6	-.8	-2.2	-.5	-.2	-1.8
27	1.0	.7	-.1	.8	.8	-.7	-.4	-.5	-1.7	.4	.4	-.7
28	1.3	1.2	.3	1.0	.9	-.9	-.2	-.1	-1.6	.7	.5	-.6
29	1.5	1.5	.2	.5	.3	-1.3	.4	.3	-1.1	.3	.1	-1.5
30	1.6	1.5	-.1	.4	.2	-1.2	.5	.4	-.7	.4	.3	-.5
31	1.1	1.0	-1.1	---	---	---	.6	.5	-1.3	.8	.6	.0
MONTH	2.2	4.5	-2.0	1.7	1.6	-1.9	.8	.5	-3.0	1.0	.9	-2.3

08077650 MOSES LAKE-GALVESTON BAY NEAR TEXAS CITY, TX--Continued

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990												
DAY	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
	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN
1	1.4	1.5	.3	.5	.2	-.4	1.5	1.3	-.2	1.5	1.4	.1
2	1.5	1.4	.0	.2	.1	-1.1	1.3	1.1	-.2	1.9	1.7	.5
3	1.0	.9	-.4	.5	.5	-1.3	1.2	.9	-.5	2.1	2.6	1.2
4	-.1	-.4	-2.2	.9	.9	-1.0	.9	.7	-.5	2.1	2.1	.1
5	.4	.8	-1.3	1.1	1.1	-.4	.9	.7	-.3	.7	.5	.0
6	1.0	1.0	-.4	1.5	1.4	.1	1.1	1.0	-.6	.8	.6	.0
7	.7	.6	-1.1	1.6	1.4	.2	1.1	.9	-.8	1.4	1.3	.0
8	.8	.7	-.5	1.5	1.4	.1	1.4	1.2	.6	1.9	1.8	.4
9	1.1	1.0	-.2	1.3	1.2	.1	1.5	1.4	.5	1.7	1.6	.0
10	.8	.7	-1.2	1.3	1.1	.4	1.3	1.1	---	1.2	1.0	-.2
11	.0	.0	-.7	1.5	1.4	.8	---	---	---	1.8	1.7	.2
12	.1	.0	-.6	1.9	1.7	1.0	1.5	1.3	---	2.0	2.3	.7
13	.7	.6	.0	2.1	2.1	1.0	1.9	1.7	.4	1.5	1.4	.3
14	.8	.6	.0	1.9	2.4	.7	1.5	1.2	.0	1.5	1.3	-.2
15	1.4	1.4	.1	1.8	1.4	.6	.9	.9	-.8	1.7	1.5	.2
16	1.3	1.1	-.5	1.5	1.3	.4	1.1	1.1	-.4	1.6	1.6	.4
17	.8	.7	-.5	1.1	.8	-.1	.9	1.1	.0	1.1	1.0	.1
18	1.2	1.1	.1	.8	.7	-.7	1.1	1.1	-.2	1.2	1.0	.1
19	1.1	1.0	-.2	.7	.5	-.5	1.2	1.4	-.1	1.4	1.2	.6
20	1.1	1.3	-.2	.6	.6	-.9	1.4	1.4	.4	1.3	1.2	.3
21	1.5	1.5	.4	.7	.7	-.8	1.0	1.0	.5	1.3	1.2	-.3
22	1.4	1.2	-.9	.9	.8	-.2	1.0	.9	.2	1.1	.9	-.5
23	-.1	-.5	-2.1	.7	.8	-.5	1.1	1.0	.2	1.5	1.4	-.4
24	-.5	-.6	-1.6	1.0	.9	-.2	1.5	1.4	.1	1.7	1.6	-.2
25	-.1	.0	-1.1	1.2	1.0	-.2	2.0	1.8	.3	1.8	1.7	-.1
26	.8	.7	.1	.6	.5	-.3	2.0	2.3	.5	1.8	1.7	-.1
27	.9	.7	.2	.9	.7	-.4	2.0	2.2	.4	1.9	1.8	.1
28	.9	.7	.0	1.3	1.2	.1	1.4	1.3	-.3	2.0	1.9	.2
29	---	---	---	1.8	1.7	.2	1.5	1.4	-.3	2.1	1.9	.4
30	---	---	---	1.5	1.6	.1	1.4	1.2	-.1	2.1	2.2	1.2
31	---	---	---	1.4	1.3	-.1	---	---	---	1.8	2.0	1.1
MONTH	1.5	1.5	-2.2	2.1	2.4	-1.3	---	---	---	2.1	2.6	-.5
DAY	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
	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN
1	2.1	2.1	.9	.9	.7	-.4	.2	.9	-.4	.9	.9	-.6
2	2.1	2.1	.5	.9	.7	-.9	.2	.9	-.7	1.2	1.1	-.2
3	1.5	1.3	.3	.5	.4	-.8	.8	.7	-.7	1.4	1.4	.0
4	1.2	1.2	-.4	.6	.5	-1.1	.7	.6	-.8	1.0	.9	.2
5	.9	.8	-.4	.8	.8	-.8	.7	.6	-.7	1.0	1.0	.1
6	1.1	1.0	-.5	.8	.7	-1.0	.7	.6	-.7	1.1	1.2	.4
7	1.3	1.2	-.4	1.0	.9	-.6	1.1	1.0	-.5	1.2	1.1	.1
8	1.4	1.3	-.4	.7	.6	-.7	1.2	1.1	.1	1.0	1.0	-.5
9	1.4	1.3	-.4	.8	.7	-.9	1.0	.8	.3	.9	.9	-.5
10	1.4	1.3	-.4	1.0	.9	-.5	.9	.7	.1	1.2	1.2	-.4
11	1.1	1.0	-.4	.8	.7	-.2	.8	.7	-.1	1.3	1.2	-.3
12	1.0	.9	-.5	.7	.7	-.2	.9	.8	-.4	1.4	1.3	-.1
13	1.1	1.0	-.3	.5	.4	-.6	1.2	1.1	-.3	1.9	1.8	.2
14	1.0	.9	-.1	.2	.1	-.5	1.3	1.2	-.2	1.4	1.3	-.3
15	1.0	.9	.1	.5	.4	-.3	1.4	1.4	-.3	1.0	.9	-.3
16	.9	.8	.1	1.4	1.3	.0	1.4	1.4	-.2	.9	.8	-.4
17	1.0	.9	-.3	1.8	1.8	.2	1.7	1.6	.0	.9	.9	.0
18	.8	.7	-.8	1.7	1.6	-.4	1.7	1.6	.1	.9	.8	.2
19	.7	.6	-1.1	1.3	1.2	-.5	1.3	1.2	.0	1.0	1.0	.4
20	.8	.8	-1.0	1.3	1.2	-.6	1.1	1.0	.0	1.0	.9	.2
21	.9	.9	-.9	1.2	1.0	-.6	.9	.9	.0	1.2	1.0	.3
22	.9	.8	-1.0	1.1	1.0	-.4	.8	.8	.1	1.1	1.0	-.4
23	.6	.5	-1.1	.9	.8	-.4	.9	.8	.0	.9	.7	-.4
24	.7	.6	-1.2	.8	.6	-.5	.5	.5	-.5	1.3	1.1	-.1
25	.9	.8	-.6	.7	.5	-.2	.4	.3	-.9	1.2	1.1	-.3
26	.7	.5	-.9	.6	.5	.0	.2	.2	-1.0	1.1	1.0	-.4
27	.6	.7	-.7	.7	.5	.0	.4	.3	-.8	1.0	.9	-.3
28	.7	.6	-.2	.9	.8	-.2	.9	1.0	-.3	1.1	1.1	-.4
29	.8	.7	.4	.6	.9	-.4	1.0	.9	-.8	1.0	.9	-.2
30	1.2	1.0	-.3	.2	.7	-.5	.6	.6	-1.1	.9	.9	-.3
31	---	---	---	.2	.8	-.4	.5	.5	-.9	---	---	---
MONTH	2.1	2.1	-1.2	1.8	1.8	-1.1	1.7	1.6	-1.1	1.9	1.8	-.6

HIGHLAND BAYOU BASIN

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) 0.4 ft Sept. 3, 1988; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Maximum elevation (landward), -0.4 ft Mar. 13, 1990 at 0245 hours; maximum elevation (seaward), 3.6 ft Oct. 15, 1989 at 2345 hours; minimum (seaward), -1.8 ft Dec. 12 at 1700 hours. Supplemental gage: Maximum elevation (landward), 0.4 ft Mar. 13 at 0400 hours and Sept. 13 at 0845 hours; minimum not determined.

08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX

ELEVATION (FEET, NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	OCTOBER				NOVEMBER				DECEMBER			
	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX
1	---	.9	.1	---	---	1.0	.1	---	---	.8	-.3	---
2	---	.9	.1	---	---	1.2	-.5	---	---	.7	-.7	---
3	---	.9	.0	---	---	.8	-.1	---	---	.1	-1.0	---
4	---	1.0	.0	---	---	1.2	.1	---	---	.3	-.5	---
5	---	1.2	.3	---	---	1.3	.2	---	---	.4	-.7	---
6	---	1.5	.3	---	---	1.2	.1	---	---	.3	-.2	---
7	---	1.3	.0	---	---	.9	.2	---	---	.3	-.1	---
8	---	.9	.1	---	---	.9	.0	---	---	.0	-1.5	---
9	---	1.6	.4	---	---	1.0	.1	---	---	-.5	-1.7	---
10	---	1.7	.5	---	---	.8	.0	---	---	.4	-1.0	---
11	---	1.3	.5	---	---	.9	.0	---	---	.6	-.9	---
12	---	1.5	.7	---	---	1.4	.2	---	---	-.5	-1.8	---
13	---	1.5	.9	---	---	1.6	.2	---	---	-.2	-1.4	---
14	---	1.7	.7	---	---	1.6	.3	---	---	.4	-.7	---
15	---	3.6	1.2	---	---	1.7	-.1	---	---	.6	-.9	---
16	---	3.5	.7	---	---	-.1	-1.2	---	---	-.1	-.9	---
17	---	1.8	.0	---	---	1.2	-.2	---	---	.5	-.3	---
18	---	1.0	-.7	---	---	1.9	.8	---	---	.8	.3	---
19	---	.2	-1.3	---	---	1.9	1.0	---	---	.8	-.4	---
20	---	.1	-.8	---	---	1.5	.2	---	---	.3	-.4	---
21	---	.4	-.5	---	---	.6	.2	---	---	.3	-.4	---
22	---	.5	-.3	---	---	.8	-.2	---	---	-.2	-1.6	---
23	---	.6	-.1	---	---	.2	-.8	---	---	-1.3	-1.7	---
24	---	.9	.2	---	---	1.0	-.2	---	---	-.5	-1.6	---
25	---	1.0	.2	---	---	1.2	.3	---	---	-.4	-1.3	---
26	---	1.0	.5	---	---	.9	-.1	---	---	-.6	-1.6	---
27	---	1.0	.3	---	---	1.1	-.1	---	---	-.3	-1.3	---
28	---	1.4	.7	---	---	1.1	-.6	---	---	.2	-1.1	---
29	---	1.7	.6	---	---	.4	-.6	---	---	.5	-.6	---
30	---	1.6	.4	---	---	.5	-.5	---	---	.6	-.3	---
31	---	1.1	-.4	---	---	---	---	---	---	.6	-.7	---
MONTH	---	3.6	-1.3	---	---	1.9	-1.2	---	---	.8	-1.8	---

HIGHLAND BAYOU BASIN

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08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX--Continued

08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX
ELEVATION (FEET, NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	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
	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX
1	---	.0	-.8	---	---	1.6	.5	---	-3.0	.6	-.1	---
2	---	.4	-.2	---	---	1.3	.4	---	-3.0	.4	-.3	---
3	---	.8	-.4	---	---	1.2	-.1	---	---	.8	-.5	---
4	---	.6	-.1	---	---	-.2	-1.4	---	---	1.1	-.4	---
5	---	.2	-.6	---	---	1.0	-1.0	---	---	1.4	.1	---
6	---	.3	-.7	---	---	1.2	.0	---	---	1.7	.5	---
7	---	.3	-.7	---	---	.8	-.5	---	---	1.7	.7	---
8	---	.3	-1.0	---	---	1.1	-.1	---	---	1.6	.6	---
9	---	.4	-.7	---	---	1.3	.3	---	---	1.5	.6	---
10	---	.1	-1.0	---	---	.7	-.6	---	---	1.5	.8	---
11	---	.1	-1.0	---	---	.2	-.4	---	---	1.7	1.3	---
12	---	.1	-1.2	---	---	.4	-.2	---	---	2.2	1.3	-.6
13	---	.6	-.4	---	---	.9	.3	---	-.4	2.4	1.4	-.4
14	---	.6	-.2	---	---	1.0	.3	---	---	2.4	1.1	---
15	---	.4	-.2	---	---	1.5	.5	---	---	1.7	1.0	---
16	---	.8	.1	---	-2.5	1.2	.0	---	---	1.6	.8	---
17	---	.8	.3	---	---	.9	-.3	---	---	1.1	.4	---
18	---	1.0	.0	---	---	1.3	.2	---	---	.8	-.3	---
19	---	1.1	.2	---	---	1.1	.1	---	---	.6	-.1	---
20	---	.8	-.3	---	---	1.5	.1	---	---	.8	-.4	---
21	---	.4	-.6	---	---	1.8	.9	---	---	1.1	-.2	---
22	---	.4	-.7	---	---	1.4	-.2	---	---	1.2	.3	---
23	---	.5	-.5	---	---	.0	-1.3	---	---	1.0	-.1	---
24	---	.6	-.5	---	---	-.4	-1.2	---	---	1.1	.3	---
25	---	.4	-1.2	---	---	.3	-.7	---	---	1.2	.3	---
26	---	.1	-1.0	---	---	1.0	.3	---	---	.7	.0	---
27	---	.6	-.3	---	---	1.0	.5	---	---	1.1	.0	---
28	-2.4	.8	.1	---	---	1.1	.3	---	---	1.6	.5	---
29	-2.4	.3	-.8	---	---	---	---	---	---	1.9	.6	---
30	---	.5	-.1	---	---	---	---	---	---	1.6	.7	---
31	---	1.1	.1	---	---	---	---	---	---	1.5	.4	---
MONTH	-2.4	1.1	-1.2	---	-2.5	1.8	-1.4	---	-.4	2.4	-.5	-.4

HIGHLAND BAYOU BASIN

08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX--Continued

08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX
ELEVATION (FEET, NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	APRIL				MAY				JUNE			
	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX
1	---	1.5	.4	---	---	1.6s	.8s	---	---	2.4	1.8	---
2	---	1.3	.3	---	---	1.9s	1.1s	---	---	2.4	1.1	---
3	---	1.0	.0	---	---	2.2s	1.5s	---	---	1.8	.6	---
4	---	1.0	.0	---	---	1.8s	.7s	---	---	1.5	.4	---
5	---	1.0	.3	---	---	1.1s	.7s	---	---	1.2	.2	---
6	---	1.2	-.2	---	---	1.1s	.6s	---	---	1.4	.2	---
7	---	1.3	-.3	---	---	1.6s	.7s	---	---	1.6	.4	---
8	---	1.5	1.0	---	---	2.1	1.1	---	---	1.6	.4	---
9	---	1.7	.9	---	---	2.2	1.0	---	---	1.6	.4	---
10	---	1.4	.3	---	---	1.6	.4	---	---	1.5	.4	---
11	---	.9	-.2	---	---	2.3	1.0	---	---	1.3	.3	---
12	---	1.6	.2	---	---	2.7	1.6	---	---	1.2	.1	---
13	---	2.0	.9	---	---	1.9	1.0	---	---	1.3	.3	---
14	---	1.4	.5	---	---	1.8	.7	---	---	1.2	.4	---
15	---	1.0	-.2	---	---	2.0	.9	---	---	1.2	.5	---
16	---	1.2	.1	---	---	2.0	1.3	---	---	1.1	.6	---
17	---	1.1	.2	---	---	1.4	.6	---	---	1.1	.2	---
18	---	1.2	.1	---	---	1.6	.8	---	---	.9	-.1	---
19	---	1.5	.3	---	---	1.8	1.3	---	---	.9	-.2	---
20	---	1.6	.8	---	---	1.7	1.0	---	---	1.1	-.3	---
21	---	1.2	.7	---	---	1.8	.4	---	---	1.2	-.1	---
22	---	1.2	.6	---	---	1.3	.3	---	---	1.2	-.1	---
23	---	1.3	.6	---	---	1.7	.3	---	---	.8	-.3	---
24	---	1.7	.6	---	---	2.0	.6	---	---	1.1	-.4	---
25	---	2.2	.8	---	---	2.0	.7	---	-3.0	1.1	.0	---
26	-1.5	2.5	1.2	-1.7	---	2.1	.6	---	---	.9	.0	---
27	-.8	2.5	1.4	-.9	---	2.1	.8	---	---	.7	-.2	---
28	---	1.6	.4	---	---	2.2	.9	---	---	.9	.3	---
29	---	1.6	.6	---	---	2.3	1.0	---	---	1.1	.6	---
30	---	1.5s	.8s	---	---	2.5	1.7	---	---	1.3	.3	---
31	---	---	---	---	---	2.2	1.6	---	---	---	---	---
MONTH	-.8	2.5	-.3	-.9	---	2.5	.3	---	-3.0	2.4	-.4	---

HIGHLAND BAYOU BASIN

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08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX--Continued

08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX
ELEVATION (FEET, NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	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
	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX
1	---	1.0	.2	---	---	1.2	.0	---	---	1.3	-.2	---
2	-3.0	1.0	.0	---	---	1.1	.0	---	---	1.4	.2	---
3	---	.6	-.3	---	---	1.0	.0	---	---	1.6	.5	---
4	---	.9	-.4	---	---	.9	-.1	---	---	1.3	.7	---
5	---	1.0	-.1	---	---	1.0	-.2	---	---	1.3	.5	---
6	---	1.0	-.1	---	---	1.0	-.1	---	---	1.5	.7	---
7	---	1.2	.0	---	---	1.3	.0	---	---	1.3	.6	---
8	---	.9	-.1	---	---	1.5	.5	---	---	1.2	.3	---
9	---	1.0	-.3	---	---	1.2	.7	---	---	1.1	.1	---
10	---	1.1	.1	---	---	1.0	.5	---	---	1.4	.2	---
11	---	1.0	.3	---	---	1.0	.5	---	---	1.4	.2	---
12	---	.9	.3	---	---	1.1	.3	---	---	1.5	.5	---
13	---	.6	-.2	---	---	1.4	.4	---	-.6	2.1	.7	-.4
14	---	.4	-.1	---	---	1.5	.4	---	---	1.5	.3	---
15	---	.8	.2	---	---	1.6	.4	---	---	1.2	.3	---
16	---	1.5	.5	---	---	1.7	.4	---	---	1.2	.2	---
17	---	2.0	.7	---	---	1.9	.5	---	---	1.2	.4	---
18	-1.9	2.0	.5	-1.7	---	1.9	.7	---	---	1.1	.6	---
19	---	1.5	.3	---	---	1.5	.7	---	---	1.2	.7	---
20	---	1.5	.2	---	---	1.4	.5	---	---	1.2	.6	---
21	---	1.4	.2	---	---	1.2	.5	---	---	1.4	.7	---
22	---	1.3	.2	---	---	1.1	.4	---	---	1.2	.1	---
23	---	1.0	.2	---	---	1.0	.4	---	---	1.0	.2	---
24	---	1.0	.1	---	---	.7	.1	---	---	1.5	.5	---
25	---	.9	.3	---	---	.6	-.1	---	---	1.3	.3	---
26	---	.8	.4	---	---	.3	-.4	---	---	1.3	.2	---
27	---	.8	.4	---	---	.5	-.1	---	---	1.1	.2	---
28	---	1.0	.3	---	---	1.0	.2	---	---	1.3	.2	---
29	---	1.1	.2	---	---	1.1	.0	---	---	1.2	.3	---
30	---	.9	.0	---	---	.7	-.3	---	---	1.1	.3	---
31	---	1.0	.0	---	---	.7	-.4	---	---	---	---	---
MONTH	-1.9	2.0	-.3	-1.7	---	1.9	-.4	---	-.6	2.1	-.2	-.4

s No data at primary station, elevation is at supplementary station as shown.

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.--41 years (water years 1948-57, 1960-90), 105 ft³/s (76,070 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 5	0100	*2,880	*28.57	No other peak greater than base discharge.			

Minimum daily discharge, (estimated) 0.35 ft³/s Dec. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.5	3.2	e.95	e.88	e25	122	e259	47	11	63	37	52
2	e3.2	3.8	e.86	e.90	e13	320	111	30	6.7	65	41	54
3	e3.1	3.4	e.73	e5.0	e9.4	116	61	336	18	47	50	60
4	e3.0	2.8	e.66	e30	e8.4	50	37	2450	12	33	50	55
5	e2.9	2.9	e.70	e100	e7.8	24	25	2530	8.5	29	43	50
6	e2.8	1.9	1.0	e60	e7.2	12	34	853	20	29	40	51
7	e2.7	2.0	.81	e45	e7.0	7.2	64	128	24	30	38	51
8	e2.7	2.0	1.0	e60	e10	5.3	35	235	14	32	33	47
9	e2.6	e1.3	e.70	e40	18	4.7	24	256	14	33	37	41
10	e2.6	e1.3	e.63	e30	28	4.0	32	88	11	33	34	45
11	e2.5	e1.2	e.53	e20	28	3.0	70	44	35	29	40	50
12	e2.5	e1.1	e.45	e13	15	5.0	35	30	38	28	41	48
13	e2.4	e1.7	e.35	e10	7.7	49	21	23	29	29	37	52
14	e2.4	e1.3	e.50	e7.0	1.5	30	25	16	29	30	44	88
15	e2.4	e1.3	.73	e5.8	4.8	28	49	14	26	22	43	68
16	e2.7	e1.2	.73	e5.0	9.1	22	31	12	11	29	47	44
17	e2.6	e1.2	.75	e4.0	6.2	13	23	10	10	71	46	32
18	e2.5	e1.1	.75	e3.6	5.1	6.2	15	9.7	14	66	53	25
19	e2.4	e1.0	.77	e3.2	8.1	3.8	13	11	15	64	59	16
20	e2.4	e.95	.69	e3.0	6.1	5.1	10	11	14	66	57	13
21	e2.3	.90	.70	e3.1	7.6	3.0	8.9	11	8.1	82	55	10
22	e2.2	1.7	e.72	e3.2	14	2.3	9.5	14	17	72	49	6.3
23	e2.2	3.2	e.74	e3.3	11	2.2	7.4	13	23	65	49	3.6
24	e2.1	1.6	e.80	e3.4	6.0	2.1	6.9	15	19	75	56	2.0
25	e2.1	1.3	e.90	e3.5	4.2	1.9	7.8	12	19	61	54	1.5
26	e2.4	e1.0	e.94	e3.4	3.6	1.6	65	63	20	50	55	1.4
27	e2.6	1.2	e1.0	e3.3	4.3	1.5	591	44	20	38	52	1.4
28	e2.4	2.8	e.96	e3.4	7.2	1.6	913	5.1	18	30	50	1.3
29	e2.2	2.0	e.92	e3.5	---	37	508	1.6	21	39	47	1.4
30	e2.1	1.1	e.88	e15	---	18	105	8.5	20	45	51	2.0
31	e3.0	---	e.87	e45	---	e566	---	20	---	46	49	---
TOTAL	79.5	53.45	23.72	536.48	283.3	1467.5	3196.5	7340.9	545.3	1431	1437	972.9
MEAN	2.56	1.78	.77	17.3	10.1	47.3	107	237	18.2	46.2	46.4	32.4
MAX	3.5	3.8	1.0	100	28	566	913	2530	38	82	59	88
MIN	2.1	.90	.35	.88	1.5	1.5	6.9	1.6	6.7	22	33	1.3
AC-FT	158	106	47	1060	562	2910	6340	14560	1080	2840	2850	1930

CAL YR 1989 TOTAL 40848.87 MEAN 112 MAX 5270 MIN .35 AC-FT 81020
WTR YR 1990 TOTAL 17367.55 MEAN 47.6 MAX 2530 MIN .35 AC-FT 34450

e Estimated

BRAZOS RIVER BASIN

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08079575 NORTH FORK DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR POST, TX

LOCATION.--Lat 33°14'52", long 101°20'24", Garza County, Hydrologic Unit 12050003, at right upstream end of bridge on Farm Road 651 and 4.4 mi northeast of Post.

DRAINAGE AREA.--438 mi².

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 ft³/s, which are fair. No known diversion above station.

AVERAGE DISCHARGE.--7 years, 31.3 ft³/s (22,680 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,500 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 1	1330	3,740	8.53	July 28	0030	*3,840	*8.61

Minimum daily discharge, no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	2.2	5.0	12	8.0	40	33	11	640	.00	39	.13
2	4.4	2.2	8.0	11	7.1	43	32	52	5.9	.00	19	e.03
3	4.4	1.4	10	9.0	12	40	31	86	3.4	.00	17	.00
4	3.4	1.9	7.1	12	11	34	25	192	2.6	.00	52	.00
5	3.9	2.6	7.1	11	9.0	36	22	94	.98	.00	38	.00
6	4.4	1.9	5.6	14	10	30	20	60	.36	.00	37	.00
7	3.4	1.2	5.0	11	8.0	30	18	53	.22	.00	12	.00
8	3.0	1.2	7.1	10	5.6	34	16	40	.22	.00	7.1	.00
9	2.6	1.9	10	9.0	6.3	30	12	36	.28	.00	5.0	.00
10	1.9	2.2	8.0	7.1	11	174	10	36	.22	.00	3.9	.00
11	1.2	3.4	7.1	7.1	19	31	8.4	24	.05	.00	3.9	.00
12	.68	3.4	5.6	10	12	18	18	21	.07	.00	3.4	.00
13	.68	2.6	8.0	11	10	26	7.1	16	e.05	.00	2.2	.00
14	1.2	2.6	10	10	19	20	7.1	15	.07	.00	40	.00
15	.98	3.0	3.9	9.0	32	21	6.3	8.0	e.05	.00	103	.00
16	.82	3.0	3.9	7.1	43	20	5.6	3.9	e.05	.00	70	.00
17	.98	5.0	3.9	5.6	46	16	6.3	4.4	e.04	.00	65	.00
18	.98	4.4	9.6	15	35	15	80	6.4	e.04	.00	38	.00
19	1.2	4.4	10	12	29	14	38	6.3	e.02	.00	24	.00
20	.82	3.9	e5.6	21	63	14	39	5.7	e.02	.00	23	.00
21	e.68	3.4	e3.9	28	60	12	47	6.0	e.02	.00	19	.00
22	.68	3.9	e3.9	15	84	11	46	7.1	e.02	.00	20	.00
23	.68	5.0	e3.9	14	76	11	40	4.4	e.01	.00	21	.00
24	.82	6.3	e3.9	14	57	12	32	3.0	e.01	.00	14	.04
25	.82	6.3	19	11	59	9.0	172	3.0	.00	.00	7.8	.02
26	.82	5.6	11	12	64	9.0	136	5.6	.00	.00	5.2	.09
27	1.9	4.4	14	9.0	101	12	46	15	.00	66	3.5	e.02
28	1.9	4.4	12	5.6	86	11	31	18	.00	278	2.3	.00
29	1.9	4.4	10	8.0	---	11	24	68	.00	5.6	.68	.00
30	1.9	5.0	21	7.1	---	16	16	18	.00	203	.55	.19
31	2.6	---	16	7.1	---	24	---	10	.00	131	.16	---
TOTAL	61.24	103.1	259.1	344.7	983.0	824.0	1024.8	928.8	654.70	683.60	696.69	0.52
MEAN	1.98	3.44	8.36	11.1	35.1	26.6	34.2	30.0	21.8	22.1	22.5	.017
MAX	5.6	6.3	21	28	101	174	172	192	640	278	103	.19
MIN	.68	1.2	3.9	5.6	5.6	9.0	5.6	3.0	.00	.00	.16	.00
AC-FT	121	204	514	684	1950	1630	2030	1840	1300	1360	1380	1.0
CAL YR 1989	TOTAL	4635.52	MEAN	12.7	MAX	349	MIN	.00	AC-FT	9190		
WTR YR 1990	TOTAL	6564.25	MEAN	18.0	MAX	640	MIN	.00	AC-FT	13020		

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, 3,850 microsiemens Sept. 26; minimum daily, 462 microsiemens July 28.

WATER TEMPERATURES: Maximum daily, 34.0°C Aug. 28; minimum daily, 0.0°C Dec. 11, 12, 15, 17, Jan. 12.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (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 17...	1315	1.5	3110	18.5	660	350	68	120	450
DEC 05...	0915	8.5	2740	3.5	610	270	64	110	370
JAN 23...	1055	14	2460	9.0	560	240	70	94	320
MAR 13...	1100	25	2690	18.0	610	260	80	99	360
MAY 21...	1240	4.5	3400	21.5	670	320	71	120	480
JUN 01...	1840	172	450	21.0	46	0	11	4.6	48

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
OCT 17...	8	24	320	500	560	4.6	18	1940
DEC 05...	7	20	340	400	460	4.4	20	1650
JAN 23...	6	23	330	370	440	3.8	19	1530
MAR 13...	6	22	350	360	460	3.7	29	1620
MAY 21...	8	26	350	540	610	4.1	20	2080
JUN 01...	3	3.6	49	49	53	0.70	6.4	206

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	61.24	2990	1860	308	520	86	480	79	630
NOV. 1989	103.1	2890	1790	499	500	139	460	127	620
DEC. 1989	259.1	2620	1610	1120	450	312	400	282	560
JAN. 1990	344.7	2570	1580	1470	440	407	390	367	560
FEB. 1990	983.0	2470	1510	4000	420	1110	370	994	540
MAR. 1990	824.0	2400	1470	3270	410	907	370	816	520
APR. 1990	1024.8	2280	1390	3840	380	1060	340	954	490
MAY 1990	928.8	2540	1560	3900	430	1080	390	977	550
JUNE 1990	654.70	961	555	982	150	267	130	223	220
JULY 1990	683.60	853	497	917	140	250	110	211	200
AUG. 1990	696.69	2260	1370	2580	380	713	340	636	490
SEPT 1990	0.52	3440	2180	3.1	610	0.9	570	0.8	710
TOTAL	6564.25	**	**	22900	**	6340	**	5670	**
WTD.AVG.	18	2120	1290	**	360	**	320	**	460

08079575 NORTH FORK DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR POST, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2700	3010	2770	2600	2680	2590	2590	2960	930	---	2490	2780
2	2940	2970	2740	2620	2710	2640	2670	1860	1740	---	2640	e2850
3	2900	3020	2730	2630	2690	2650	2730	2000	2200	---	2690	---
4	2930	2950	2720	2600	2670	2690	2750	2350	2740	---	1930	---
5	2930	3060	2700	2610	2680	2700	2820	2390	2930	---	2200	---
6	2900	3130	2710	2630	2700	2750	2830	2500	3240	---	2470	---
7	2980	3080	2650	2630	2720	2760	2840	2600	3310	---	2730	---
8	2960	3130	2660	2610	2760	2720	2880	2610	3460	---	2980	---
9	2960	3140	2650	2620	2720	2750	2980	2630	3380	---	3130	---
10	2960	3040	2630	2650	2780	1340	2980	2680	3440	---	3270	---
11	3060	3000	2630	2690	2730	1640	3080	2770	3180	---	3250	---
12	3090	2970	2620	2670	2700	2600	3060	2900	3090	---	3220	---
13	3130	3040	2620	2610	2730	2670	3020	2980	e3100	---	3360	---
14	3060	3000	2530	2610	2600	2680	3070	3040	e3110	---	1810	---
15	3080	3070	3000	2590	2630	2690	3160	3200	e3120	---	1690	---
16	3220	3020	3330	2570	2620	2760	3230	3270	e3130	---	1920	---
17	3230	2880	3170	2580	2570	2780	3160	3400	e3150	---	2330	---
18	3200	2890	2490	2280	2570	2860	1410	3400	e3180	---	2460	---
19	3180	2880	2580	2150	2600	2880	2740	3370	e3200	---	2500	---
20	3260	2860	e2600	2690	1890	2940	2600	3380	e3240	---	2560	---
21	3230	2820	e2630	2530	2410	3010	2710	3440	e3280	---	2570	---
22	3260	2860	e2660	2500	2430	3000	2660	3330	e3300	---	2510	---
23	3330	2820	e2680	2530	2440	2950	2710	3670	e3310	---	2400	---
24	3300	2770	e2720	2580	2460	2910	2790	3580	e3340	---	2740	3820
25	3370	2780	2740	2570	2470	2930	1410	3120	---	---	2750	e3840
26	3300	2810	2350	2550	2500	2910	1630	3070	---	---	2890	3850
27	3140	2800	2450	2620	2400	2890	2460	2880	---	e600	2990	e3840
28	3040	2820	2640	2670	2370	2890	2740	2830	---	462	3240	---
29	2990	2700	2620	2680	---	2780	2900	2750	---	675	3320	---
30	3060	2770	2350	2710	---	2760	2960	2840	---	754	3220	3630
31	3010	---	2510	2600	---	2580	---	3160	---	1970	3070	---
MEAN	3090	2940	2670	2590	2580	2700	2720	2930	3000	892	2690	3520

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.0	9.0	9.0	2.0	15.0	12.0	17.0	14.0	20.0	---	29.0	25.0
2	25.0	13.0	9.0	11.0	13.0	12.0	21.0	14.0	26.0	---	30.0	---
3	23.0	13.0	5.0	9.0	9.0	8.0	20.0	19.0	22.0	---	32.0	---
4	24.0	8.0	13.0	9.0	5.0	14.0	26.0	21.0	31.0	---	23.0	---
5	23.0	14.0	7.0	10.0	12.0	18.0	20.0	16.0	30.0	---	24.0	---
6	14.0	17.0	15.0	2.0	15.0	15.0	22.0	15.0	29.0	---	24.0	---
7	26.0	16.0	7.0	3.0	15.0	19.0	22.0	25.0	29.0	---	30.0	---
8	25.0	15.0	12.0	12.0	16.0	21.0	16.0	23.0	30.0	---	33.0	---
9	21.0	18.0	5.0	13.0	14.0	21.0	23.0	20.0	21.0	---	33.0	---
10	23.0	16.0	4.0	14.0	3.0	15.0	10.0	18.0	25.0	---	33.0	---
11	21.0	16.0	.0	11.0	9.0	16.0	9.0	23.0	25.0	---	23.0	---
12	24.0	17.0	.0	.0	15.0	20.0	21.0	25.0	30.0	---	23.0	---
13	23.0	17.0	5.0	4.0	15.0	18.0	24.0	28.0	---	---	30.0	---
14	17.0	7.0	9.0	8.0	7.0	9.0	28.0	28.0	---	---	22.0	---
15	18.0	15.0	.0	15.0	6.0	19.0	24.0	25.0	---	---	25.0	---
16	18.0	10.0	1.0	15.0	11.0	16.0	26.0	24.0	---	---	28.0	---
17	15.0	3.0	.0	14.0	1.0	9.0	14.0	23.5	---	---	22.0	---
18	14.0	6.0	4.0	10.0	13.0	21.0	10.0	25.0	---	---	33.0	---
19	16.0	9.0	5.0	5.0	6.0	20.0	16.0	31.0	---	---	28.0	---
20	17.0	16.0	---	13.0	12.0	17.0	24.0	18.0	---	---	31.0	---
21	15.0	18.0	---	4.0	13.0	20.0	25.0	26.0	---	---	33.0	---
22	18.0	15.0	---	13.0	11.0	21.0	22.0	16.0	---	---	33.0	---
23	21.0	3.0	---	13.0	17.0	11.0	25.0	28.0	---	---	29.0	---
24	23.0	8.0	---	8.0	6.0	8.0	23.0	31.0	---	---	28.0	25.0
25	20.0	12.0	2.0	14.0	11.0	6.0	24.0	30.0	---	---	24.0	---
26	20.0	10.0	8.0	14.0	19.0	15.0	25.0	30.0	---	---	27.0	29.0
27	20.0	12.0	10.0	5.0	14.0	10.0	24.0	27.0	---	---	24.0	---
28	17.0	6.0	8.0	10.0	8.0	25.0	22.0	21.0	---	22.0	34.0	---
29	18.0	8.0	8.0	10.0	---	12.0	24.0	22.0	---	22.0	30.0	---
30	13.0	9.0	4.0	11.0	---	18.0	22.0	30.0	---	24.0	33.0	19.0
31	12.0	---	3.0	13.0	---	10.0	---	28.0	---	28.0	31.0	---
MEAN	19.4	11.9	5.9	9.5	11.1	15.4	21.0	23.4	26.5	24.0	28.5	24.5

BRAZOS RIVER MAIN STEM

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.--28 years (water years 1963-90), 27.1 ft³/s (1.51 in/yr), 19,630 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 19	0100	4,510	a9.28	June 1	1830	4,600	a9.41
Feb. 28	0200	2,420	a8.16	Aug. 14	2400	*8,810	a*11.27

a From floodmark.

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	.00	e.01	.00	.07	9.5	.00	.02	771	.00	9.9	.07		
2	.00	.00	e.02	.00	.10	1.1	.00	33	143	.00	42	e.03		
3	.00	.00	e.03	.00	.10	.23	.00	25	4.0	.00	144	e.02		
4	.00	.00	e.03	.00	.13	.13	.00	1.3	.07	.00	479	e.01		
5	.00	.00	.03	.00	.18	.18	.00	.18	.03	.00	36	.00		
6	.00	.00	e.03	.00	.23	.13	.00	.03	.02	.00	44	.00		
7	.00	.00	e.03	.00	.13	.13	.00	.07	.01	.00	15	.00		
8	.00	.00	e.02	.00	.10	.13	.00	.02	.01	.00	10	.00		
9	.00	.00	e.02	.00	.07	.73	.00	.01	.00	.00	9.8	.00		
10	.00	.00	e.02	.00	.05	223	.00	.00	.00	.00	9.8	.18		
11	.00	.00	e.01	.00	.05	237	.00	.00	.00	.00	9.3	.05		
12	.00	.00	e.01	.00	.05	16	.00	.00	.00	.00	9.3	.03		
13	.00	.00	e.01	.00	.07	2.9	.00	.00	.00	.00	9.3	e.01		
14	.00	.00	e.01	.00	.07	1.8	.00	.00	.00	.00	1140	.00		
15	.00	.00	e.01	.00	.10	.44	.00	.00	.00	.00	1080	.00		
16	.00	.00	e.01	.00	.07	.30	.00	.00	.00	.00	31	.00		
17	.00	.00	.00	.00	.07	.23	.00	.00	.00	.00	8.8	.17		
18	.00	.00	.00	.00	.07	.10	209	.00	.00	36	4.1	.05		
19	.00	.00	.00	472	.05	.05	75	.00	.00	3.8	2.9	.07		
20	.00	.00	.00	5.1	5.8	.01	46	.00	.00	.98	2.7	.03		
21	.00	.00	.00	.62	26	.00	7.0	.00	.00	.98	2.4	e.01		
22	.00	.00	.00	.36	1.3	.00	1.1	.00	.00	29	2.0	.76		
23	.00	.00	.00	.13	.62	.00	.53	.00	.00	4.0	1.8	.10		
24	.00	.00	.00	.23	.36	.00	1.6	.00	.00	2.1	1.4	.07		
25	.00	.00	.00	.13	.23	.00	88	.00	.00	4.0	1.1	.05		
26	.00	.00	.00	.13	.10	.00	8.5	.00	.00	2.2	.86	.05		
27	.00	.00	.00	.07	39	.00	1.1	.00	.00	1.6	.73	.02		
28	.00	.00	.00	.05	566	.00	.18	.00	.00	121	.44	e.01		
29	.00	.00	.00	.05	---	.00	.07	.00	.00	64	.23	e.18		
30	.00	.00	.00	.07	---	.00	.03	48	.00	37	.13	.10		
31	.00	---	.00	.07	---	.00	---	6.6	---	56	.10	---		
TOTAL	0.00	0.00	0.30	479.01	641.17	494.09	438.11	114.23	918.14	362.66	3108.09	2.07		
MEAN	.000	.000	.010	15.5	22.9	15.9	14.6	3.68	30.6	11.7	100	.069		
MAX	.00	.00	.03	472	566	237	209	48	771	121	1140	.76		
MIN	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.10	.00		
AC-FT	.00	.00	.6	950	1270	980	869	227	1820	719	6160	4.1		
CFSM	.00	.00	.00	.06	.09	.07	.06	.02	.13	.05	.41	.00		
IN.	.00	.00	.00	.07	.10	.08	.07	.02	.14	.06	.47	.00		
CAL YR 1989	TOTAL	8533.03	MEAN	23.4	MAX	1380	MIN	.00	AC-FT	16930	CFSM	.10	IN.	1.30
WTR YR 1990	TOTAL	6557.87	MEAN	18.0	MAX	1140	MIN	.00	AC-FT	13010	CFSM	.07	IN.	1.00

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, 32.5°C July 4, 1978; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum estimated daily, 26,700 microsiemens Dec. 16; minimum daily, 437 microsiemens Aug. 15.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
DEC 05...	1100	0.03	26300	9.0	1600	1400	360	180	4700
JAN 23...	1330	0.11	12600	10.0	840	610	210	77	2500
MAR 13...	1430	2.6	4390	20.0	630	490	140	69	670
JUN 01...	2220	1470	731	25.0	30	0	8.2	2.3	130
AUG 22...	1255	2.2	8360	32.5	560	360	140	51	1500

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
DEC 05...	51	16	210	970	7700	0.90	8.0	14100
JAN 23...	38	13	230	510	3800	1.2	10	7260
MAR 13...	12	13	140	450	1000	1.3	12	2440
JUN 01...	10	2.6	89	82	110	0.80	6.9	396
AUG 22...	28	10	200	300	2400	1.1	14	4540

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
NOV. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
DEC. 1989	0.30	26300	16600	13	8800	7.1	1200	1.0	*
JAN. 1990	479.01	712	415	536	230	297	28	36	50
FEB. 1990	641.17	1700	1000	1730	550	953	68	118	120
MAR. 1990	494.09	3140	1850	2470	1000	1360	130	168	220
APR. 1990	438.11	1250	726	859	400	475	49	58	87
MAY 1990	114.23	2380	1390	429	770	237	94	29	170
JUNE 1990	918.14	1200	700	1730	390	961	47	116	84
JULY 1990	362.66	1380	810	793	450	438	55	54	97
AUG. 1990	3108.09	872	511	4290	280	2360	35	290	61
SEPT 1990	2.07	10200	6120	34	3300	19	430	2.4	*
TOTAL	6557.87	**	**	12900	**	7110	**	872	**
WTD.AVG.	18	1240	728	**	400	**	49	**	87

BRAZOS RIVER MAIN STEM

08079600 DOUBLE MOUNTAIN FORK BRAZOS RIVER AT JUSTICEBURG, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e26000	---	e16000	1410	---	e12800	1260	---	4330	12100
2	---	---	e26100	---	e16100	3850	---	2410	880	---	862	e12200
3	---	---	e26200	---	e16300	6820	---	1570	1750	---	1060	e12300
4	---	---	e26300	---	e16400	9830	---	2790	1550	---	640	e12400
5	---	---	26300	---	e16600	9160	---	6760	1440	---	1360	---
6	---	---	e26300	---	e16700	9890	---	9070	1070	---	1390	---
7	---	---	e26300	---	e16800	10300	---	11800	1220	---	3550	---
8	---	---	e26400	---	e16700	10800	---	e12400	e1440	---	6640	---
9	---	---	e26400	---	e16600	10300	---	e12800	---	---	8790	---
10	---	---	e26500	---	e16500	5560	---	---	---	---	9090	12400
11	---	---	e26500	---	e16400	922	---	---	---	---	9430	13300
12	---	---	e26500	---	e16300	1920	---	---	---	---	11500	13600
13	---	---	e26600	---	e16200	4060	---	---	---	---	12500	e13800
14	---	---	e26600	---	e16100	5120	---	---	---	---	640	---
15	---	---	e26600	---	16000	7220	---	---	---	---	437	---
16	---	---	e26700	---	e16200	9000	---	---	---	---	1340	---
17	---	---	---	---	e16400	9930	---	---	---	---	2440	12900
18	---	---	---	---	e16500	e10100	e1000	---	---	1040	5220	13200
19	---	---	---	650	e16600	e10200	1020	---	---	2360	5850	13600
20	---	---	---	2520	e12000	e10300	1090	---	---	13500	9310	13700
21	---	---	---	7760	3180	---	1880	---	---	17400	9610	e13800
22	---	---	---	10000	5460	---	4930	---	---	10300	5360	---
23	---	---	---	13000	12600	---	8170	---	---	2150	11900	11200
24	---	---	---	12100	e13000	---	10000	---	---	8590	11500	11400
25	---	---	---	14400	e13400	---	1700	---	---	3970	11300	12600
26	---	---	---	15100	e13800	---	1830	---	---	9620	13700	13000
27	---	---	---	15500	e9500	---	3480	---	---	14500	13500	13000
28	---	---	---	e15600	907	---	9110	---	---	1010	12900	e13500
29	---	---	---	e15700	---	---	11600	---	---	e850	12700	e14000
30	---	---	---	e15800	---	---	12000	2300	---	1430	12800	14600
31	---	---	---	e15900	---	---	---	5460	---	1020	12900	---
MEAN	---	---	26400	11800	14100	7330	5220	7290	1330	5660	7400	12600

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	4.5	---	---	19.5	---	21.5	21.5
2	---	---	---	---	---	3.5	---	10.0	20.0	---	21.5	---
3	---	---	---	---	---	5.0	---	13.5	19.5	---	22.0	---
4	---	---	---	---	---	21.0	---	15.0	19.5	---	22.0	---
5	---	---	---	---	---	12.0	---	10.0	21.0	---	22.0	---
6	---	---	---	---	---	14.0	---	21.5	21.5	---	21.5	---
7	---	---	---	---	---	7.5	---	13.0	22.0	---	23.0	---
8	---	---	---	---	---	6.0	---	---	---	---	19.0	---
9	---	---	---	---	---	15.0	---	---	---	---	21.0	---
10	---	---	---	---	---	15.5	---	---	---	---	20.0	21.5
11	---	---	---	---	---	17.5	---	---	---	---	20.5	20.0
12	---	---	---	---	---	18.5	---	---	---	---	25.0	19.5
13	---	---	---	---	---	17.5	---	---	---	---	21.5	---
14	---	---	---	---	---	8.5	---	---	---	---	21.5	---
15	---	---	---	---	4.0	5.0	---	---	---	---	22.0	---
16	---	---	---	---	---	6.0	---	---	---	---	24.5	---
17	---	---	---	---	---	7.0	---	---	---	---	23.0	21.0
18	---	---	---	---	---	---	---	---	---	23.0	21.5	21.0
19	---	---	---	6.0	---	---	11.5	---	---	24.5	25.0	21.5
20	---	---	---	13.0	---	---	15.0	---	---	24.0	23.0	21.5
21	---	---	---	13.0	8.0	---	28.0	---	---	22.0	22.0	---
22	---	---	---	6.5	7.0	---	20.0	---	---	21.5	22.0	19.5
23	---	---	---	9.0	4.5	---	17.0	---	---	19.0	21.5	17.0
24	---	---	---	6.5	---	---	16.0	---	---	21.5	22.0	15.5
25	---	---	---	1.5	---	---	17.0	---	---	22.0	21.0	15.5
26	---	---	---	2.5	---	---	17.5	---	---	24.0	24.5	17.0
27	---	---	---	5.0	---	---	18.0	---	---	22.0	21.0	18.0
28	---	---	---	---	6.5	---	18.0	---	---	22.0	21.0	---
29	---	---	---	---	---	---	18.0	---	---	---	22.0	---
30	---	---	---	---	---	---	---	21.0	---	21.5	21.0	18.0
31	---	---	---	---	---	---	---	24.0	---	22.0	22.5	---
MEAN	---	---	---	7.0	6.0	10.8	17.8	16.0	20.4	22.2	22.0	19.2

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 fair except those for estimated daily discharges, which are poor. There are small diversions above station for oil field operations.

AVERAGE DISCHARGE.--61 years (water years 1925-34, 1940-90), 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 2	1830	*28,900	*18.69				

Minimum daily discharge, 0.04 ft³/s Oct. 24, 25, Nov. 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	1.7	.09	.28	8.4	349	18	77	1080	23	272	20
2	4.1	.90	.09	.28	8.3	213	17	182	21800	23	256	19
3	3.3	.64	.09	.28	7.4	142	15	231	3630	22	181	19
4	2.4	.56	.09	.28	6.1	97	15	127	971	21	156	19
5	2.0	.38	.09	.24	5.4	69	14	107	589	20	386	18
6	1.4	.28	.09	.20	4.5	54	16	119	426	19	560	15
7	1.1	.20	.11	.20	4.0	69	12	83	326	18	369	14
8	.99	.11	.14	.20	4.1	36	11	71	257	17	256	13
9	.90	.09	.14	.14	4.2	27	11	62	212	17	204	12
10	.80	.07	.14	.11	4.1	252	10	51	184	17	160	11
11	.72	.04	.20	.11	4.1	487	9.2	48	162	16	178	11
12	.50	e.04	.20	.11	4.1	493	8.8	42	143	49	115	10
13	.44	e.07	.20	.11	4.1	316	8.0	36	130	92	91	9.2
14	.33	e.07	.20	.11	4.1	194	367	32	120	59	84	8.4
15	.20	.07	.28	.11	4.2	122	313	29	112	41	1490	8.0
16	.14	e.09	.28	.11	5.0	86	96	27	112	36	2170	9.1
17	.11	e.11	.24	.11	3.9	63	49	24	101	31	529	29
18	.07	e.14	.20	16	3.8	49	1190	22	91	28	243	31
19	.07	.20	.24	130	3.8	40	2680	21	81	23	211	20
20	.07	.24	.28	235	3.9	34	1430	20	66	23	131	66
21	.05	.14	.28	148	4.1	30	1070	18	59	25	97	143
22	.05	.09	.28	87	4.5	26	405	18	54	e43	74	156
23	.05	.09	.28	57	4.1	24	234	17	50	105	62	134
24	.04	.09	.28	38	4.0	23	331	16	46	122	60	50
25	.04	.09	.28	26	7.5	23	214	15	44	104	49	34
26	.05	.11	.28	19	11	23	112	14	37	129	41	24
27	27	.09	.28	15	14	22	79	14	33	98	35	18
28	97	.09	.28	12	162	21	92	14	28	e62	30	14
29	11	.09	.28	11	---	20	130	14	26	e42	29	11
30	4.2	.09	.28	9.6	---	19	88	13	24	52	25	7.6
31	2.6	---	.28	8.6	---	19	---	13	---	239	23	---
TOTAL	166.42	6.97	6.47	815.18	308.7	3442	9045.0	1577	30994	1616	8567	953.3
MEAN	5.37	.23	.21	26.3	11.0	111	301	50.9	1033	52.1	276	31.8
MAX	97	1.7	.28	235	162	493	2680	231	21800	239	2170	156
MIN	.04	.04	.09	.11	3.8	19	8.0	13	24	16	23	7.6
AC-FT	330	14	13	1620	612	6830	17940	3130	61480	3210	16990	1890
CFSM	.00	.00	.00	.01	.01	.06	.16	.03	.55	.03	.15	.02
IN.	.00	.00	.00	.02	.01	.07	.18	.03	.62	.03	.17	.02

CAL YR 1989	TOTAL	19468.75	MEAN	53.3	MAX	3230	MIN	.00	AC-FT	38620	CFSM	.03	IN.	.39
WTR YR 1990	TOTAL	57498.04	MEAN	158	MAX	21800	MIN	.04	AC-FT	114000	CFSM	.08	IN.	1.15

e Estimated

BRAZOS RIVER MAIN STEM

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.--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, 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, 10,500 microsiemens July 17; minimum daily, 910 microsiemens Aug. 17.

WATER TEMPERATURE: Maximum daily, 37.0°C on several days during July; minimum daily, 0.0°C Dec. 16.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)	
NOV 15...	1235	0.10	8960	8.2	10.0	0.40	10.3	99	0.6	K15	K8	2800	
JAN 23...	1530	43	1840	8.0	12.5	1400	11.2	112	2.6	2400	3000	230	
MAR 27...	1155	22	6410	8.0	9.0	75	10.8	101	0.9	K32	K28	1300	
MAY 17...	1250	25	7530	8.0	21.0	20	10.3	124	1.6	84	K28	1600	
JUL 17...	1228	31	10500	8.1	26.0	4.0	8.0	108	1.2	100	40	2000	
AUG 22...	0900	171	2100	8.4	25.5	120	7.9	103	2.1	K160	K160	410	
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 TOT IT FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
NOV 15...	2600	830	170	940	8	2.4	145	2000	2100	0.50	12		6520
JAN 23...	120	65	17	250	7	5.2	118	260	320	0.60	5.5		1040
MAR 27...	1200	360	100	900	11	12	146	1200	1400	0.90	14		4270
MAY 17...	1500	440	130	1100	12	14	118	1500	1700	1.1	14		5170
JUL 17...	1900	620	120	1700	16	13	103	2100	2500	<0.10	11		7410
AUG 22...	300	120	25	280	6	6.5	105	390	370	0.90	10		1300
DATE		SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (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 TOTAL (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
NOV 15...	6160	--	<0.010	<0.100	0.260	0.260	--	<0.20	<0.010	0.010	0.010		0.03
JAN 23...	997	0.480	0.020	0.500	0.620	0.090	5.0	5.6	--	0.020	0.010		0.03
MAR 27...	4070	--	<0.010	<0.100	0.050	0.030	0.55	0.60	0.020	<0.010	<0.010		--
MAY 17...	4980	--	<0.010	<0.100	<0.010	<0.010	--	0.80	0.060	<0.010	<0.010		--
JUL 17...	7130	--	<0.010	<0.100	0.060	0.010	0.34	0.40	0.030	<0.010	<0.010		--
AUG 22...	1270	--	<0.010	<0.100	<0.010	0.030	--	0.60	0.110	<0.010	<0.010		--

BRAZOS RIVER MAIN STEM

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08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	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)	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)	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 15...	17	0.00	63	<10	3	<100	10	<1.0	4	1	<1	50
JAN 23...	14900	1730	100	90	13	91	<0.5	<1.0	<1	<3	20	56
MAR 27...	145	8.6	100	--	--	--	--	--	--	--	--	--
MAY 17...	75	5.0	95	10	3	<100	<10	<1.0	3	<1	1	50
JUL 17...	67	5.6	78	--	--	--	--	--	--	--	--	--
AUG 22...	250	115	62	<10	5	100	<10	<1.0	1	1	2	10
NOV 15...	<1	180	820	<0.1	4	<1	<1	<1.0	13000	24	20	
JAN 23...	<10	38	9	0.1	<10	<10	<1	<1.0	1700	8	3	
MAR 27...	--	--	--	--	--	--	--	--	--	--	--	
MAY 17...	<1	150	60	0.4	10	1	<1	<1.0	9300	24	<10	
JUL 17...	--	--	--	--	--	--	--	--	--	--	--	
AUG 22...	<1	50	<10	<0.1	10	<1	<1	<1.0	2700	30	<10	

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	166.42	3380	2240	1010	690	312	730	330	830
NOV. 1989	6.97	7270	4960	93	1700	31	1600	29	1800
DEC. 1989	6.47	7440	5080	89	1700	30	1600	28	1900
JAN. 1990	815.18	2270	1470	3240	420	931	500	1100	550
FEB. 1990	308.7	5580	3780	3150	1200	1030	1200	1000	1400
MAR. 1990	3442	2690	1740	16200	500	4680	590	5500	650
APR. 1990	9045.0	1970	1270	31000	360	8790	440	10600	470
MAY 1990	1577	5020	3360	14300	1100	4530	1100	4630	1200
JUNE 1990	30994	1600	1040	86600	300	24900	350	29500	390
JULY 1990	1616	7490	5140	22400	1700	7610	1600	6970	1900
AUG. 1990	8567	1840	1180	27300	330	7630	410	9450	440
SEPT 1990	953.3	3370	2240	5770	700	1800	730	1880	830
TOTAL	57498.04	**	**	211000	**	62300	**	71100	**
WTD.AVG.	158	2090	1360	**	400	**	460	**	510

BRAZOS RIVER MAIN STEM

08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
EQUIVALENT LEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6940	6220	8370	7440	6690	2400	6920	3680	1680	9730	2860	5810
2	7180	6470	8350	7450	7460	1810	6960	3750	1060	9730	2210	7050
3	7200	6870	7770	8370	7820	1770	6960	3800	1250	9750	2140	7090
4	7380	7260	7840	8390	8290	1770	7160	3600	1680	9740	2140	7090
5	7370	7280	7930	8400	8840	1870	7900	3630	3120	9720	1820	7090
6	7520	7970	7580	8390	8870	1900	7900	3660	3160	e9730	1480	7300
7	7510	7970	7630	8380	8850	2480	7880	3690	3590	e9740	1460	7290
8	7520	7960	8320	8410	8840	2500	7860	3740	3580	e9770	1380	7430
9	7600	7980	8140	8420	8830	3600	7870	5690	6310	e9780	1360	7430
10	7590	8000	7910	8560	8840	3200	7510	5760	5890	e9790	2150	7880
11	7890	7990	7900	8530	8000	2600	7510	5770	6300	e9780	2170	7880
12	7900	e8200	7880	8500	7950	2540	e7550	5770	6310	e7080	2800	e7890
13	7960	e8500	8170	8540	7940	2090	e7580	6900	6400	7060	3490	e7900
14	7960	e8700	8080	8570	7970	2080	2730	6930	6470	7040	3670	e7910
15	8080	8960	6800	8580	7960	2090	2700	7200	6720	9750	2560	e7900
16	8080	e8800	7210	8500	8000	2100	2710	7480	6730	10000	1130	6060
17	8080	e8600	6840	8460	8530	2260	2750	7500	5730	10500	910	5250
18	8100	e8400	e6880	5850	8520	3400	1260	7760	5690	10000	1110	4100
19	8330	8230	e6940	1900	9050	5410	1150	7770	7210	9810	1310	4000
20	8330	e8110	e7000	1640	8530	5430	1570	8630	7630	8500	e1490	1340
21	8550	8050	e7080	1740	8560	5430	1980	8690	8650	8800	1780	1220
22	8560	8060	e7160	1790	9080	5420	2940	8780	8710	e9000	3000	1210
23	8600	8080	e7200	1840	9540	5420	2960	8930	8730	e8200	3010	1210
24	8590	8460	e7260	2940	10000	5410	2980	9070	7950	e7100	3330	3290
25	8360	8480	e7320	3350	10100	5910	2970	9080	8230	e7400	3310	3330
26	8370	8500	e7380	3370	7880	5930	4050	9080	9820	e7200	4640	4230
27	6250	8420	e7420	4050	4200	5910	4090	9070	9850	e7100	4670	4250
28	1640	8430	7490	6610	3400	5910	4560	9060	9850	e7700	5000	7050
29	1880	8410	7480	6130	---	6720	e3150	9080	9870	e8100	5340	7040
30	4770	8420	7490	6120	---	6740	3610	9070	9850	e8000	5480	7050
31	4720	---	7440	6530	---	6850	---	e9080	---	e3610	5490	---
MEAN	7250	8060	7560	6310	8160	3840	4860	6830	6270	8680	2730	5720

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	14.0	13.0	10.0	13.0	13.0	18.0	13.0	19.0	36.0	28.0	34.0
2	28.0	14.0	15.0	10.0	12.0	16.0	22.0	14.0	18.0	37.0	30.0	33.0
3	27.0	20.0	14.0	11.0	10.0	15.0	25.0	16.0	21.0	37.0	25.0	33.0
4	28.0	21.0	13.0	11.0	15.0	18.0	26.0	19.0	26.0	37.0	27.0	34.0
5	27.0	22.0	13.0	10.0	12.0	15.0	24.0	21.0	31.0	37.0	27.0	33.0
6	26.0	21.0	14.0	11.0	13.0	---	22.0	25.0	28.0	37.0	28.0	32.0
7	27.0	19.0	12.0	10.0	16.0	15.0	20.0	25.0	30.0	35.0	26.0	33.0
8	28.0	14.0	12.0	13.0	15.0	11.0	20.0	27.0	31.0	35.0	28.0	34.0
9	27.0	15.0	14.0	14.0	12.0	21.0	21.0	26.0	31.0	36.0	29.0	33.0
10	29.0	---	14.0	12.0	14.0	17.0	22.0	28.0	32.0	37.0	32.0	32.0
11	28.0	21.0	5.0	10.0	16.0	14.0	21.0	30.0	33.0	37.0	34.0	33.0
12	27.0	---	1.0	8.0	14.0	16.0	22.0	30.0	33.0	---	33.0	32.0
13	26.0	---	11.0	3.0	11.0	16.0	22.0	31.0	35.0	33.0	32.0	31.0
14	16.0	---	12.0	10.0	9.0	15.0	22.0	31.0	34.0	32.0	26.0	31.0
15	26.0	---	2.0	12.0	9.0	15.0	22.0	32.0	35.0	29.0	30.0	31.0
16	24.0	---	.0	15.0	10.0	11.0	28.0	31.0	35.0	28.0	27.0	29.0
17	22.0	---	6.0	12.0	14.0	14.0	19.0	26.0	36.0	30.0	28.0	28.0
18	13.0	---	---	10.0	15.0	15.0	20.0	29.0	36.0	30.0	31.0	28.0
19	16.0	22.0	---	8.0	13.0	13.0	11.0	31.0	35.0	31.0	32.0	29.0
20	19.0	---	---	5.0	12.0	18.0	17.0	32.0	33.0	29.0	---	28.0
21	22.0	22.0	---	10.0	11.0	18.0	21.0	29.0	33.0	24.0	33.0	27.0
22	15.0	23.0	---	12.0	12.0	20.0	22.0	32.0	32.0	---	30.0	27.0
23	25.0	20.0	---	9.0	13.0	12.0	24.0	30.0	35.0	---	30.0	28.0
24	26.0	18.0	---	10.0	14.0	10.0	22.0	31.0	36.0	---	33.0	28.0
25	25.0	16.0	---	10.0	18.0	7.0	24.0	30.0	36.0	---	33.0	29.0
26	24.0	14.0	---	11.0	20.0	10.0	24.0	29.0	36.0	---	34.0	28.0
27	17.0	14.0	---	9.0	13.0	11.0	24.0	30.0	36.0	---	35.0	28.0
28	20.0	13.0	2.0	12.0	11.0	14.0	25.0	28.0	36.0	---	34.0	25.0
29	16.0	11.0	3.0	10.0	---	13.0	24.0	29.0	36.0	---	32.0	24.0
30	14.0	10.0	5.0	14.0	---	16.0	17.0	30.0	36.0	---	33.0	23.0
31	14.0	---	8.0	12.0	---	20.0	---	33.0	---	---	33.0	---
MEAN	22.9	17.3	9.0	10.5	13.1	14.6	21.7	27.4	32.1	33.3	30.4	29.9

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.--51 years (water years 1940-90), 105 ft³/s (76,070 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 1	1100	*28,000	a*11.59	June 4	1700	13,200	a8.79

a From floodmark.

Minimum daily discharge, 0.05 ft³/s Oct. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.10	.10	.12	e.15	1.6	87	e22	95	5700	e32	83	4.4
2	.10	.10	.15	.15	1.8	42	124	437	9250	22	76	e4.0
3	.12	.12	e.12	.12	1.8	19	23	234	4960	19	56	e3.6
4	.15	.12	.12	.12	e1.4	e13	12	109	6290	18	282	4.4
5	.15	e.12	.12	.12	1.0	12	9.2	78	2580	17	e331	9.2
6	.15	.12	.10	.12	.89	9.2	9.2	e40	609	15	132	13
7	.12	.12	.10	e.12	.76	7.8	10	24	458	13	73	10
8	e.12	.12	.09	.12	.76	5.9	e7.1	20	390	e11	73	9.2
9	e.15	.10	.09	.10	1.0	7.1	5.4	17	296	9.2	58	e8.5
10	.18	.10	e.09	.10	.76	89	6.5	9.2	e240	7.8	46	7.8
11	.12	e.10	.10	.12	e.65	232	2.6	14	207	7.1	40	7.1
12	.09	e.12	.10	.15	.89	140	2.3	15	191	4.9	e27	7.1
13	.05	.15	.09	.12	1.0	124	2.6	e15	169	4.9	22	7.1
14	.07	.15	.10	e.12	.89	118	59	15	149	8.5	48	7.1
15	e.10	.15	.10	e.15	.76	67	e34	16	139	e7.8	48	7.1
16	.12	.12	.09	.15	.89	38	18	18	127	7.8	29	e8.5
17	.15	.10	e.06	.18	1.0	26	94	13	e95	8.5	34	10
18	.12	.10	.07	.21	e1.0	e17	671	11	76	9.2	31	14
19	.12	e.15	.09	385	e1.2	11	789	8.5	76	11	e29	13
20	.10	.21	.09	110	1.6	9.2	710	e8.5	76	9.2	29	93
21	.10	.15	.09	e48	5.9	5.9	e451	7.8	76	4.9	27	82
22	e.12	.12	.12	40	4.4	4.9	e177	6.5	68	e612	19	46
23	.12	e.12	.25	22	1.8	6.5	121	4.4	58	143	17	e26
24	.10	.12	e.15	13	2.0	4.9	95	4.4	e54	80	121	25
25	.10	.12	e.10	7.1	e1.6	e5.4	89	4.0	48	52	22	13
26	.10	e.10	.09	5.4	1.2	5.9	44	2.3	42	38	e16	15
27	.12	.12	.09	2.9	62	7.8	58	e2.0	44	34	12	14
28	.12	.12	.09	e3.2	268	12	38	e1.8	48	23	10	12
29	e.12	.10	.10	1.8	---	12	e34	217	50	e23	7.8	11
30	.10	.10	.12	.65	---	9.2	31	430	46	112	5.9	e10
31	.09	---	e.15	1.0	---	7.1	---	166	---	52	4.9	---
TOTAL	3.57	3.64	3.34	642.47	368.55	1155.8	3748.9	2043.4	32612	1416.8	1809.6	502.1
MEAN	.12	.12	.11	20.7	13.2	37.3	125	65.9	1087	45.7	58.4	16.7
MAX	.18	.21	.25	385	268	232	789	437	9250	612	331	93
MIN	.05	.10	.06	.10	.65	4.9	2.3	1.8	42	4.9	4.9	3.6
AC-FT	7.1	7.2	6.6	1270	731	2290	7440	4050	64690	2810	3590	996
CAL YR 1989	TOTAL	9560.67	MEAN	26.2	MAX	997	MIN	.05	AC-FT	18960		
WTR YR 1990	TOTAL	44310.17	MEAN	121	MAX	9250	MIN	.05	AC-FT	87890		

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 1989 TO SEPTEMBER 1990

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, FECA, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)	
NOV 15...	0845	0.25	73400	7.8	8.5	5.0	9.2	115	0.7	K1	26	5000	
JAN 23...	1130	13	26800	7.6	11.0	200	10.6	112	2.4	560	680	2200	
MAY 16...	1230	21	49800	8.0	25.0	2.9	8.5	132	1.4	K14	K26	3500	
AUG 21...	1315	28	27400	8.1	31.5	3.2	9.1	142	2.1	K13	44	2100	
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 TOT IT FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
NOV 15...	4900	1400	360	17000	100	44	142	3900	28000	0.40	9.0	53800	
JAN 23...	2100	650	140	5100	47	20	91	1900	8300	0.30	7.0	16700	
MAY 16...	3400	910	300	11000	81	32	115	2800	18000	1.2	6.8	35100	
AUG 21...	2000	580	160	5500	52	22	101	1700	9200	2.4	8.3	18600	
DATE		SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (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 TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS P04)
NOV 15...	50800	--	<0.010	<0.100	0.600	--	0.0	0.40	0.010	0.010	0.010	0.010	0.03
JAN 23...	16200	0.640	0.020	0.660	0.340	0.330	0.66	1.0	0.160	<0.010	0.010	0.010	0.03
MAY 16...	33100	0.090	0.010	0.100	<0.010	<0.010	--	0.50	0.030	0.030	0.010	0.010	0.03
AUG 21...	17200	--	<0.010	<0.100	0.020	0.050	0.28	0.30	0.010	<0.010	<0.010	<0.010	--
DATE		SEDI-MENT, DIS-CHARGE, SUS-PENDED (MG/L)	SEDI-MENT, SUSP. % 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)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	
NOV 15...	12	0.01	86	570	4	500	20	<10	<10	<10	50	600	
JAN 23...	280	9.8	100	<30	<1	<100	<10	<10	<1	<10	10	150	
MAY 16...	15	0.84	93	80	3	200	10	<5.0	<6	<1	1	270	
AUG 21...	10	0.76	97	40	3	<100	<10	<5.0	<4	<5	<5	120	
DATE		LEAD, DIS-SOLVED (UG/L AS Pb)	LITHIUM DIS-SOLVED (UG/L AS Li)	MANGA-NESE, DIS-SOLVED (UG/L AS Mn)	MERCURY DIS-SOLVED (UG/L AS Hg)	MOLYB-DENUM, DIS-SOLVED (UG/L AS Mo)	NICKEL, DIS-SOLVED (UG/L AS Ni)	SELE-NIUM, DIS-SOLVED (UG/L AS Se)	SILVER, DIS-SOLVED (UG/L AS Ag)	STRON-TIUM, DIS-SOLVED (UG/L AS Sr)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS Zn)	
NOV 15...		<10	130	400	0.4	4	20	2	<10	25000	430	60	
JAN 23...		<10	70	80	0.4	3	<10	3	<10	7300	80	20	
MAY 16...		<5	110	110	0.8	3	3	2	1.0	16000	330	30	
AUG 21...		<5	140	50	0.1	8	<5	2	<5.0	8300	130	20	

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 court-house 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.--Records good except those for estimated daily discharges, which are poor. There are small diversions upstream from station for irrigation and oil field operation. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08080950. Gage-height telemeter at station via Handar data collection platform.

AVERAGE DISCHARGE.--66 years (water years 1925-90), 374 ft³/s (271,000 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 4	1240	*32,600	*17.37	No other peak greater than base discharge.			
Minimum daily discharge, 12 ft ³ /s Dec. 23.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	22	17	33	95	410	150	467	6760	170	184	86
2	60	44	18	34	68	244	125	1190	18900	163	202	72
3	57	35	18	33	64	266	98	2090	28800	157	254	65
4	52	29	18	26	54	292	78	1400	30700	149	330	59
5	49	25	19	25	43	200	81	1090	6090	143	780	54
6	43	23	19	25	38	186	114	760	2620	138	519	46
7	40	19	18	24	35	187	127	578	1720	133	443	38
8	39	19	18	24	31	136	123	471	1240	129	546	84
9	36	18	19	23	32	125	111	366	978	125	407	70
10	34	18	20	23	35	169	130	270	803	124	416	56
11	31	17	17	21	30	1220	142	256	682	121	304	53
12	28	17	e16	20	24	820	108	239	594	119	243	50
13	24	17	e20	19	18	732	79	216	526	113	212	48
14	23	15	23	20	16	685	283	191	476	111	219	50
15	23	14	23	21	23	615	260	182	432	112	186	48
16	22	13	19	23	25	367	172	268	391	119	165	44
17	19	14	e16	121	23	299	285	252	359	146	1100	70
18	18	15	e20	78	22	232	1930	240	333	136	726	104
19	19	17	e19	109	21	187	9200	210	312	128	511	241
20	18	18	e18	150	24	157	8570	180	284	121	362	139
21	17	18	19	245	45	139	5450	156	265	120	288	179
22	16	16	13	301	31	128	3510	139	247	118	262	527
23	15	15	e12	273	24	117	2330	128	236	129	221	448
24	14	15	e13	204	22	105	1600	122	224	483	194	265
25	14	16	e16	171	20	98	1130	114	214	405	179	217
26	13	16	20	144	19	92	1000	105	205	267	180	184
27	14	15	48	124	22	100	762	104	210	311	174	142
28	18	14	48	109	273	108	601	99	191	264	140	121
29	18	15	32	98	---	196	525	156	182	211	122	104
30	16	17	33	84	---	421	458	3030	175	199	112	93
31	14	---	37	76	---	193	---	1930	---	197	100	---
TOTAL	869	566	666	2681	1177	9226	39532	16999	105149	5361	10081	3757
MEAN	28.0	18.9	21.5	86.5	42.0	298	1318	548	3505	173	325	125
MAX	65	44	48	301	273	1220	9200	3030	30700	483	1100	527
MIN	13	13	12	19	16	92	78	99	175	111	100	38
AC-FT	1720	1120	1320	5320	2330	18300	78410	33720	208600	10630	20000	7450

CAL YR 1989	TOTAL	76521.57	MEAN	210	MAX	8950	MIN	.09	AC-FT	151800
WTR YR 1990	TOTAL	196064	MEAN	537	MAX	30700	MIN	12	AC-FT	388900

e Estimated

BRAZOS RIVER MAIN STEM

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 TEMPERATURE: 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, 18,600 microsiemens Aug. 2, 3; minimum daily, 1,380 microsiemens May 31.

WATER TEMPERATURE: Maximum daily, 34.0°C Aug. 27-30; minimum daily, 0.0°C Dec. 16, 23, 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	
OCT 23...	1025	16	7130	7.9	13.5	870	680	210	85	
DEC 04...	1000	17	6330	7.9	4.5	860	630	210	82	
JAN 22...	1018	307	19100	7.7	5.5	1500	1400	460	95	
APR 19...	1800	10300	3450	8.4	10.5	460	370	140	28	
MAY 09...	0940	345	8290	8.5	19.5	1100	1000	290	87	
30...	1400	3850	1960	7.6	21.0	330	230	98	21	
JUN 05...	1030	5270	2170	8.0	24.5	410	300	130	21	
DATE		SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINIT 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 CONSTIT- UENTS, DIS- SOLVED (MG/L)
OCT 23...	1300	19	8.5	190	1200	1700	0.80	9.8	4630	
DEC 04...	1100	16	8.0	230	1000	1400	0.80	5.4	3940	
JAN 22...	3600	40	16	100	1300	6000	0.40	5.3	11500	
APR 19...	550	11	6.8	95	380	860	<0.10	6.8	2030	
MAY 09...	1400	19	10	49	1000	2100	0.80	3.1	4920	
30...	250	6	7.3	100	270	380	0.20	7.7	1100	
JUN 05...	270	6	7.4	110	350	400	0.40	9.5	1250	

BRAZOS RIVER MAIN STEM

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08082500 BRAZOS RIVER AT SEYMOUR, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	869	6670	4130	9690	1800	4120	840	1970	950
NOV. 1989	566	6680	4140	6330	1800	2700	840	1280	950
DEC. 1989	666	5910	3650	6560	1500	2780	750	1350	840
JAN. 1990	2681	7180	4480	32400	1900	13900	890	6430	1000
FEB. 1990	1177	8230	5160	16400	2200	7080	1000	3190	1100
MAR. 1990	9226	6040	3760	93600	1600	40000	750	18700	850
APR. 1990	39532	2640	1610	172000	670	71800	340	36600	380
MAY 1990	16999	6100	3820	175000	1600	75500	750	34300	850
JUNE 1990	105149	2900	1790	508000	760	215400	370	104200	410
JULY 1990	5361	14800	9640	140000	4300	62900	1600	23700	*
AUG. 1990	10081	6400	4010	109000	1700	47000	780	21300	890
SEPT 1990	3757	6850	4310	43800	1900	19000	830	8380	940
TOTAL	196064	**	**	1312000	**	562000	**	261000	**
WTD.AVG.	537	3980	2480	**	1100	**	490	**	560

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5960	e6940	6420	6260	9140	e4560	e3300	9120	e1500	e17800	e14500	11000
2	6220	8660	6440	6300	9140	4760	e4000	8690	1620	18000	18600	e11200
3	e6320	10100	e6440	6450	9220	8920	e7500	3190	2110	18200	18600	11400
4	6430	e7500	6330	6480	9660	e8380	e13000	6170	1880	18100	9600	e11500
5	6490	5340	6450	e6470	9870	7840	15000	7560	2170	18100	3670	12100
6	6520	5330	6530	6460	e10000	6430	15900	e7000	3580	18000	3840	12300
7	6680	5320	6430	6590	10200	5880	17900	5440	e5020	e18000	e3600	12300
8	6920	5470	6480	6670	10300	e6620	12600	e7000	6460	e18100	7740	12000
9	6900	5640	6480	6580	10100	e7360	9050	8630	e7650	18100	e7800	e12100
10	6870	5750	e5930	e6570	9920	8110	e8500	9430	8840	18000	4850	12200
11	7010	e5840	e5390	6570	e9890	2290	7890	10000	9810	17900	5380	12400
12	7030	5910	4850	6680	9850	2650	e8980	10400	10900	e17700	7530	12600
13	7000	6070	6400	6620	9960	2760	10100	e10900	e11700	17400	e7650	12500
14	e6950	e6200	5810	6580	e9690	8820	4000	11400	12400	17500	7760	12600
15	6900	6380	e6200	e6490	9410	8950	e3000	11700	e13100	17200	8390	12700
16	7020	e6420	6590	6400	8210	4930	3890	12600	13800	17200	e8800	e12900
17	e7000	6460	6360	4100	9430	5810	e3260	8980	e14300	17800	4010	11700
18	6970	6410	4510	1950	9490	e7800	e2100	e9640	14800	e15900	2610	7560
19	6760	e6420	2720	3820	9730	10300	1960	10300	e15100	14100	2660	e2000
20	6770	6430	4770	e4230	9640	10200	1660	e11800	15500	13900	4750	e1600
21	6630	6410	e4600	4640	8270	9430	1840	13200	15700	15300	5520	1470
22	e6900	6480	e4700	10900	8000	9880	2120	13400	16100	14900	5440	1520
23	7150	e6550	e7300	e8920	e8440	e10400	2140	13300	e16300	13800	6240	e3000
24	7030	6620	e7300	6920	8880	10900	2410	e13700	16500	11700	6270	6360
25	6980	6610	7340	7120	8980	10900	3410	14200	16900	12800	6990	7750
26	7010	e6630	6400	7520	9520	11200	4150	14200	e17100	e12600	e9450	8890
27	6960	e6650	6270	9020	9550	e10600	e5240	e14100	17300	12400	12100	9090
28	6520	6670	5700	e8990	4360	10000	e6300	e14200	17300	12700	e9700	10900
29	6720	6610	e5660	8950	---	e8000	7330	13800	17600	e11500	7270	e11500
30	6850	6540	5630	8960	---	e5010	8390	2000	17700	10300	10200	e12000
31	6940	---	5760	9210	---	2890	---	1380	---	10500	10900	---
MEAN	6790	6480	5940	6760	9240	7500	6560	9920	11400	15700	7820	9640

e Estimated

BRAZOS RIVER MAIN STEM

08082500 BRAZOS RIVER AT SEYMOUR, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	e17.0	12.0	12.0	11.0	e10.0	e14.0	14.0	e23.0	e26.0	e28.0	26.0
2	26.0	14.0	12.0	13.0	9.5	12.0	e16.0	12.0	21.0	26.0	28.0	e29.0
3	e27.0	15.0	e14.0	14.0	5.5	8.0	e18.0	18.0	22.0	32.0	24.0	32.0
4	29.0	e18.0	4.5	12.0	12.0	e11.0	e20.0	17.0	26.0	24.0	25.0	e32.0
5	28.0	21.0	17.0	e11.0	13.0	14.0	23.5	15.0	e24.0	25.0	25.0	33.0
6	20.0	19.0	16.0	11.0	e14.0	12.0	18.0	e17.0	24.0	25.0	26.0	32.0
7	18.0	22.0	14.0	12.0	16.0	17.0	20.0	19.0	e28.0	e24.0	e27.0	29.0
8	18.0	18.0	10.0	12.0	16.0	e17.0	12.0	e20.0	28.0	e24.0	27.0	25.0
9	27.0	19.0	12.0	15.0	12.0	e18.0	23.0	20.0	e27.0	23.0	e26.0	e25.0
10	28.0	20.0	e9.0	e14.0	6.0	18.0	e20.0	17.0	26.0	25.0	24.0	e29.0
11	27.0	e17.0	e6.0	13.0	e12.0	16.0	18.0	18.0	26.0	24.0	25.0	25.0
12	26.5	15.0	3.0	10.0	18.0	20.0	e19.0	19.0	26.0	22.0	25.0	28.0
13	27.0	22.0	6.0	10.0	18.0	21.0	19.0	e24.0	e26.0	24.0	e27.0	28.0
14	e26.0	e19.0	5.0	14.0	e11.0	15.0	16.0	28.0	25.0	21.0	30.0	32.0
15	26.0	15.0	e3.0	e16.0	5.0	11.0	e17.0	19.0	e26.0	26.0	29.0	25.0
16	23.0	e14.0	.0	18.0	10.0	18.0	19.0	25.0	26.0	22.0	e29.0	e25.0
17	e20.0	13.5	1.0	17.0	12.0	18.0	e16.0	25.0	e26.0	28.0	28.0	26.0
18	15.0	9.0	3.0	7.0	17.0	e17.0	e13.0	e23.0	27.0	e29.0	30.0	30.0
19	20.0	e14.0	3.0	8.0	18.0	17.0	10.0	22.0	e30.0	29.0	25.0	e27.0
20	20.0	18.0	2.0	e9.0	13.0	18.0	17.0	e25.0	32.0	29.0	26.0	e24.0
21	12.0	22.0	e2.0	9.0	15.0	20.0	17.0	28.0	27.0	25.0	27.0	23.0
22	e19.0	14.0	e1.0	12.0	10.0	24.0	19.0	e29.0	24.0	24.0	31.0	22.0
23	26.0	e14.0	e.0	e12.0	e15.0	e10.0	24.0	30.0	e31.0	23.0	31.0	e22.0
24	25.0	15.0	e.0	12.0	20.0	4.0	23.0	e30.0	25.0	28.0	31.0	22.0
25	23.0	17.0	4.0	9.0	10.0	4.0	20.0	30.0	32.0	28.0	32.0	24.0
26	23.0	e14.0	5.0	12.0	20.0	12.0	22.0	24.0	e31.0	e29.0	e33.0	24.0
27	23.0	e11.0	8.0	9.0	16.0	e16.0	e21.0	e25.0	30.0	30.0	34.0	28.0
28	20.0	8.0	8.0	e10.0	7.5	19.0	e20.0	e25.0	33.0	30.0	e34.0	29.0
29	23.0	10.0	e5.0	11.0	---	e17.0	20.0	26.0	33.0	e30.0	34.0	e29.0
30	17.0	10.0	3.0	12.0	---	e14.0	17.0	24.0	28.0	30.0	34.0	e29.0
31	18.0	---	4.0	7.0	---	12.0	---	27.0	---	28.0	26.0	---
MEAN	22.6	15.8	6.2	11.7	12.9	14.8	18.4	22.4	27.1	26.2	28.4	27.1

e Estimated

BRAZOS RIVER BASIN

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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.

AVERAGE DISCHARGE.--27 years (water years 1964-90), 7.52 ft³/s (0.98 in/yr), 5,450 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 19	1720	*2,680	*14.48	June 2	2240	667	11.82
May 3	1635	285	6.35				

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	2.0	120	.01	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	23	559	.01	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	234	438	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	153	52	.00	.52	.00
5	.00	.00	.00	.00	.00	.00	.07	33	15	.00	.08	.00
6	.00	.00	.00	.00	.00	.00	.11	13	5.7	.00	.06	.00
7	.00	.00	.00	.00	.00	.00	.00	6.1	2.7	.00	.03	.00
8	.00	.00	.00	.00	.00	.00	.00	3.5	1.5	.00	.02	.00
9	.00	.00	.00	.00	.00	.00	.00	2.1	1.1	.00	.02	.00
10	.00	.00	.00	.00	.00	.26	.00	1.5	.93	.00	.01	.00
11	.00	.00	.00	.00	.00	3.4	.00	1.1	.73	.00	.01	.00
12	.00	.00	.00	.00	.00	.78	.00	1.0	.62	.00	.01	.00
13	.00	.00	.00	.00	.00	.03	.00	.87	.46	.00	.00	.00
14	.00	.00	.00	.00	.00	2.3	.00	.79	.36	.00	.00	.00
15	.00	.00	.00	.00	.00	.25	12	.71	.27	.00	.01	.00
16	.00	.00	.00	.00	.00	.02	10	.65	.21	.00	.01	.00
17	.00	.00	.00	.00	.00	.00	2.4	.56	.14	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.89	.55	.08	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	1470	.59	.06	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	1200	.53	.07	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	732	.46	.06	.00	.00	.67
22	.00	.00	.00	.00	.00	.00	235	.46	.04	.01	.00	.20
23	.00	.00	.00	.00	.00	.00	37	.46	.04	.00	.00	.02
24	.00	.00	.00	.00	.00	.00	16	.45	.03	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	12	.39	.02	.00	.00	.46
26	.00	.00	.00	.00	.00	.00	12	.38	.02	.00	.00	.29
27	.04	.00	.00	.00	.00	.00	6.9	.38	.02	.00	.00	.09
28	1.7	.00	.00	.00	.21	.00	4.6	.39	.02	.00	.00	.03
29	.23	.00	.00	.00	---	.00	3.3	3.2	.01	.00	.00	.02
30	.02	.00	.00	.00	---	.00	2.2	5.4	.01	.00	.00	.01
31	.00	---	.00	.00	---	.00	---	7.3	---	.00	.00	---
TOTAL	1.99	0.00	0.00	0.00	0.21	7.04	3844.58	497.82	1199.20	0.03	0.78	1.79
MEAN	.064	.000	.000	.000	.008	.23	128	16.1	40.0	.001	.025	.060
MAX	1.7	.00	.00	.00	.21	3.4	1470	234	559	.01	.52	.67
MIN	.00	.00	.00	.00	.00	.00	.00	.38	.01	.00	.00	.00
AC-FT	3.9	.00	.00	.00	.4	14	7630	987	2380	.06	1.5	3.6
CFSM	.00	.00	.00	.00	.00	.00	1.23	.15	.38	.00	.00	.00
IN.	.00	.00	.00	.00	.00	.00	1.38	.18	.43	.00	.00	.00

CAL YR 1989	TOTAL	159.70	MEAN	.44	MAX	26	MIN	.00	AC-FT	317	CFSM	.00	IN.	.06
WTR YR 1990	TOTAL	5553.44	MEAN	15.2	MAX	1470	MIN	.00	AC-FT	11020	CFSM	.15	IN.	1.99

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.

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, 36,990 acre-ft June 3 at 1500 hours (elevation, 1,336.23 ft); minimum, 19,840 acre-feet Feb. 20 (elevation, 1,328.13 ft).

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

1,328.0	19,630	1,332.0	26,800	1,336.0	36,340
1,330.0	22,950	1,334.0	31,240	1,337.0	39,170

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22470	21370	20720	20220	20030	19980	20300	34240	34550	31460	30180	28910
2	22430	21370	20670	20210	20050	20030	20270	34550	36400	31410	30150	28840
3	22420	21370	20670	20190	20010	19980	20270	34340	36850	31340	30080	28740
4	22370	21380	20650	20140	20010	20030	20220	34160	36160	31220	30130	28740
5	22370	21330	20650	20160	20030	20000	20210	33840	35520	31190	30320	28740
6	22310	21260	20560	20160	20000	20090	20270	33710	35000	31120	30220	28700
7	22280	21260	20510	20160	20000	20080	20270	33610	34530	31030	30180	28610
8	22240	21200	20530	20140	20000	20090	20240	33590	34180	30940	30150	28530
9	22230	21170	20570	20140	20000	20080	20250	33560	33840	30870	30110	28530
10	22210	21170	20460	20130	20000	20270	20220	33240	33660	30750	30110	28490
11	22120	21130	20410	20080	20000	20270	20190	33360	33460	30660	30020	28460
12	22090	21150	20400	20050	20010	20350	20190	33220	33310	30710	29990	28400
13	22020	21170	20450	20030	19950	20370	20170	32970	32890	30500	29880	28350
14	22020	21120	20430	20050	19920	20430	20240	33070	33020	30520	29780	28380
15	21970	21020	20300	20060	19930	20430	20240	33040	32920	30450	29850	28350
16	21830	21020	20320	20060	19920	20400	20320	32850	32770	30450	29780	28270
17	21800	20940	20300	20080	19900	20380	20080	32770	32700	30430	29760	28310
18	21710	20940	20320	20110	19900	20300	24520	32720	32400	30500	29740	28290
19	21690	20930	20290	20210	19870	20320	29670	32470	32500	30450	29690	28270
20	21710	20940	20270	20210	19950	20270	32670	32550	32380	30410	29650	28350
21	21690	20990	20170	20170	19950	20300	33970	32200	32100	30390	29600	28530
22	21640	20910	20160	20210	19920	20250	33970	32330	32150	30360	29550	28440
23	21590	20890	20190	20170	19930	20190	33890	32300	32130	30340	29480	28420
24	21570	20890	20170	20130	19950	20130	33840	32280	32100	30340	29440	28380
25	21570	20860	20210	20110	19920	20090	33640	32230	31930	30320	29350	28380
26	21540	20850	20190	20130	19930	20130	33410	31960	31930	30320	29320	28400
27	21630	20800	20210	20060	19950	20170	33440	31960	31810	30270	29250	28330
28	21640	20720	20210	20030	20000	20210	33140	31080	31660	30200	29280	28270
29	21570	20720	20190	20050	---	20270	33240	32330	31590	30130	29210	28180
30	21470	20720	20190	20010	---	20300	33040	32200	31510	30060	29110	28230
31	21470	---	20210	20010	---	20300	---	32430	---	30150	28950	---
MAX	22470	21380	20720	20220	20050	20430	33970	34550	36850	31460	30320	28910
MIN	21470	20720	20160	20010	19870	19980	20170	31960	31510	30060	28950	28180
CAL YR 1989	MAX 27100	MIN 20160										
WTR YR 1990	MAX 36850	MIN 19870										

BRAZOS RIVER BASIN

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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.--28 years (water years 1963-90), 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 2	1130	*403	*9.82	No other peak greater than base discharge.			
Minimum daily discharge, 0.22 ft ³ /s Oct. 17.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.31	.27	.29	.38	.35	.55	.53	.99	34	.74	1.7	.56
2	.30	.25	.30	.38	.37	.49	.53	1.0	336	.74	1.1	.56
3	.27	.25	.29	.38	.38	.45	.52	8.2	59	.74	1.0	.56
4	.27	.27	.29	.39	.38	.44	.53	3.7	4.2	.73	1.1	.56
5	.27	.27	.29	.38	.38	.46	.53	2.0	1.9	.69	1.4	.56
6	.27	.27	.30	.38	.38	.46	.53	1.4	1.5	.71	1.7	.56
7	.27	.27	.29	.38	.38	.44	.52	1.2	1.3	.71	1.4	.59
8	.27	.27	.29	.38	.40	.43	.52	1.0	1.2	.73	.98	.60
9	.27	.26	.31	.37	.38	.43	.54	.99	1.1	.73	.90	.65
10	.27	.27	.29	.37	.38	.83	.56	.93	1.1	.74	.86	.93
11	.27	.29	.29	.37	.38	4.0	.56	.92	1.1	.73	11	.75
12	.27	.29	.29	.38	.38	3.4	.55	.91	1.0	.86	2.5	.64
13	.26	.29	.29	.38	.38	1.9	.57	.90	1.0	1.4	1.6	.61
14	.25	.29	.30	.38	.38	1.2	.77	.99	84	1.3	1.2	.62
15	.26	.26	.29	.38	.46	.84	1.6	1.0	17	1.2	.98	.63
16	.25	.24	.29	.38	.39	.73	1.5	1.1	2.3	1.1	.88	.76
17	.22	.26	.31	.41	.38	.62	.99	1.0	1.4	1.0	.81	1.1
18	.26	.26	.32	.46	.36	.55	8.3	.96	1.3	1.1	.74	.76
19	.26	.29	.33	1.7	.36	.50	162	1.0	1.5	1.1	.70	.73
20	.26	.30	.36	2.3	.37	.52	61	.99	1.3	1.1	.69	.77
21	.26	.29	.36	1.6	.40	.52	11	.94	1.3	1.0	.64	16
22	.26	.29	.37	.96	.40	.52	2.7	.99	1.2	1.0	.59	45
23	.26	.29	.40	.78	.38	.52	1.8	1.0	1.1	.97	.58	6.3
24	.27	.29	.44	.67	.37	.52	7.9	1.0	.99	.97	.56	1.6
25	.28	.29	.45	.55	.36	.52	29	1.0	.92	.96	.56	1.1
26	.26	.30	.44	.48	.36	.52	4.1	.99	.89	.92	.55	.91
27	.28	.31	.43	.41	.39	.52	2.0	.92	.85	.93	.53	.87
28	.29	.29	.43	.38	.58	.54	1.5	.90	.81	.85	.53	.83
29	.30	.29	.37	.35	---	.54	1.2	.92	.77	.79	.56	.79
30	.29	.29	.37	.35	---	.53	1.0	.92	.74	.80	.56	.78
31	.27	---	.38	.35	---	.52	---	.92	---	3.4	.56	---
TOTAL	8.35	8.35	10.45	17.81	10.86	25.01	305.35	41.68	562.77	30.74	39.46	87.68
MEAN	.27	.28	.34	.57	.39	.81	10.2	1.34	18.8	.99	1.27	2.92
MAX	.31	.31	.45	2.3	.58	4.0	162	8.2	336	3.4	11	45
MIN	.22	.24	.29	.35	.35	.43	.52	.90	.74	.69	.53	.56
AC-FT	17	17	21	35	22	50	606	83	1120	61	78	174
CFSM	.00	.00	.00	.00	.00	.00	.04	.01	.08	.00	.01	.01
IN.	.00	.00	.00	.00	.00	.00	.05	.01	.09	.01	.01	.01

CAL YR 1989	TOTAL	531.96	MEAN	1.46	MAX	39	MIN	.09	AC-FT	1060	CFSM	.01	IN.	.09
WTR YR 1990	TOTAL	1148.51	MEAN	3.15	MAX	336	MIN	.22	AC-FT	2280	CFSM	.01	IN.	.19

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 mi².

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 ft³/s (134,800 acre-ft/yr); 52 years (water years 1939-90) partially regulated, 82.6 ft³/s (59,840 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 47,000 ft³/s Sept. 8, 1932 (gage height, 27.05 ft), site then in use, from rating curve extended above 25,000 ft³/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, 12,100 ft³/s May 3 at 1530 hours (gage height, 20.28 ft); minimum daily, 1.4 ft³/s Oct. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	4.6	2.5	3.4	6.1	130	60	44	17	1.7	249	4.4
2	2.6	4.3	3.0	3.4	6.3	94	39	654	16	2.3	246	4.5
3	2.7	3.2	3.0	3.4	6.3	47	28	7650	19	2.6	330	4.3
4	2.5	3.2	2.9	3.2	6.3	23	25	6360	249	2.4	78	3.9
5	2.3	3.1	2.8	3.0	5.7	15	25	2110	114	2.5	565	4.0
6	2.4	4.6	2.9	3.0	4.9	13	25	1140	40	2.9	147	4.0
7	3.0	4.7	2.5	3.0	5.0	13	28	758	26	3.0	94	3.5
8	3.2	4.0	2.7	3.0	5.1	18	31	503	19	2.8	39	3.9
9	2.8	3.4	2.6	3.0	5.1	14	28	336	15	2.8	21	7.4
10	2.7	3.3	2.4	3.0	5.5	9.2	26	261	13	2.8	24	11
11	2.6	3.3	2.4	3.0	5.5	434	26	219	11	2.5	77	5.4
12	2.4	3.5	2.4	3.0	5.3	1480	26	177	10	2.9	58	3.8
13	2.3	4.4	2.4	3.0	4.9	229	27	152	9.6	3.2	31	3.4
14	2.0	4.5	2.4	3.0	4.9	124	52	186	8.7	2.2	18	3.5
15	1.6	4.0	2.1	3.0	4.9	85	59	189	7.8	3.0	28	3.7
16	1.4	3.3	2.1	3.2	4.9	63	41	120	13	16	24	4.2
17	2.3	2.9	2.4	8.0	4.9	41	175	86	79	31	16	10
18	2.9	2.9	2.4	17	4.7	33	69	85	32	25	17	68
19	3.1	3.2	2.4	45	5.1	26	124	75	18	31	13	100
20	3.0	3.4	2.4	36	5.4	22	252	61	12	65	12	42
21	3.2	3.1	2.4	37	6.2	19	502	50	8.6	19	9.8	146
22	3.3	4.0	2.4	20	6.3	18	362	44	6.9	13	8.7	930
23	3.0	4.0	2.3	13	6.3	17	201	42	5.4	13	7.5	945
24	3.3	3.6	2.6	10	6.3	17	227	40	5.7	8.3	6.1	145
25	3.4	3.4	2.7	9.0	6.2	16	294	37	5.2	6.7	6.3	68
26	3.3	3.0	3.0	7.7	6.3	17	420	32	4.3	5.9	6.3	40
27	3.1	3.0	3.0	6.5	6.3	17	749	28	4.0	5.2	6.0	28
28	4.2	3.0	3.0	6.1	105	17	312	23	3.3	4.9	5.4	22
29	4.6	2.8	3.0	5.7	---	19	104	21	2.9	4.9	4.4	18
30	5.5	2.4	3.2	5.4	---	71	58	19	2.1	5.0	4.3	16
31	5.7	---	3.4	5.4	---	67	---	16	---	282	4.3	---
TOTAL	92.8	106.1	81.7	281.4	255.7	3208.2	4395	21518	777.5	575.5	2156.1	2652.9
MEAN	2.99	3.54	2.64	9.08	9.13	103	146	694	25.9	18.6	69.6	88.4
MAX	5.7	4.7	3.4	45	105	1480	749	7650	249	282	565	945
MIN	1.4	2.4	2.1	3.0	4.7	9.2	25	16	2.1	1.7	4.3	3.4
AC-FT	184	210	162	558	507	6360	8720	42680	1540	1140	4280	5260
CAL YR 1989	TOTAL	8058.46	MEAN	22.1	MAX	757	MIN	.00	AC-FT	15980		
WTR YR 1990	TOTAL	36100.9	MEAN	98.9	MAX	7650	MIN	1.4	AC-FT	71610		

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 mi².

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.--28 years, 34.4 ft³/s (0.98 in/yr), 24,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/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 ft³/s and maximum (*).

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 11	0300	1,330	18.02	June 1	1440	930	15.81
Apr. 19	0430	1,350	18.14	June 2	0415	869	15.42
Apr. 20	2305	870	15.35	June 3	1010	736	14.54
Apr. 24	1640	414	11.83	Sept. 21	2130	2,080	21.38
May 2	1950	1,160	17.12	Sept. 24	0030	1,560	19.13
May 15	1100	*2,760	*23.73				

Minimum discharge, 0.04 ft³/s Oct. 1-5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.05	.17	.50	1.8	.82	18	3.9	29	358	1.9	31	.27		
2	.04	.11	.62	1.5	1.0	5.8	3.9	444	693	1.7	35	.28		
3	.04	.07	.55	1.2	1.5	5.4	3.9	778	603	1.6	21	.27		
4	.04	.05	.55	.92	1.3	13	3.5	267	110	1.4	10	.35		
5	.05	.05	.54	.69	1.2	9.7	3.2	77	43	1.4	11	.54		
6	.18	.06	.78	.64	1.2	6.6	3.0	49	28	1.3	63	.35		
7	.26	.09	.79	.72	1.2	42	2.1	37	24	1.2	28	.35		
8	.28	.10	.57	.72	1.2	9.1	1.6	29	18	1.0	7.2	.35		
9	.28	.07	.50	.64	1.2	3.0	1.7	22	15	.97	3.0	.34		
10	.25	.08	.44	.55	1.4	15	1.9	16	13	1.0	1.8	.31		
11	.23	.09	.45	.46	1.4	1030	1.8	11	11	1.2	1.3	.23		
12	.23	.10	e.40	.42	1.5	388	1.5	7.0	8.9	6.0	1.2	.25		
13	.18	.15	.54	.45	1.6	117	1.5	7.7	7.8	3.3	1.1	.17		
14	.11	.18	.60	.56	1.6	127	98	47	7.0	2.2	1.6	.16		
15	.08	.17	.54	.64	1.7	79	105	2170	6.7	2.5	6.9	.21		
16	.06	.14	e.35	.85	1.6	46	94	665	6.3	2.7	3.7	.35		
17	.04	.16	e.25	2.6	1.5	30	45	69	5.6	3.3	2.2	1.3		
18	.10	.18	e.30	5.5	1.6	20	174	48	4.4	6.4	1.6	1.6		
19	.20	.20	e.50	35	1.6	14	1070	37	4.1	4.0	3.9	1.6		
20	.21	.24	.62	25	1.7	10	723	31	3.8	2.9	2.7	3.2		
21	.16	.28	.72	20	3.1	8.0	718	22	3.7	2.5	1.4	792		
22	.12	.28	e.30	5.2	2.6	6.4	313	16	3.4	4.1	.87	1530		
23	.08	.32	e.25	2.9	2.2	5.1	152	13	3.2	5.6	.51	1370		
24	.08	.30	e.24	2.1	1.8	4.5	270	11	2.9	3.5	.31	1040		
25	.09	.26	e.50	1.6	1.6	3.8	270	12	2.7	2.4	.22	200		
26	.08	.23	.92	1.1	1.4	3.5	162	12	2.4	2.3	.38	57		
27	.07	.31	1.3	.70	1.4	4.7	119	12	2.4	2.2	.28	41		
28	1.2	.35	1.4	.60	35	5.4	61	9.9	2.3	2.0	.21	33		
29	11	.31	1.1	.53	---	4.2	42	8.4	2.1	1.8	.18	25		
30	1.9	.32	1.3	.46	---	4.3	32	7.6	1.9	3.7	.20	20		
31	.47	---	1.3	.50	---	4.5	---	6.9	---	16	.28	---		
TOTAL	18.16	5.42	19.72	116.55	76.92	2043.0	4481.5	4971.5	1997.6	94.07	242.04	5120.48		
MEAN	.59	.18	.64	3.76	2.75	65.9	149	160	66.6	3.03	7.81	171		
MAX	11	.35	1.4	35	35	1030	1070	2170	693	16	63	1530		
MIN	.04	.05	.24	.42	.82	3.0	1.5	6.9	1.9	.97	.18	.16		
AC-FT	36	11	39	231	153	4050	8890	9860	3960	187	480	10160		
CFSM	.00	.00	.00	.01	.01	.14	.31	.34	.14	.01	.02	.36		
IN.	.00	.00	.00	.01	.01	.16	.35	.39	.16	.01	.02	.40		
CAL YR 1989	TOTAL	5686.42	MEAN	15.6	MAX	621	MIN	.04	AC-FT	11280	CFSM	.03	IN.	.44
WTR YR 1990	TOTAL	19186.96	MEAN	52.6	MAX	2170	MIN	.04	AC-FT	38060	CFSM	.11	IN.	1.49

e Estimated

BRAZOS RIVER BASIN

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.

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.--Estimated daily discharges: Dec. 22, 23. Records good. There are diversions upstream from station for irrigation, municipal supply, and for oil field operations that materially affect low flow. Gage-height telemeter at station.

AVERAGE DISCHARGE.--66 years (water years 1925-90), 225 ft³/s (163,000 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 19	1220	7,680	22.26	May 16	1000	7,310	21.40
May 5	0145	*13,800	*29.69	Sept. 22	1600	11,800	28.11

Minimum discharge, 5.4 ft³/s Sept. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	6.2	15	19	21	59	66	332	411	20	27	9.6
2	14	6.1	14	16	23	112	120	3320	1990	17	160	8.5
3	14	7.3	14	15	27	197	89	9550	1590	16	178	7.5
4	14	7.8	14	15	26	163	84	11900	1310	14	349	7.4
5	14	7.0	15	14	28	120	73	12600	778	12	236	7.9
6	14	6.5	26	14	27	154	61	5810	829	12	1680	7.5
7	13	7.3	16	13	26	105	52	1600	569	13	625	6.8
8	10	7.5	15	13	25	57	42	1160	449	11	305	6.6
9	10	9.1	15	11	25	64	36	850	351	11	177	7.1
10	10	9.1	17	9.6	26	83	39	643	292	10	116	6.5
11	8.7	9.0	15	9.2	23	823	40	504	240	9.7	80	6.1
12	7.8	8.4	15	9.2	22	2240	41	442	217	14	61	6.1
13	7.3	8.1	15	9.4	22	1690	38	389	193	15	49	6.9
14	7.8	7.9	15	11	22	690	87	336	168	28	83	11
15	8.7	6.6	15	11	22	371	78	1230	146	26	78	9.8
16	8.2	6.2	12	13	22	275	226	5920	127	27	62	10
17	6.9	6.8	12	18	22	184	219	1240	114	26	55	16
18	7.3	6.9	13	20	19	132	484	491	102	23	50	17
19	6.9	7.3	15	51	19	101	7140	346	94	20	53	15
20	6.5	7.6	15	62	23	81	4300	282	124	19	39	17
21	6.5	8.4	13	92	41	63	1910	237	100	41	34	3530
22	6.9	9.1	e10	114	28	55	1530	202	80	52	30	10200
23	6.9	7.7	e9.8	86	21	49	908	178	65	80	27	5760
24	6.2	7.2	14	72	19	44	606	161	53	64	25	3450
25	6.2	9.8	15	54	18	39	846	150	45	80	23	2190
26	7.4	11	12	40	19	37	1710	139	39	45	20	1110
27	9.5	11	11	31	19	37	1250	124	34	38	18	776
28	13	13	12	27	55	44	1200	112	29	30	16	595
29	11	16	14	24	---	45	805	105	26	26	14	478
30	14	18	17	22	---	76	440	100	22	25	12	393
31	8.1	---	19	21	---	62	---	97.0	---	25	10	---
TOTAL	300.8	259.9	449.8	936.4	690	8252	24520	60550.0	10587	849.7	4692	28672.3
MEAN	9.70	8.66	14.5	30.2	24.6	266	817	1953	353	27.4	151	956
MAX	16	18	26	114	55	2240	7140	12600	1990	80	1680	10200
MIN	6.2	6.1	9.8	9.2	18	37	36	97	22	9.7	10	6.1
AC-FT	597	516	892	1860	1370	16370	48640	120100	21000	1690	9310	56870

CAL YR 1989 TOTAL 22736.14 MEAN 62.3 MAX 1230 MIN .00 AC-FT 45100
WTR YR 1990 TOTAL 140759.9 MEAN 386 MAX 12600 MIN 6.1 AC-FT 279200

e Estimated

08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX

LOCATION.--Lat 32°42'27", long 99°16'29", Shackelford County, Hydrologic Unit 12060105, on left bank at downstream side of bridge on State Highway 6, 1.7 mi southeast of Albany, and 2.0 mi upstream from Salt Prong Hubbard Creek.

DRAINAGE AREA.--39.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1962 to September 1990 (discontinued).

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,340.54 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No diversion above station.

AVERAGE DISCHARGE.--27 years (water years 1964-90), 6.45 ft³/s (2.23 in/yr), 4,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 103,000 ft³/s Aug. 4, 1978 (gage height, 23.3 ft, from floodmarks), from rating curve extended above 1,500 ft³/s on basis of slope-area measurement of 4,570 ft³/s, contracted-opening measurement of 9,520 ft³/s, and computation of flow-through-culvert, contracted-opening, and flow-over-road determination of 103,000 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood information begins in 1940. Floods of June 10, 1940, and July 18, 1953, reached stages of about 21 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 28	0600	130	a3.42	May 2	1830	*17,700	a*21.82
Mar. 11	1730	248	3.87	May 15	0230	347	4.18
Apr. 20	1300	443	4.46	Aug. 5	1030	243	3.85
Apr. 26	1100	1,610	7.09	Sept. 21	2230	111	3.32

a From floodmark.

Minimum daily discharge, 0.03 ft³/s Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.03	.12	.12	.12	.23	1.1	1.8	12	4.4	.46	1.3	.58		
2	.04	.11	.13	.12	.29	.59	1.2	2890	4.1	.46	1.1	.61		
3	.05	.11	.13	.11	.21	.47	.97	447	4.5	.44	2.4	.60		
4	.05	.10	.13	.11	.19	.44	.86	96	3.5	.42	29	.53		
5	.06	.10	.13	.11	.19	.42	.89	65	3.0	.38	73	.51		
6	.05	.11	.13	.11	.17	.42	2.4	46	2.4	.34	7.9	.51		
7	.05	.11	.13	.11	.15	.46	.99	35	2.1	.34	3.1	.51		
8	.06	.12	.13	.11	.15	.43	.97	27	2.0	.30	2.2	.49		
9	.06	.12	.13	.11	.15	.42	.97	21	1.9	.27	2.2	.48		
10	.07	.11	.13	.11	.15	.42	.86	16	1.8	.28	2.1	.51		
11	.07	.11	.13	.11	.15	.85	.81	15	1.6	.30	1.8	.49		
12	.08	.12	.13	.11	.15	18	.81	20	1.5	.67	1.7	.46		
13	.08	.12	.13	.11	.15	3.1	.81	14	1.4	.51	1.6	.46		
14	.08	.12	.13	.11	.15	1.2	1.6	11	1.3	.36	1.6	.44		
15	.08	.11	.14	.11	.15	.97	4.7	92	1.2	.46	1.5	.42		
16	.08	.11	.15	.11	.14	.91	1.9	21	1.1	3.1	1.5	.50		
17	.08	.11	.15	.22	.13	.71	1.2	12	1.1	2.1	1.3	1.3		
18	.08	.11	.15	.21	.13	.61	1.2	8.9	.99	1.3	1.2	1.6		
19	.08	.11	.15	.46	.13	.51	3.1	8.1	.89	1.1	1.2	1.3		
20	.08	.12	.15	.40	.20	.51	104	6.7	.89	1.1	1.2	1.5		
21	.08	.12	.15	.23	3.1	.51	34	5.8	.86	.82	1.1	28		
22	.08	.14	.14	.19	.38	.49	16	5.2	.67	1.5	1.1	24		
23	.08	.15	.13	.17	.26	.46	9.1	4.9	.67	2.6	1.0	3.5		
24	.09	.14	.13	.15	.24	.46	15	4.8	.63	1.5	.97	1.9		
25	.10	.13	.13	.13	.24	.46	70	4.3	.56	1.1	.87	1.6		
26	.13	.12	.13	.14	.22	.46	430	3.9	.56	.88	.78	1.4		
27	.14	.12	.13	.15	.22	.46	72	3.5	.56	.77	.73	1.4		
28	.13	.12	.13	.15	16	.46	31	3.3	.53	.70	.67	1.3		
29	.13	.12	.13	.15	---	.48	20	3.3	.49	.60	.67	1.2		
30	.13	.12	.13	.15	---	9.0	12	3.1	.46	.71	.67	1.2		
31	.12	---	.13	.15	---	4.3	---	2.9	---	2.8	.65	---		
TOTAL	2.52	3.53	4.16	4.83	24.02	134.23	841.14	3908.7	47.66	28.67	148.11	79.30		
MEAN	.081	.12	.13	.16	.86	4.33	28.0	126	1.59	.92	4.78	2.64		
MAX	.14	.15	.15	.46	16	85	430	2890	4.5	3.1	73	28		
MIN	.03	.10	.12	.11	.13	.42	.81	2.9	.46	.27	.65	.42		
AC-FT	5.0	7.0	8.3	9.6	48	266	1670	7750	95	57	294	157		
CFSM	.00	.00	.00	.00	.02	.11	.71	3.21	.04	.02	.12	.07		
IN.	.00	.00	.00	.00	.02	.13	.80	3.70	.05	.03	.14	.08		
CAL YR 1989	TOTAL	634.34	MEAN	1.74	MAX	140	MIN	.03	AC-FT	1260	CFSM	.04	IN.	.60
WTR YR 1990	TOTAL	5226.87	MEAN	14.3	MAX	2890	MIN	.03	AC-FT	10370	CFSM	.36	IN.	4.95

BRAZOS RIVER BASIN

08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1961 to September 1990 (discontinued). Sediment analyses: January 1966 to November 1974.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1962 to September 1990.

WATER TEMPERATURES: November 1962 to September 1990.

INSTRUMENTATION.--From 1970 to 1975, specific conductance was continuously recorded at this station.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 9,750 microsiemens Sept. 28-30, 1968; minimum measured daily, 408 microsiemens Sept. 16, 1974; minimum estimated daily, 149 microsiemens Aug. 4, 1978.

WATER TEMPERATURES: Maximum daily, 36.0°C June 5, 1980; minimum daily, 0.0°C Jan. 12, 1963, Jan. 29, 1966.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,650 microsiemens July 10; minimum daily, 840 microsiemens Apr. 26.

WATER TEMPERATURE: Maximum daily, 33.0°C June 26, Aug. 31; minimum daily, 1.0°C Dec. 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (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 11...	1605	0.08	2660	25.0	550	360	140	48	320
NOV 21...	1555	0.12	3370	18.5	670	440	170	59	410
JAN 22...	1530	0.18	3480	12.5	700	490	180	61	420
MAR 06...	0840	0.41	1660	14.5	340	200	90	28	190
MAY 02...	1740	5240	246	13.5	79	15	26	3.4	14
08...	1410	26	2680	22.5	590	390	170	41	300
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (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 11...		6	3.5	190	110	650	0.40	12	1400
NOV 21...		7	3.0	230	150	840	0.30	11	1780
JAN 22...		7	3.6	210	160	900	0.40	9.9	1860
MAR 06...		4	3.0	140	72	400	0.20	6.6	876
MAY 02...		0.7	3.4	64	5.1	29	<0.10	9.2	128
08...		5	4.0	200	55	650	0.50	11	1350

BRAZOS RIVER BASIN

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08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	2.52	3340	1810	12	920	6.3	110	0.8	720
NOV. 1989	3.53	3360	1820	17	930	8.8	110	1.1	720
DEC. 1989	4.16	3510	1910	21	980	11	120	1.3	760
JAN. 1990	4.83	3230	1750	23	880	12	110	1.4	700
FEB. 1990	24.02	2210	1180	77	570	37	77	5.0	480
MAR. 1990	134.23	1320	702	254	330	119	47	17	290
APR. 1990	841.14	1350	713	1620	330	754	48	109	290
MAY 1990	3908.7	1150	609	6430	280	2960	41	435	250
JUNE 1990	47.66	3900	2130	274	1100	143	130	17	840
JULY 1990	28.67	3970	2170	168	1100	88	130	10	860
AUG. 1990	148.11	1900	1020	407	490	197	66	26	410
SEPT 1990	79.30	2850	1540	329	770	164	97	21	610
TOTAL	5226.87	**	**	9600	**	4500	**	645	**
WTD.AVG.	14	1290	682	**	320	**	46	**	280

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3240	3590	3480	3400	3450	1850	2750	1840	3830	4490	3800	4160
2	3280	3390	3460	3310	3530	2270	2920	e920	3820	4510	3760	4190
3	3320	3440	3450	e3280	3510	2560	3100	e1100	3720	4530	e2560	4170
4	3370	e3430	3470	3260	3350	2460	3250	1770	e3610	4550	1360	4190
5	3330	3340	3520	3240	3180	2450	e2960	2000	3580	4580	1350	4200
6	3370	3360	e3540	3200	3050	2460	2670	2340	3590	4600	1420	4210
7	3380	3370	3570	3210	3000	2540	3120	e2480	3760	4610	1820	4200
8	3400	3340	3540	3210	3020	2630	3120	2750	3810	4630	2180	4210
9	3380	3340	3550	3230	3040	2730	3250	2820	3960	4630	2930	4230
10	3350	3320	3540	3240	3060	e2780	3190	3130	3890	4650	2950	4290
11	3360	3300	3500	3250	3490	890	3180	3050	3880	4600	3250	4160
12	3340	3200	3580	3240	3350	1340	3160	3120	3870	4520	3750	4020
13	3350	3260	3600	3220	3080	1550	3150	3310	3870	4450	3790	4010
14	3360	3200	3610	3200	2960	e1770	3140	3520	4100	4290	3830	4000
15	3380	3120	3540	3220	2900	e1990	3060	1830	e4250	4160	3920	4000
16	3390	3150	3620	3300	2870	2200	e2950	2140	4260	4080	3980	3990
17	3420	3130	3570	3520	2930	e2200	2660	e2250	4240	4070	4060	3970
18	3490	3140	3490	3490	2860	e2300	e3020	2460	4250	4060	4090	3910
19	3410	3340	3490	3470	2910	2400	3270	e2590	e4300	4050	4100	3900
20	3400	3410	3490	3490	2890	2500	e1510	2840	4370	e4050	4120	3910
21	3430	3480	3500	3500	3310	2680	1650	3240	4060	3840	4100	2400
22	3460	3420	3510	3280	3150	2780	2380	e3350	4070	3880	4060	2610
23	3470	3410	3490	3200	3140	e2800	2390	3420	4080	3310	4000	e2780
24	3480	3400	3450	2850	3130	2820	2650	3500	4230	3570	4060	2960
25	3450	3400	3470	2670	3150	2630	1920	3610	4470	3690	4100	2980
26	3120	3430	3400	2850	3190	2810	840	3690	4440	3840	4050	2970
27	3110	3470	3460	2670	3110	2800	1410	3710	4130	4090	4000	2980
28	3100	3510	3470	2660	1700	2790	1940	3820	4300	e3920	3980	2970
29	3350	3490	3450	3010	---	e2780	e2270	3920	4420	e3810	4000	2990
30	3360	3470	3500	e2980	---	2900	2590	3910	4480	3740	e4020	3350
31	3370	---	3560	3200	---	2650	---	3840	---	3700	4200	---
MEAN	3360	3350	3510	3190	3080	2400	2650	2850	4050	4180	3470	3700

e Estimated

BRAZOS RIVER BASIN

08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	12.0	9.0	14.0	12.0	10.0	18.0	18.0	26.0	26.0	26.0	31.0
2	---	14.0	10.0	12.0	9.0	13.0	19.0	---	25.0	29.0	27.0	30.0
3	22.0	15.0	15.0	---	8.0	11.0	20.0	---	29.0	29.0	---	29.0
4	24.0	---	14.0	10.0	12.0	12.0	21.0	18.0	---	31.0	25.0	30.0
5	23.0	18.0	13.0	10.0	10.0	14.0	---	22.0	30.0	30.0	26.0	30.0
6	24.0	19.0	---	9.0	12.0	16.0	16.0	20.0	30.0	25.0	22.0	29.0
7	20.0	14.0	10.0	11.0	10.0	19.0	16.0	---	29.0	28.0	24.0	28.0
8	22.0	15.0	7.0	11.0	14.0	17.0	14.0	21.0	31.0	27.0	26.0	28.0
9	23.0	13.0	13.0	10.0	14.0	20.0	17.0	23.0	32.0	31.0	27.0	27.0
10	24.0	14.0	14.0	11.0	14.0	---	18.0	19.0	30.0	32.0	28.0	27.0
11	20.0	15.0	8.0	11.0	11.0	16.0	17.0	21.0	30.0	30.0	31.0	28.0
12	22.0	18.0	7.0	9.0	12.0	20.0	20.0	20.0	30.0	24.0	29.0	28.0
13	23.0	19.0	4.0	7.0	14.0	20.0	19.0	23.0	26.0	24.0	31.0	26.0
14	24.0	19.0	9.0	12.0	12.0	---	17.0	24.0	29.0	24.0	32.0	30.0
15	19.0	15.0	4.0	9.0	10.0	---	18.0	23.0	---	21.0	26.0	27.0
16	20.0	10.0	4.0	9.0	10.0	14.0	---	27.0	32.0	23.0	25.0	25.0
17	16.0	13.0	3.0	14.0	10.0	---	15.0	---	31.0	27.0	27.0	27.0
18	17.0	11.0	2.0	12.0	12.0	---	---	24.0	32.0	29.0	26.0	24.0
19	13.0	13.0	3.0	12.0	10.0	16.0	17.0	---	---	28.0	27.0	27.0
20	13.0	15.0	5.0	9.0	13.0	15.0	---	26.0	32.0	---	28.0	25.0
21	15.0	17.0	3.0	12.0	12.0	20.0	20.0	27.0	32.0	25.0	30.0	24.0
22	13.0	15.0	2.0	13.0	10.0	19.0	20.0	---	27.0	26.0	30.0	26.0
23	14.0	12.0	1.0	14.0	10.0	---	23.0	26.0	28.0	24.0	31.0	---
24	16.0	14.0	4.0	14.0	11.0	11.0	24.0	24.0	31.0	26.0	28.0	24.0
25	18.0	12.0	5.0	10.0	12.0	8.0	20.0	30.0	25.0	25.0	31.0	25.0
26	19.0	16.0	6.0	14.0	13.0	9.0	17.0	29.0	33.0	25.0	32.0	26.0
27	16.0	15.0	10.0	10.0	15.0	12.0	20.0	29.0	29.0	24.0	30.0	23.0
28	20.0	10.0	9.0	10.0	12.0	13.0	22.0	28.0	26.0	---	31.0	24.0
29	18.0	9.0	10.0	12.0	---	---	---	29.0	31.0	---	32.0	24.0
30	15.0	11.0	9.0	---	---	13.0	17.0	30.0	30.0	25.0	---	25.0
31	12.0	---	7.0	14.0	---	17.0	---	28.0	---	26.0	33.0	---
MEAN	19.0	14.2	7.3	11.2	11.6	14.8	18.6	24.4	29.5	26.6	28.3	26.8

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.--No estimated daily discharges. Records good.

AVERAGE DISCHARGE.--24 years, 62.5 ft³/s (1.38 in/yr), 45,280 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 20	1900	2,330	10.20	May 2	2200	*27,500	a*30.69
Apr. 26	1700	11,400	21.07				

a From floodmark.

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	98	41	11	9.5	.14	.51	1.5
2	.00	.00	.00	.00	.00	37	19	14100	11	.13	1.5	1.4
3	.00	.00	.00	.00	.02	16	18	10400	12	.08	1.5	1.3
4	.00	.00	.00	.00	.01	8.6	8.0	996	11	.08	107	1.3
5	.00	.00	.00	.00	.00	4.9	5.0	477	8.9	.08	579	1.2
6	.00	.00	.00	.00	.00	3.9	13	311	7.2	.08	69	1.0
7	.00	.00	.00	.00	.00	27	7.5	224	6.4	.08	27	1.0
8	.00	.00	.00	.00	.00	32	4.7	146	5.8	.01	14	.91
9	.00	.00	.00	.00	.00	18	3.4	111	5.2	.01	9.8	.90
10	.00	.00	.00	.00	.00	9.4	3.2	85	4.6	.08	8.4	.87
11	.00	.00	.00	.00	.00	270	3.0	73	4.2	.14	7.0	.86
12	.00	.00	.00	.00	.00	373	2.1	85	4.2	.64	6.0	.94
13	.00	.00	.00	.00	.00	78	1.7	87	4.0	.19	5.5	1.0
14	.00	.00	.00	.00	.00	30	5.7	66	3.7	.29	4.8	1.0
15	.00	.00	.00	.00	.00	16	3.8	229	3.4	.48	4.4	.96
16	.00	.00	.00	.00	.00	10	9.0	107	3.0	1.8	3.4	.98
17	.00	.00	.00	.00	.00	7.4	9.8	61	2.9	2.5	3.0	1.5
18	.00	.00	.00	.00	.00	5.4	6.7	43	2.6	2.2	3.1	1.2
19	.00	.00	.00	.00	.00	4.5	7.6	37	2.4	1.7	3.1	1.1
20	.00	.00	.00	.00	.00	3.6	706	31	2.2	1.9	3.2	6.4
21	.00	.00	.00	.00	.46	3.0	608	27	2.1	1.5	2.7	10
22	.00	.00	.00	.00	.28	2.5	132	23	2.0	1.3	2.2	39
23	.00	.00	.00	.00	.00	1.9	49	20	1.8	1.6	2.3	47
24	.00	.00	.00	.00	2.5	1.5	27	18	1.6	1.3	2.6	24
25	.00	.00	.00	.00	1.6	1.4	102	16	1.5	.99	2.1	14
26	.00	.00	.00	.00	.00	1.3	6200	15	1.2	1.2	1.9	7.9
27	.00	.00	.00	.00	.00	1.2	1830	13	.79	1.2	1.9	5.4
28	.00	.00	.00	.00	45	1.6	224	11	.68	.91	1.9	4.2
29	.00	.00	.00	.00	---	2.1	84	11	.39	.69	1.9	3.4
30	.00	.00	.00	.00	---	33	32	10	.30	.64	1.7	2.5
31	.00	---	.00	.00	---	95	---	9.6	---	.63	1.5	---
TOTAL	0.00	0.00	0.00	0.00	49.87	1197.2	10166.2	27853.6	126.56	24.57	883.91	184.72
MEAN	.000	.000	.000	.000	1.78	38.6	339	899	4.22	.79	28.5	6.16
MAX	.00	.00	.00	.00	45	373	6200	14100	12	2.5	579	47
MIN	.00	.00	.00	.00	.00	1.2	1.7	9.6	.30	.01	.51	.86
AC-FT	.00	.00	.00	.00	.99	2370	20160	55250	251	49	1750	366
CFSM	.00	.00	.00	.00	.00	.06	.55	1.47	.01	.00	.05	.01
IN.	.00	.00	.00	.00	.00	.07	.62	1.69	.01	.00	.05	.01
CAL YR 1989	TOTAL	9102.28	MEAN	24.9	MAX	2190	MIN	.00	AC-FT	18050	CFSM	.04
WTR YR 1990	TOTAL	40486.63	MEAN	111	MAX	14100	MIN	.00	AC-FT	80310	CFSM	.18
											IN.	.55
											IN.	2.46

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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 was continuously recorded at this station. Since March 1982, specific conductance and water temperature are continuously recorded at this station.

REMARKS.--No estimated mean specific conductance values or interruptions in the mean temperature values. 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, 1983-90): Maximum, 37.5°C July 20, 1986; minimum, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 5,290 microsiemens Feb. 24; minimum, 341 microsiemens May 3.

WATER TEMPERATURE: Maximum, 36.0°C July 5, Aug. 28, 30; minimum, 0.0°C Feb. 3, 4.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
MAR 06...	1005	3.5	2220	13.5	480	360	120	44	270
MAY 03...	1610	4460	320	15.0	110	23	35	5.6	20
08...	1640	134	1340	22.5	370	200	110	24	120
JUN 14...	1135	3.6	3200	28.5	680	540	170	62	370
AUG 08...	1430	12	900	28.0	200	120	56	15	89

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY 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 SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)
MAR 06...	5	5.0	120	240	490	0.30	4.0	1240
MAY 03...	0.8	4.3	87	9.9	40	0.10	12	179
08...	3	4.8	170	56	310	0.30	12	740
JUN 14...	6	5.5	140	200	860	0.40	8.1	1760
AUG 08...	3	5.3	79	45	200	<0.10	9.1	467

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
NOV. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
DEC. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
JAN. 1990	0.00	*	*	0.00	*	0.00	*	0.00	*
FEB. 1990	49.87	2660	1480	199	690	93	160	22	570
MAR. 1990	1197.2	1110	609	1970	270	866	69	222	250
APR. 1990	10166.2	728	397	10900	170	4650	45	1250	170
MAY 1990	27853.6	572	312	23400	130	9950	36	2690	130
JUNE 1990	126.56	2950	1640	562	770	264	180	61	620
JULY 1990	24.57	4500	2550	169	1300	84	260	18	870
AUG. 1990	883.91	1850	1020	2440	460	1090	110	271	410
SEPT 1990	184.72	2830	1580	788	740	369	170	85	600
TOTAL	40486.63	**	**	40500	**	17400	**	4620	**
WTD.AVG.	111	678	370	**	160	**	42	**	160

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SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
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	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	2310	1490	1940	1170	985	1090	655	609	634
2	---	---	---	3020	1940	2310	1180	923	1090	679	363	555
3	3120	2430	2730	3700	2950	3340	1180	1110	1150	501	341	404
4	3150	2480	2670	3900	3290	3530	1260	1140	1190	753	501	633
5	---	---	---	3700	3300	3440	1440	1200	1290	962	776	874
6	---	---	---	3330	1420	2360	1400	1350	1390	1190	962	1090
7	---	---	---	2100	1460	1780	1570	1400	1470	1270	1170	1220
8	---	---	---	1600	1480	1550	1570	1510	1540	1400	1270	1330
9	---	---	---	1570	1370	1460	1560	1530	1540	1550	1360	1460
10	---	---	---	1370	1210	1330	1670	1580	1610	1720	1510	1560
11	---	---	---	2000	443	1160	1800	1670	1730	1840	1580	1670
12	---	---	---	807	485	566	1980	1800	1880	2210	1910	2030
13	---	---	---	607	546	582	2010	1980	1990	2040	1730	1930
14	---	---	---	709	607	665	2010	1420	1790	1980	1700	1830
15	---	---	---	731	709	722	2080	1930	2000	2230	1130	1780
16	---	---	---	793	731	757	2090	1940	2000	1220	1050	1110
17	---	---	---	774	753	763	2070	1890	1980	1410	1200	1310
18	---	---	---	817	754	783	2080	2030	2060	1540	1410	1480
19	---	---	---	940	837	870	2040	1970	2020	1690	1540	1610
20	---	---	---	941	880	906	1970	679	1440	1800	1690	1730
21	4100	1320	3400	923	902	915	769	723	740	1930	1820	1850
22	3360	1780	2630	1010	923	964	815	769	787	2060	1930	1960
23	---	---	---	1030	1010	1020	861	793	823	2100	2040	2060
24	5290	2940	4160	1130	1030	1080	885	839	868	2230	2100	2150
25	---	---	3500	1240	1130	1170	911	886	899	2300	2210	2240
26	---	---	---	1370	1220	1270	956	512	712	2410	2300	2330
27	---	---	---	1430	1370	1410	512	424	458	2430	2350	2390
28	3010	1740	2540	1450	1410	1440	538	469	502	2520	2410	2470
29	---	---	---	1520	1290	1400	584	538	550	2520	2460	2490
30	---	---	---	1500	1080	1320	631	584	600	2550	2480	2510
31	---	---	---	1360	1170	1250	---	---	---	2640	2550	2590
MONTH	5290	1320	3090	3900	443	1420	2090	424	1310	2640	341	1650

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	2620	2150	2570	4320	4120	4200	4520	4400	4480	2860	2730	2790
2	2690	2560	2630	4360	4140	4260	4540	4440	4490	2920	2760	2820
3	2690	2590	2650	4400	4180	4270	4540	4440	4520	2960	2840	2880
4	2700	2590	2670	4460	4260	4360	3240	2120	2510	2980	2830	2910
5	2700	2590	2640	4660	4400	4490	3220	640	1900	3010	2890	2960
6	2790	2680	2720	4680	4420	4540	1240	800	916	3060	2960	3010
7	2900	2770	2830	4680	4420	4520	940	840	894	3130	3000	3070
8	2930	2840	2890	4780	4460	4610	1040	900	955	3170	3050	3110
9	2970	2820	2920	4700	4500	4580	1150	984	1070	3180	3020	3080
10	3000	2910	2950	4780	4600	4680	1410	1140	1210	3390	3070	3190
11	3080	2930	2990	4880	4680	4790	1450	1260	1370	3430	3190	3320
12	3090	3000	3050	5240	4540	4910	1500	1330	1370	3440	3200	3300
13	3200	3090	3120	5100	4740	4880	1530	1420	1490	3440	3240	3300
14	3260	3160	3200	5060	4760	4880	1670	1480	1550	3410	3300	3340
15	3300	3200	3240	5020	4760	4870	1780	1570	1650	3420	3280	3360
16	3360	3260	3290	4920	4360	4600	1900	1670	1780	3470	3340	3410
17	3400	3200	3330	4500	4360	4420	1970	1760	1880	3410	3250	3320
18	3480	3340	3400	4500	4420	4460	2070	1880	1970	3470	3330	3400
19	3540	3400	3470	4520	4420	4480	2100	1950	2030	3570	3390	3460
20	3580	3460	3510	4520	4440	4500	2170	2070	2140	3480	3110	3280
21	3620	3500	3560	4540	4460	4510	2210	2150	2180	3120	1880	2680
22	3700	3560	3620	4540	4300	4480	2310	2180	2250	3010	2470	2760
23	3780	3540	3640	4480	4400	4450	2470	2230	2340	2420	2030	2240
24	3860	3700	3760	4500	4400	4450	2480	2310	2380	3190	2400	2950
25	3980	3740	3820	4480	4420	4470	2530	2370	2460	3700	3210	3480
26	4060	3800	3900	4480	4360	4440	2590	2460	2520	3730	3510	3610
27	4120	3900	3970	4480	4360	4430	2630	2520	2570	3510	3100	3220
28	4180	3920	4030	4520	4420	4460	2680	2570	2610	3160	3060	3100
29	4260	3960	4070	4540	4440	4480	2740	2630	2680	3190	3060	3120
30	4340	4080	4170	4540	4480	4510	2790	2660	2730	3460	3160	3250
31	---	---	---	4520	4440	4490	2790	2720	2750	---	---	---
MONTH	4340	2150	3290	5240	4120	4530	4540	640	2180	3730	1880	3120

[illegible]

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WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	7.5	6.5	7.0	14.5	11.5	13.0	18.0	16.0	17.0
2	---	---	---	9.0	5.5	7.0	16.5	12.0	14.5	15.5	9.5	12.0
3	8.5	.0	2.5	11.5	6.0	8.5	19.0	13.0	16.0	15.0	11.0	13.0
4	12.5	.0	1.5	19.5	7.0	12.0	21.5	15.0	18.0	15.5	14.0	15.0
5	---	---	---	14.5	9.5	12.5	22.5	16.5	19.0	17.5	14.5	16.0
6	---	---	---	15.0	12.0	14.0	17.5	13.5	15.5	19.5	16.5	17.5
7	---	---	---	16.0	13.5	14.5	18.5	11.5	15.0	21.0	17.5	19.0
8	---	---	---	18.0	13.0	15.0	16.5	13.5	15.0	22.5	19.5	21.0
9	---	---	---	18.5	15.0	16.5	18.0	14.0	16.0	22.5	21.5	22.0
10	---	---	---	18.0	16.5	17.0	18.5	14.5	16.5	22.0	20.5	21.5
11	---	---	---	17.5	14.0	16.5	21.0	13.0	16.5	21.5	20.0	20.5
12	---	---	---	18.0	16.0	17.0	19.5	14.5	17.0	23.5	20.0	21.5
13	---	---	---	19.5	17.5	18.5	18.0	16.5	17.5	24.5	21.5	23.0
14	---	---	---	19.5	16.5	18.0	23.5	15.5	19.0	25.0	22.5	23.5
15	---	---	---	19.0	15.0	17.0	25.0	18.5	21.5	25.5	23.0	24.5
16	---	---	---	19.0	14.5	16.5	25.5	20.0	22.5	27.0	24.0	25.5
17	---	---	---	19.0	13.0	16.0	22.0	17.0	19.5	26.0	24.0	25.0
18	---	---	---	18.0	13.5	16.0	17.0	14.5	15.5	26.5	24.0	25.0
19	---	---	---	18.0	12.5	15.0	16.5	14.0	15.0	28.0	24.5	26.0
20	---	---	---	16.0	11.0	14.0	16.0	15.0	15.5	28.5	25.0	26.5
21	12.5	3.0	7.5	17.5	12.5	15.0	17.5	15.5	16.5	27.0	24.5	26.0
22	11.0	.5	4.5	22.5	14.5	18.5	20.5	17.5	19.0	28.5	24.5	26.5
23	---	---	---	23.0	16.0	19.5	22.5	20.0	21.0	29.5	24.5	27.0
24	21.0	.5	10.0	15.5	7.0	10.5	24.5	20.5	22.5	29.0	25.5	27.0
25	21.0	1.0	12.0	7.0	5.5	6.5	22.5	20.5	21.5	29.5	25.5	27.5
26	---	---	---	9.5	5.0	7.0	21.0	17.0	18.0	30.5	26.5	28.5
27	---	---	---	8.5	8.0	8.5	18.0	17.0	17.5	30.0	27.0	28.5
28	11.5	8.0	9.0	14.5	8.5	11.5	20.0	17.5	18.5	29.0	26.0	27.0
29	---	---	---	14.5	11.5	13.5	22.0	19.0	20.5	28.5	25.5	27.0
30	---	---	---	11.5	9.0	10.5	21.5	18.0	19.5	31.0	25.5	28.0
31	---	---	---	11.5	9.5	10.5	---	---	---	31.5	26.5	28.5
MONTH	21.0	.0	7.0	23.0	5.0	13.5	25.5	11.5	18.0	31.5	9.5	23.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	29.0	26.0	27.0	34.0	30.5	32.0	31.5	29.0	30.0	34.0	30.5	32.0
2	27.5	25.0	26.0	33.5	30.5	32.0	31.5	29.0	30.0	33.5	29.5	31.0
3	31.5	25.0	27.5	33.5	30.5	32.0	31.0	29.0	30.0	32.5	29.5	31.0
4	32.0	26.5	28.5	33.5	30.5	32.0	29.0	26.5	28.0	33.5	29.0	31.0
5	31.5	28.0	30.0	36.0	30.5	32.5	29.0	26.0	27.5	32.5	29.0	31.0
6	31.0	27.0	29.0	33.0	31.0	32.0	28.0	26.5	27.0	33.5	29.5	31.0
7	31.0	27.5	29.0	32.5	30.0	31.5	29.0	26.5	27.5	32.0	29.5	31.0
8	31.0	26.5	28.5	31.5	29.5	30.5	30.5	26.5	28.5	31.0	28.5	30.0
9	32.0	27.0	29.0	32.0	29.5	30.5	31.5	27.5	29.0	29.5	28.0	28.5
10	32.5	28.5	30.0	33.0	30.0	31.5	33.5	28.5	30.5	32.5	27.5	29.5
11	32.0	28.5	30.0	34.5	30.5	32.0	33.0	29.0	30.5	31.5	27.5	29.5
12	32.5	28.5	30.0	35.5	30.0	32.5	32.5	28.5	30.5	30.0	27.0	28.5
13	32.0	27.5	29.5	31.5	29.5	30.5	33.0	29.0	31.0	30.0	27.0	28.5
14	32.0	28.0	30.0	33.5	28.0	30.5	32.5	29.0	31.0	31.0	27.0	29.0
15	32.0	28.5	30.0	30.0	26.5	28.0	33.0	29.5	31.0	30.5	28.0	29.5
16	32.0	28.0	30.0	26.5	25.0	25.5	32.0	29.5	31.0	31.0	28.0	29.5
17	33.5	28.5	30.5	27.0	25.0	26.0	32.0	29.0	30.5	29.5	27.0	28.0
18	34.0	29.5	32.0	28.5	26.0	27.0	31.5	29.0	30.5	30.0	27.5	29.0
19	33.0	30.0	31.5	30.0	27.0	28.5	33.0	29.0	31.0	30.0	28.0	29.0
20	34.5	29.5	31.5	31.5	27.5	29.0	35.0	30.0	32.5	29.5	28.0	28.5
21	33.5	30.0	31.5	31.5	28.5	30.0	34.5	30.0	32.5	28.0	26.5	27.5
22	34.0	29.5	31.5	30.5	28.0	29.5	34.0	30.5	32.5	27.0	26.0	26.5
23	33.5	29.0	31.0	31.0	27.0	28.5	33.0	30.5	32.0	26.0	25.0	25.5
24	32.5	29.5	31.0	31.0	27.5	29.0	33.0	29.5	31.0	25.0	24.0	24.5
25	32.5	29.0	31.0	31.0	28.5	30.0	33.5	30.0	31.5	27.5	23.0	25.0
26	33.5	30.0	31.5	31.0	28.5	29.5	34.0	30.0	32.0	27.5	24.5	26.0
27	33.5	30.5	32.0	32.5	28.5	30.5	35.5	30.0	32.5	29.0	25.5	27.0
28	33.5	30.0	31.5	33.5	29.5	31.5	36.0	30.0	32.5	29.0	25.5	27.0
29	33.5	30.0	31.5	35.5	30.0	32.5	35.5	30.5	33.0	28.0	25.5	26.5
30	34.0	30.0	32.0	32.5	30.0	31.0	36.0	30.5	33.0	28.0	25.5	26.5
31	---	---	---	31.5	29.0	30.5	34.5	30.5	32.5	---	---	---
MONTH	34.5	25.0	30.0	36.0	25.0	30.0	36.0	26.0	30.5	34.0	23.0	28.5

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 mi².

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.--28 years (water years 1963-90), 26.8 ft³/s (1.30 in/yr), 19,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,000 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 26	1200	*6,160	a*22.45	May 2	1800	4,980	a20.00

a From floodmark.

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.01	e1.5	1.4	e373	e16	35	e32	.13	e.15	.00
2	.00	.00	.01	e1.3	9.8	e151	e5.4	2150	e23	.13	e.13	.00
3	.00	.00	.01	e1.3	8.8	e52	e16	2460	e4.1	.12	e.27	.00
4	.00	.00	.06	e1.1	5.3	e13	e1.7	282	e1.8	.09	e9.2	.00
5	.00	.00	e.03	e1.1	e.89	e3.7	e2.0	102	e1.5	.09	e42	.00
6	.00	.00	e.02	e1.0	e.52	2.0	e3.4	52	e1.3	.22	e83	.00
7	.00	.00	e.02	e1.0	.40	57	e1.8	e30	e1.1	.13	e8.0	.00
8	.00	.00	e.01	e.89	.25	23	e.60	e17	e.78	e.13	2.0	.00
9	.00	.00	e.01	e.89	.18	e5.9	e.34	10	e.69	e.09	.60	.00
10	.00	.00	e.01	e.78	.15	e2.8	e.25	4.2	e.69	e.09	.25	.00
11	.00	.00	e.01	e.78	.11	169	e.29	e1.5	e.60	e.09	.11	.00
12	.00	.01	.60	e.78	e.09	264	.34	e3.8	e.46	e1.7	.03	.00
13	.00	.01	1.0	.69	e.05	49	.34	e1.3	e.34	e.69	.01	.00
14	.00	.01	e.11	.69	e.04	14	7.9	e.21	.29	e.40	.01	.00
15	.00	.01	e.05	.69	e.02	e5.9	e.21	e.18	.29	e.29	.00	.00
16	.00	.01	e.03	e.60	e.01	e3.1	e7.7	e1.3	.28	e5.0	.00	.00
17	.00	.01	e.01	e30	.00	2.5	e27	e.46	.27	e2.1	.00	.00
18	.00	.01	e.01	e12	.00	2.3	e13	e.29	.25	e1.3	.01	.00
19	.00	.01	e.01	e1.6	.00	2.0	e12	e.21	.25	e.89	.01	.00
20	.00	.01	.00	e1.3	e23	2.0	e495	e.21	.22	e.78	.02	.00
21	.00	.01	.00	e1.0	e391	e1.8	e396	e.18	.17	e.78	.01	.35
22	.00	.00	e32	e.78	e160	e1.8	e121	e.18	.17	e.69	.01	.79
23	.00	.00	21	.60	e61	e1.8	e35	e.18	.10	e.69	.03	1.3
24	.00	.00	.40	.40	e21	e1.6	e12	e.15	.08	e.69	.04	2.3
25	.00	.00	e1.8	.25	e7.9	e1.6	e127	e.13	.15	e.69	.02	.40
26	.00	.00	e2.0	.15	e4.8	e1.6	e3610	e.11	.15	e.60	.01	.13
27	.00	.00	e1.8	e.09	e3.1	e1.3	e1100	e.11	.13	e.52	.01	.04
28	.00	.01	e1.8	e.04	e133	e1.3	140	e.09	.14	e.46	.00	.03
29	.00	.01	e1.6	e.02	---	e5.1	70	e.09	.13	e.40	.00	.02
30	.00	.01	e1.6	e.01	---	e23	44	e.07	.13	e.34	.00	.02
31	.00	---	e1.5	.00	---	e33	---	e.07	---	e.25	.00	---
TOTAL	0.00	0.13	67.52	63.33	832.81	1271.1	6266.27	5153.02	71.56	20.57	145.93	5.38
MEAN	.000	.004	2.18	2.04	29.7	41.0	209	166	2.39	.66	4.71	.18
MAX	.00	.01	32	30	391	373	3610	2460	.32	5.0	.83	2.3
MIN	.00	.00	.00	.00	.00	1.3	.21	.07	.08	.09	.00	.00
AC-FT	.00	.3	134	126	1650	2520	12430	10220	142	41	289	11
CFSM	.00	.00	.01	.01	.11	.15	.75	.59	.01	.00	.02	.00
IN.	.00	.00	.01	.01	.11	.17	.83	.68	.01	.00	.02	.00

CAL YR 1989	TOTAL	4641.91	MEAN	12.7	MAX	1420	MIN	.00	AC-FT	9210	CFSM	.05	IN.	.62
WTR YR 1990	TOTAL	13897.62	MEAN	38.1	MAX	3610	MIN	.00	AC-FT	27570	CFSM	.14	IN.	1.85

e Estimated

BRAZOS RIVER BASIN

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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 was 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 formerly 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 and Dec. 2, 3, 1985.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 18,000 microsiemens Dec. 17, 19; minimum, 180 microsiemens Apr. 26.

WATER TEMPERATURE: Maximum, 36.0°C June 18, 20; minimum, 1.0°C Dec. 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
NOV 21...	1130	0.01	11600	15.5	2000	1900	570	130	1800
JAN 23...	1250	0.62	1060	11.0	220	120	68	11	120
MAR 06...	1615	1.6	1080	19.0	220	130	70	12	130
MAY 02...	1145	3520	220	13.0	69	24	23	2.9	15
09...	1010	12	1560	21.0	350	190	110	18	170
JUN 14...	1440	0.31	7880	33.5	1300	1100	390	83	1100
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)
NOV 21...		18	8.5	69	660	3800	0.10	0.50	7010
JAN 23...		4	6.1	92	57	230	0.20	4.4	552
MAR 06...		4	4.6	97	55	250	0.20	7.5	587
MAY 02...		0.8	3.4	45	17	29	0.10	7.4	125
09...		4	5.4	160	80	350	<0.10	13	840
JUN 14...		13	6.5	170	420	2300	0.30	9.0	4410

BRAZOS RIVER BASIN

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
NOV. 1989	0.13	11600	7040	2.5	3700	1.3	650	0.2	*
DEC. 1989	67.52	5680	3400	619	1800	323	320	58	990
JAN. 1990	63.33	1340	763	130	380	65	78	13	230
FEB. 1990	832.81	943	539	1210	270	600	55	124	160
MAR. 1990	1271.1	639	363	1240	180	611	38	129	110
APR. 1990	6266.27	394	223	3770	110	1850	23	392	68
MAY 1990	5153.02	377	213	2970	100	1450	22	309	65
JUNE 1990	71.56	2960	1710	331	860	167	170	33	510
JULY 1990	20.57	8030	4780	266	2500	138	450	25	1400
AUG. 1990	145.93	1620	931	367	460	183	94	37	280
SEPT 1990	5.38	6040	3540	51	1800	26	340	5.0	1000
TOTAL	13897.62	**	**	11000	**	5410	**	1130	**
WTD.AVG.	38	513	292	**	140	**	30	**	88

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	13800	13700	13700	---	---	e1600
2	---	---	---	---	---	---	13900	13700	13800	---	---	e1700
3	---	---	---	---	---	---	14000	13800	13900	---	---	e1800
4	---	---	---	---	---	---	14400	14000	14200	---	---	e2000
5	---	---	---	---	---	---	14600	14200	14400	---	---	e2300
6	---	---	---	---	---	---	14700	14400	14500	---	---	e2500
7	---	---	---	---	---	---	14900	14700	14800	---	---	e2500
8	---	---	---	---	---	---	15300	15000	15100	---	---	e3000
9	---	---	---	---	---	---	15300	15100	15300	---	---	e3000
10	---	---	---	---	---	---	15500	14900	15300	---	---	e3500
11	---	---	---	---	---	---	15900	15500	15700	---	---	e3500
12	---	---	---	10400	10300	10400	16400	15800	16100	---	---	e3500
13	---	---	---	10600	10400	10500	16600	15900	16200	---	---	e4000
14	---	---	---	10800	10600	10600	16500	15900	16300	---	---	e4000
15	---	---	---	11200	10700	10900	16800	16300	16500	---	---	e4500
16	---	---	---	11300	11100	11200	17900	16900	17500	---	---	e5000
17	---	---	---	11400	11300	11400	18000	17600	17800	---	---	e1000
18	---	---	---	11500	11300	11400	17800	17300	17600	---	---	e500
19	---	---	---	11500	11400	11400	18000	17400	17700	---	---	e800
20	---	---	---	11600	11400	11500	---	---	---	---	---	e1000
21	---	---	---	11900	11500	11600	---	---	---	---	---	e1100
22	---	---	---	---	---	---	---	---	e10000	---	---	e1200
23	---	---	---	---	---	---	---	---	e700	---	---	1200
24	---	---	---	---	---	---	---	---	e1000	1480	1320	1370
25	---	---	---	---	---	---	---	---	e1200	1520	1340	1420
26	---	---	---	---	---	---	---	---	e1250	1640	1500	1570
27	---	---	---	---	---	---	---	---	e1300	1790	1660	1710
28	---	---	---	13500	13000	13300	---	---	e1350	1870	1770	1810
29	---	---	---	13600	13500	13500	---	---	e1400	2130	1870	1970
30	---	---	---	13800	13600	13700	---	---	e1450	2190	2070	2130
31	---	---	---	---	---	---	---	---	e1500	---	---	---
MONTH	---	---	---	13800	10300	11600	18000	13700	10900	2190	1320	2240

e Estimated

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	8900	664	2260	---	---	e400	2040	1640	1850	1080	920	1000
2	1510	785	1320	---	---	e700	1640	1400	1510	1120	204	464
3	1090	363	608	---	---	e900	1400	1220	1320	274	227	248
4	989	403	663	---	---	e1000	---	---	e1250	447	274	357
5	1110	1010	1060	---	---	e1050	---	---	e1500	644	448	544
6	1230	1070	1120	---	---	1120	---	---	e1850	905	665	774
7	1480	1250	1360	2680	340	750	---	---	e2500	1100	905	999
8	1890	1480	1640	1060	460	635	---	---	e3100	1360	1120	1230
9	1970	1850	1900	1040	700	842	---	---	e3600	1700	1360	1540
10	2760	1970	2360	880	700	775	---	---	e4100	2040	1720	1870
11	3090	2780	2860	1560	260	716	---	---	e4450	2240	2060	2170
12	4940	3090	4190	420	320	368	---	---	5000	2400	2200	2280
13	4950	4850	4880	480	420	442	6740	5640	6000	2660	2420	2530
14	5310	4950	5160	540	480	503	7460	1440	3210	2680	2600	2640
15	5770	5250	5390	560	520	539	2040	1200	1350	2920	2660	2770
16	8010	5960	7200	580	540	564	2180	780	1280	3240	2840	3020
17	---	---	---	620	560	591	2340	1540	1970	3600	3140	3330
18	---	---	---	660	600	621	2600	1400	1720	3580	3280	3420
19	---	---	---	700	640	661	2040	1460	1760	3860	3520	3620
20	14200	409	7050	740	680	700	2020	220	885	4080	3620	3820
21	819	184	550	780	720	742	320	240	283	4300	3960	4100
22	964	819	901	900	780	811	380	300	337	4580	4220	4320
23	1050	964	1000	1400	900	1080	460	380	411	4700	4460	4560
24	1110	1050	1070	2020	1420	1760	660	460	572	4860	4680	4760
25	1170	1110	1130	2260	2040	2160	700	620	674	5120	4800	4960
26	1200	1130	1170	2340	2240	2290	560	180	309	5460	5000	5190
27	1220	1180	1200	2520	2360	2450	340	220	275	5700	5200	5430
28	---	---	e1000	2560	2420	2490	520	340	425	5960	5440	5650
29	---	---	---	2740	2540	2630	700	520	602	6520	5320	5760
30	---	---	---	2740	2460	2650	920	700	800	6120	5320	5760
31	---	---	---	2460	2040	2250	---	---	---	6180	5800	5980
MONTH	14200	184	2360	2740	260	1140	7460	180	1830	6520	204	3070

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	6420	880	3520	13300	12600	13000	10400	9760	9940	---	---	---
2	---	---	e1030	13700	13000	13300	11400	10500	10800	---	---	---
3	---	---	e1800	14100	13500	13700	12100	11300	11600	---	---	---
4	---	---	e2300	14500	13800	14100	12100	1810	6010	---	---	---
5	---	---	e2700	14700	14100	14400	8210	1090	2240	---	---	---
6	---	---	e3300	14700	12900	14100	1180	658	845	---	---	---
7	---	---	e3900	15500	13600	14500	967	658	777	---	---	---
8	---	---	e4450	15900	15300	15500	1230	923	1080	---	---	---
9	---	---	e5000	16100	15700	15800	1840	1270	1550	---	---	---
10	---	---	e5700	16300	15700	16000	2350	1860	2070	---	---	---
11	---	---	e6200	16700	16000	16300	2450	2300	2370	---	---	---
12	---	---	e6800	16400	9930	13800	2630	2430	2530	---	---	---
13	---	---	e7200	13500	11000	11700	2970	2630	2820	---	---	---
14	---	---	7800	11900	11200	11500	3730	2990	3300	---	---	---
15	8240	7710	7950	11700	10200	11300	---	---	---	---	---	---
16	8770	8060	8350	10900	2210	6320	---	---	---	---	---	---
17	9130	8500	8760	5510	3890	4870	---	---	---	---	---	---
18	9610	8860	9130	6130	5490	5780	4720	4540	4620	---	---	---
19	9790	9150	9440	6700	6160	6370	4970	4680	4840	---	---	---
20	10200	9490	9760	7310	6640	6850	5230	4950	5080	---	---	---
21	10300	9820	10000	7530	7080	7250	5340	4980	5130	13500	3430	8670
22	10700	10000	10300	8280	6640	7410	5240	4950	5090	4480	3320	3820
23	10900	10300	10500	8340	5620	6330	5310	4560	5170	5510	4550	4990
24	11100	10500	10800	7140	6450	6780	6250	5180	5720	7940	4940	6090
25	11500	10900	11200	7560	7090	7260	6590	6230	6400	9990	8200	9110
26	11900	11100	11500	7960	7500	7670	6850	6450	6670	9970	9350	9810
27	12200	11500	11800	8500	7800	8080	7030	6610	6850	9590	9010	9340
28	12400	11800	12100	8900	8310	8530	---	---	---	9450	9120	9320
29	12700	12100	12400	9130	8670	8860	---	---	---	9470	9170	9360
30	13100	12400	12700	9210	9050	9120	---	---	---	9570	9300	9400
31	---	---	---	9930	9200	9360	---	---	---	---	---	---
MONTH	13100	880	7610	16700	2210	10500	12100	658	4730	13500	3320	7990

e Estimated

BRAZOS RIVER BASIN

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	9.5	7.5	9.0	---	---	---
2	---	---	---	---	---	---	11.0	9.0	10.0	---	---	---
3	---	---	---	---	---	---	9.0	7.0	8.0	---	---	---
4	---	---	---	---	---	---	10.0	6.0	8.5	---	---	---
5	---	---	---	---	---	---	11.5	8.5	10.0	---	---	---
6	---	---	---	---	---	---	12.0	10.0	11.0	---	---	---
7	---	---	---	---	---	---	11.0	8.0	10.0	---	---	---
8	---	---	---	---	---	---	9.0	7.0	8.0	---	---	---
9	---	---	---	---	---	---	8.5	5.5	7.0	---	---	---
10	---	---	---	---	---	---	10.5	7.5	8.5	---	---	---
11	---	---	---	---	---	---	9.0	4.5	6.5	---	---	---
12	---	---	---	17.5	14.0	15.5	5.0	2.0	4.0	---	---	---
13	---	---	---	19.0	16.5	17.5	4.5	2.5	4.0	---	---	---
14	---	---	---	19.5	18.0	18.5	6.5	3.5	5.0	---	---	---
15	---	---	---	17.5	13.5	16.0	6.0	3.0	4.5	---	---	---
16	---	---	---	13.5	11.0	12.5	4.5	1.5	3.0	---	---	---
17	---	---	---	12.5	10.0	11.5	5.0	3.5	4.5	---	---	---
18	---	---	---	13.0	11.0	12.0	4.5	3.5	4.0	---	---	---
19	---	---	---	14.5	12.5	13.5	5.5	4.5	5.0	---	---	---
20	---	---	---	16.0	12.5	14.0	---	---	---	---	---	---
21	---	---	---	17.5	15.0	16.0	---	---	---	---	---	---
22	---	---	---	---	---	---	3.5	1.0	2.5	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	16.0	11.5	13.5
25	---	---	---	---	---	---	---	---	---	11.5	8.5	10.0
26	---	---	---	---	---	---	---	---	---	10.0	7.0	9.0
27	---	---	---	---	---	---	---	---	---	12.0	9.0	10.5
28	---	---	---	12.5	9.5	11.0	---	---	---	10.5	8.0	9.5
29	---	---	---	10.0	8.5	9.0	---	---	---	9.5	5.5	8.0
30	---	---	---	10.5	9.0	9.5	---	---	---	12.0	7.0	9.0
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	19.5	8.5	13.5	12.0	1.0	6.5	16.0	5.5	10.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	14.0	12.0	13.0	---	---	---	15.5	14.0	14.5	17.5	15.5	16.5
2	13.5	11.5	12.5	---	---	---	17.0	15.0	16.0	15.5	12.5	13.5
3	11.0	9.5	10.5	---	---	---	16.5	15.0	16.0	16.5	14.0	15.0
4	11.0	8.0	9.5	---	---	---	18.0	15.5	17.0	17.0	15.5	16.0
5	12.0	8.0	10.0	---	---	---	---	---	---	18.5	15.0	17.0
6	14.5	8.5	11.0	---	---	---	---	---	---	20.5	17.0	18.5
7	14.0	8.5	11.0	17.0	15.0	16.0	---	---	---	22.0	18.0	19.5
8	16.0	11.0	13.5	18.5	14.0	16.0	---	---	---	25.0	19.5	21.5
9	15.0	14.0	14.5	21.5	17.0	19.0	---	---	---	25.0	20.5	22.5
10	16.0	11.0	14.0	20.5	19.0	19.5	---	---	---	22.0	18.5	20.5
11	15.5	10.5	13.0	19.5	17.5	18.5	---	---	---	21.0	19.0	20.0
12	16.5	11.5	14.0	19.0	17.5	18.0	---	---	---	25.5	19.5	22.0
13	16.5	14.5	15.5	19.5	18.5	19.0	19.0	17.5	18.5	26.5	20.5	23.5
14	16.0	11.0	13.5	19.5	17.5	18.5	23.5	16.5	19.5	26.0	22.0	24.0
15	12.5	10.0	11.0	17.5	15.5	16.5	26.0	18.5	21.5	28.5	23.0	25.5
16	14.0	10.0	11.5	18.0	15.5	16.5	24.5	19.5	22.0	30.0	24.5	27.0
17	---	---	---	18.0	14.5	16.5	22.0	16.5	19.0	26.5	22.5	25.0
18	---	---	---	18.0	15.0	16.5	16.5	14.5	15.0	26.5	22.5	24.5
19	---	---	---	18.0	14.0	16.0	16.5	14.0	15.0	30.5	23.5	26.5
20	15.0	13.0	14.0	17.0	13.0	15.0	17.0	16.0	16.5	30.0	24.0	26.5
21	13.5	12.5	13.0	17.5	14.0	16.0	19.0	16.5	17.5	30.5	23.0	26.0
22	13.0	12.0	12.5	20.5	16.0	18.0	22.0	18.0	19.5	30.5	22.0	26.0
23	13.5	11.0	12.5	20.5	18.0	19.0	23.5	20.0	21.5	29.5	22.5	25.5
24	14.0	11.5	13.0	17.5	12.0	14.5	24.5	20.5	22.5	30.0	23.5	26.5
25	15.0	12.5	14.0	12.0	10.5	11.0	22.5	19.5	21.0	32.0	24.5	27.5
26	16.0	13.5	15.0	12.0	10.0	11.0	20.5	17.5	18.5	32.0	25.5	28.5
27	16.0	14.5	15.5	12.5	12.0	12.0	19.0	17.5	18.0	32.5	25.5	29.0
28	15.5	13.0	14.0	16.5	12.5	14.0	20.5	17.0	18.5	29.5	24.5	26.5
29	---	---	---	16.0	15.5	15.5	23.0	19.0	21.0	29.0	22.5	25.5
30	---	---	---	15.0	13.5	14.0	21.5	18.0	19.5	33.0	24.0	27.5
31	---	---	---	14.0	13.0	13.5	---	---	---	33.5	25.0	28.5
MONTH	16.5	8.0	13.0	21.5	10.0	16.0	26.0	14.0	18.5	33.5	12.5	23.5

BRAZOS RIVER BASIN

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08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	28.0	23.5	25.0	34.0	28.0	31.0	28.5	25.5	27.0	---	---	---
2	24.0	23.0	23.5	34.0	28.0	31.0	29.0	25.5	27.5	---	---	---
3	---	---	---	34.0	27.5	31.0	28.5	25.5	27.0	---	---	---
4	---	---	---	33.5	27.5	30.5	27.5	24.5	26.5	---	---	---
5	---	---	---	33.5	27.0	30.5	28.0	24.5	26.5	---	---	---
6	---	---	---	31.0	27.5	29.5	26.5	24.5	25.5	---	---	---
7	---	---	---	33.0	26.5	29.0	27.5	23.0	25.0	---	---	---
8	---	---	---	31.0	27.0	29.0	28.0	22.5	25.5	---	---	---
9	---	---	---	32.0	26.5	29.0	30.0	23.5	27.0	---	---	---
10	---	---	---	34.0	27.0	30.0	33.0	24.5	28.5	---	---	---
11	---	---	---	35.5	27.5	31.0	32.0	25.5	28.5	---	---	---
12	---	---	---	33.5	26.5	30.0	31.0	25.5	28.0	---	---	---
13	---	---	---	31.5	24.0	28.0	32.0	25.5	28.5	---	---	---
14	---	---	---	32.0	23.5	27.5	31.5	25.0	28.5	---	---	---
15	34.0	27.5	30.5	27.0	23.0	24.5	---	---	---	---	---	---
16	34.0	27.5	30.5	23.5	20.5	22.0	---	---	---	---	---	---
17	35.0	28.0	31.0	25.0	22.0	23.5	---	---	---	---	---	---
18	36.0	27.5	31.0	29.0	23.5	25.5	31.5	27.0	29.0	---	---	---
19	35.0	27.5	31.0	31.0	24.5	27.5	33.0	26.5	30.0	---	---	---
20	36.0	27.5	31.0	32.0	25.0	28.5	34.0	27.0	30.5	---	---	---
21	34.0	27.5	30.5	31.5	26.5	29.0	33.5	26.0	29.5	25.5	23.5	25.0
22	34.0	27.0	30.0	28.5	25.5	27.0	34.0	26.0	29.5	26.0	22.5	24.0
23	33.5	26.5	30.0	27.5	23.5	25.0	31.5	26.0	28.5	26.0	20.5	23.0
24	33.0	27.0	30.0	30.5	24.0	27.0	31.0	24.5	28.0	23.0	20.0	21.5
25	34.5	28.0	31.0	31.0	25.5	28.0	32.5	26.0	29.0	27.5	19.5	23.0
26	35.5	28.5	31.5	30.5	26.0	28.0	33.0	26.0	29.5	30.0	21.0	24.5
27	34.0	28.5	31.0	33.0	26.5	29.5	34.5	25.5	29.5	27.5	22.0	24.5
28	35.0	28.0	31.0	33.0	26.5	30.0	---	---	---	26.5	22.5	24.5
29	34.0	28.5	31.0	33.0	26.5	30.0	---	---	---	26.5	22.0	24.0
30	34.0	28.0	31.0	29.5	26.5	28.0	---	---	---	27.5	23.0	24.5
31	---	---	---	28.5	25.0	27.0	---	---	---	---	---	---
MONTH	36.0	23.0	30.0	35.5	20.5	28.5	34.5	22.5	28.0	30.0	19.5	24.0

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, 347,700 acre-ft May 3 at 1100 hours (elevation, 1,184.90 ft); minimum, 215,500 acre-ft Jan. 17 (elevation, 1,175.38 ft).

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

1,175.0	211,000	1,181.0	288,300
1,178.0	247,600	1,185.0	349,300

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	231100	224000	219700	216300	217400	222100	229300	282100	315200	304600	301200	302200
2	230600	224000	219500	216400	217700	222400	229000	331300	315200	304100	301200	301900
3	230500	223900	219500	216500	217300	222600	229300	341600	314800	303700	301500	301600
4	230200	224000	219600	216200	217400	223300	229400	330700	315100	303100	303700	301300
5	230200	223400	219500	216200	217500	223200	229300	326900	315200	302800	307100	301200
6	229900	223500	219000	216200	217300	223000	229600	322900	314600	302900	307600	300900
7	229500	223400	218700	216200	217300	223400	229100	318900	314000	302400	307600	300600
8	229400	223000	218800	216200	217300	223800	228900	317300	314500	301900	307600	300000
9	229400	223000	219000	216100	217400	223700	228900	316900	314200	301500	307600	299900
10	229100	223200	218100	216000	217400	223900	228900	317000	313400	301200	307300	299500
11	228900	223200	217700	215800	217400	226600	228900	317200	313300	300200	307300	299200
12	228400	223200	218000	215700	218100	228400	229100	317300	313300	301200	306700	298900
13	228400	223300	218000	215600	218100	228500	229000	317800	312500	300500	306400	298900
14	228200	222900	217700	215600	217500	228300	235600	317500	312100	300000	305900	298900
15	228000	222200	216900	215700	217500	227900	235500	318100	311500	300200	305900	298700
16	226800	221700	217100	215600	217600	227800	235800	316600	311300	301900	305800	298400
17	226500	221500	217100	215500	217500	228000	235600	316600	310700	302100	305300	298700
18	226300	221400	216800	215600	217100	227300	235900	316700	310400	302700	304700	298700
19	226200	221500	216800	216400	216900	227300	236600	316600	310400	302500	304900	298400
20	226300	221600	216800	217000	216500	227600	242100	316400	310000	302500	304700	298400
21	226600	221900	215800	216900	219000	227600	245200	316000	309400	302500	304600	301900
22	226000	220800	216000	217600	219400	227400	246000	316000	308500	302800	304300	301900
23	225700	221000	216200	217600	219500	226800	246200	315800	308600	302800	304100	301600
24	225700	221000	216200	217000	219400	226300	246600	316000	308200	303100	304100	301600
25	225500	220600	216400	217000	219500	226500	249600	315800	307100	303100	304000	301500
26	225700	220800	216400	216500	219100	226500	272800	315400	306800	302900	304000	301500
27	225200	220000	216300	216500	219100	226600	281100	314600	306400	302800	303700	301300
28	225500	219600	216400	216400	221400	226900	282400	314500	305900	302400	303400	301200
29	225400	219800	216200	216800	---	227100	282400	314500	305200	301600	303100	300800
30	224900	219500	216200	216500	---	228500	282000	314000	305000	301200	302900	300500
31	224900	---	216400	216300	---	229100	---	313700	---	301200	302700	---
MAX	231100	224000	219700	217600	221400	229100	282400	341600	315200	304600	307600	302200
MIN	224900	219500	215800	215500	216500	222100	228900	282100	305000	300000	301200	298400
(+)	1176.17	1175.72	1175.46	1175.45	1175.88	1176.52	1180.55	1182.73	1182.15	1181.89	1181.99	1181.84
(-)	-6100	-5400	-3100	-100	+5100	+7700	+52900	+31700	-8700	-3800	+1500	-2200

CAL YR 1989 MAX 247100 MIN 214300 (Φ) -4200
WTR YR 1990 MAX 341600 MIN 215500 (Φ) +69500

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

BRAZOS RIVER BASIN

201

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 1989 TO SEPTEMBER 1990

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	HARDNESS TOTAL (MG/L AS CaCO3)	HARDNESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)
JAN										
31...	0935	1.00	1180	8.4	8.5	1.00	10.1	91	260	160
31...	0937	10.0	1180	8.4	8.5	--	10.1	91	--	--
31...	0939	20.0	1180	8.4	8.5	--	10.1	91	--	--
31...	0941	30.0	1180	8.4	8.5	--	10.1	91	--	--
31...	0943	40.0	1180	8.4	8.5	--	10.1	91	--	--
31...	0945	50.0	1180	8.4	8.5	--	10.1	91	--	--
31...	0947	58.0	1180	8.4	8.5	--	10.2	92	270	160
AUG										
23...	0845	1.00	850	8.4	28.5	1.90	6.5	88	210	100
23...	0847	10.0	850	8.4	28.5	--	6.5	88	--	--
23...	0849	20.0	850	8.4	28.0	--	6.4	86	--	--
23...	0851	30.0	854	7.9	27.0	--	4.4	58	--	--
23...	0853	40.0	854	7.5	26.0	--	2.0	26	--	--
23...	0855	50.0	854	7.4	26.0	--	0.2	3	--	--
23...	0857	64.0	848	7.4	23.0	--	0	0	200	84

DATE	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CaCO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
JAN										
31...	71	21	120	3	9.2	110	55	260	0.40	4.0
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	72	21	120	3	9.7	110	55	260	0.40	4.0
AUG										
23...	58	15	80	2	7.2	100	39	180	0.50	6.0
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	58	14	77	2	6.8	120	34	170	0.50	8.9

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (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)	IRON, DIS-SOLVED (UG/L AS Fe)	MANGANESE, DIS-SOLVED (UG/L AS Mn)
JAN									
31...	605	<0.010	<0.100	0.010	0.39	0.40	0.020	9	<1
31...	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--
31...	--	<0.010	<0.100	0.010	0.49	0.50	0.030	20	10
31...	--	--	--	--	--	--	--	--	--
31...	608	<0.010	<0.100	0.010	0.39	0.40	0.020	7	5
AUG									
23...	449	<0.010	<0.100	<0.010	--	0.40	<0.010	<3	6
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	<0.010	<0.100	<0.010	--	0.60	0.010	10	40
23...	--	--	--	--	--	--	--	--	--
23...	443	<0.010	<0.100	0.910	0.29	1.2	0.050	93	2200

BRAZOS RIVER BASIN

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324649099000501 - HUBBARD CR RES SITE P09

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)
JAN										
31...	0857	1.00	1180	8.4	8.5	0.70	10.2	92	270	160
31...	0859	10.0	1180	8.4	8.5	--	10.2	92	--	--
31...	0901	20.0	1180	8.4	8.5	--	10.2	92	--	--
31...	0903	30.0	1180	8.4	8.5	--	10.1	91	--	--
31...	0905	39.0	1180	8.4	8.5	--	10.2	92	270	160
AUG										
23...	1310	1.00	852	8.3	30.0	1.30	5.9	82	210	100
23...	1312	10.0	852	8.2	28.0	--	5.7	77	--	--
23...	1314	20.0	851	8.0	27.5	--	4.6	61	--	--
23...	1316	30.0	854	7.8	28.0	--	3.9	53	--	--
23...	1318	40.0	856	7.6	27.0	--	2.0	26	--	--
23...	1320	46.0	858	7.5	27.0	--	1.3	17	210	100

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 CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN										
31...	72	21	120	3	9.3	110	56	260	0.40	4.0
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	72	21	120	3	9.3	110	56	260	0.40	4.0
AUG										
23...	59	15	80	2	7.4	100	38	180	0.50	6.1
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	60	15	80	2	7.1	110	36	170	0.50	7.2

DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
31...	609	0.010	<0.100	0.020	0.28	0.30	0.020	6	<1
31...	--	--	--	--	--	--	--	--	--
31...	--	<0.010	<0.100	0.010	0.39	0.40	0.030	20	10
31...	--	--	--	--	--	--	--	--	--
31...	607	<0.010	<0.100	0.010	0.39	0.40	0.020	7	1
AUG									
23...	449	<0.010	0.100	0.090	0.21	0.30	0.010	6	1
23...	--	--	--	--	--	--	--	--	--
23...	--	<0.010	<0.100	0.020	0.38	0.40	0.010	10	<10
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	441	0.040	<0.100	0.180	0.32	0.50	0.020	11	400

324606099000201 - HUBBARD CR RES SITE P10

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
31...	0840	1.00	1180	8.4	8.5	10.1	91
31...	0842	10.0	1180	8.4	8.5	10.2	92
31...	0844	20.0	1170	8.4	8.5	10.2	92
31...	0846	31.0	1170	8.4	8.5	10.3	93
AUG							
23...	0750	1.00	858	8.3	28.0	6.5	88
23...	0752	10.0	859	8.2	28.0	6.3	85
23...	0754	20.0	857	7.7	26.5	3.8	50
23...	0756	30.0	859	7.5	26.5	2.4	31
23...	0758	36.0	859	7.5	26.5	2.1	28

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324514099010201 - HUBBARD CR RES SITE P11

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
31...	1353	1.00	1180	8.4	9.0	9.9	90
31...	1355	13.0	1180	8.4	9.0	9.9	90
AUG							
23...	1350	1.00	855	8.3	29.0	6.1	84
23...	1352	10.0	854	8.1	28.0	5.2	70
23...	1354	20.0	856	7.7	27.0	3.1	41
23...	1356	27.0	863	7.5	27.0	1.0	13

324301099001701 - HUBBARD CR RES SITE P12

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN										
31...	1325	1.00	1200	8.4	9.0	0.49	10.0	91	280	160
31...	1327	8.00	1220	8.4	9.0	--	10.0	91	280	180
AUG										
23...	1410	1.00	887	8.2	30.0	0.60	5.9	82	220	110
23...	1412	14.0	862	7.4	27.0	--	0.7	9	210	100

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)
JAN										
31...	79	20	120	3	8.7	120	61	260	0.30	3.0
31...	79	20	120	3	8.9	100	60	260	0.30	3.0
AUG										
23...	63	15	83	2	7.1	110	37	180	0.50	6.5
23...	60	15	80	2	7.3	110	38	180	0.60	6.8

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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
31...	622	0.010	<0.100	0.030	0.57	0.60	0.030	5	18
31...	613	0.030	<0.100	0.040	0.46	0.50	0.040	3	18
AUG									
23...	461	0.010	<0.100	0.110	0.29	0.40	0.020	34	26
23...	455	0.050	<0.100	0.190	0.41	0.60	0.040	19	440

324949098594301 - HUBBARD CR RES SITE P13

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
31...	1020	1.00	1180	8.4	8.5	10.1	91
31...	1022	10.0	1180	8.4	8.5	10.1	91
31...	1024	20.0	1180	8.4	8.0	10.1	90
31...	1026	30.0	1180	8.4	8.0	10.1	90
31...	1028	38.0	1180	8.4	8.0	10.1	90
AUG							
23...	0930	1.00	850	8.4	29.0	6.6	90
23...	0932	10.0	850	8.4	28.5	6.6	90
23...	0934	20.0	854	8.3	28.0	5.8	78
23...	0936	30.0	855	8.0	27.5	4.6	61
23...	0938	40.0	857	7.4	26.5	0.6	8
23...	0940	50.0	856	7.4	26.0	0	0
23...	0942	59.0	867	7.4	24.0	0	0

BRAZOS RIVER BASIN

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324802099021601 - HUBBARD CR RES SITE P15

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
31...	1147	1.00	1180	8.4	8.0	10.1	90
31...	1149	10.0	1180	8.4	8.0	10.1	90
31...	1151	21.0	1180	8.4	8.0	10.1	90
AUG							
23...	1020	1.00	869	8.4	28.5	6.4	87
23...	1022	10.0	869	8.4	28.5	6.2	84
23...	1024	20.0	869	7.8	27.0	3.4	45
23...	1026	30.0	885	7.5	27.0	1.2	16
23...	1028	36.0	892	7.4	27.0	0.6	8

324653099032401 - HUBBARD CR RES SITE P16

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)
JAN										
31...	1103	1.00	1190	8.4	8.5	0.55	10.2	92	270	160
31...	1105	10.0	1190	8.4	8.5	--	10.2	92	--	--
31...	1107	17.0	1190	8.4	8.5	--	10.1	91	270	160
AUG										
23...	1045	1.00	889	8.1	28.0	0.60	5.4	73	220	110
23...	1047	10.0	887	8.1	28.0	--	5.0	67	--	--
23...	1049	22.0	905	7.3	27.0	--	0.2	3	220	110

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 CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN										
31...	72	21	120	3	9.4	110	57	260	0.40	3.7
31...	--	--	--	--	--	--	--	--	--	--
31...	72	21	120	3	9.5	110	56	260	0.40	3.8
AUG										
23...	62	15	84	2	7.3	110	39	180	0.50	6.4
23...	--	--	--	--	--	--	--	--	--	--
23...	62	15	83	2	7.1	110	40	190	0.50	7.2

DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
31...	610	--	0.010	<0.100	0.010	0.49	0.50	0.030	5	2
31...	--	--	0.010	<0.100	0.010	0.39	0.40	0.030	20	10
31...	607	--	0.010	<0.100	0.020	0.38	0.40	0.030	16	2
AUG										
23...	460	--	<0.010	0.100	0.100	0.30	0.40	0.030	33	4
23...	--	--	<0.010	<0.100	0.020	0.48	0.50	0.040	20	20
23...	471	0.070	0.030	0.100	0.210	0.39	0.60	0.040	<3	420

324608099042101 - HUBBARD CR RES SITE P17

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
31...	1130	1.00	1220	8.2	9.5	9.3	86
31...	1132	10.0	1210	8.2	9.0	9.1	83
31...	1134	15.0	1210	8.1	9.0	8.8	80
AUG							
23...	1155	1.00	999	7.7	30.0	3.9	54
23...	1157	10.0	899	7.3	28.0	0.2	3
23...	1159	21.0	962	7.3	26.0	0	0

BRAZOS RIVER BASIN

205

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324541099053601 - HUBBARD CR RES SITE P18

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)	
JAN											
31...	1120	1.00	1300	8.1	9.5	0.55	9.1	84	310	190	
31...	1122	13.0	1340	8.1	9.5	--	9.0	83	330	200	
AUG											
23...	1220	1.00	954	8.0	30.5	0.50	4.9	69	230	120	
23...	1222	10.0	967	7.3	28.0	--	0	0	--	--	
23...	1224	20.0	953	7.3	26.5	--	0	0	220	120	
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- LITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN											
31...	88	23	130	3	8.7	130	75	270	0.30	3.6	
31...	92	24	130	3	8.5	130	76	280	0.30	3.7	
AUG											
23...	64	16	93	3	6.1	100	45	210	0.40	8.1	
23...	--	--	--	--	--	--	--	--	--	--	
23...	63	16	92	3	5.3	100	40	210	0.50	10	
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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
31...	674	0.190	0.010	0.200	0.130	0.67	0.80	0.030	6	12	
31...	694	0.180	0.020	0.200	0.140	0.46	0.60	0.040	5	20	
AUG											
23...	503	--	<0.010	<0.100	0.090	0.81	0.90	0.040	13	8	
23...	--	--	0.010	<0.100	0.020	0.58	0.60	0.030	80	200	
23...	500	0.070	0.030	0.100	0.610	0.59	1.2	0.080	1300	880	

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 except those for estimated daily discharges, which are fair. There are many small diversions upstream from station for municipal supply and oil field operations. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08080950. Gage-height telemeter at station.

AVERAGE DISCHARGE.--52 years, 831 ft³/s (602,100 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 21	0930	27,500	26.21	May 4	2300	*47,200	*34.27
Apr. 27	0800	22,300	24.76	June 6	2100	24,700	25.74

Minimum discharge, 33 ft³/s Jan. 14, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	245	71	44	62	144	816	894	1640	2750	333	312	214
2	228	70	44	61	147	626	570	10500	8150	319	301	189
3	215	74	46	62	141	524	456	32300	13300	306	303	164
4	201	77	48	57	119	431	420	43800	16100	287	487	146
5	192	79	52	53	107	482	353	37100	19900	272	724	133
6	175	85	52	49	92	708	564	25200	23600	263	1320	124
7	157	80	47	45	84	6010	564	18100	19600	251	2240	118
8	151	72	43	45	81	2220	397	10100	4670	237	1360	114
9	145	67	45	43	73	728	343	2860	2690	225	915	107
10	135	67	47	44	76	448	376	2030	2190	216	889	96
11	130	66	44	41	71	1910	439	1660	1850	211	685	96
12	124	65	44	36	71	8190	372	1390	1660	212	639	92
13	116	63	46	35	61	4730	331	1230	1420	220	519	85
14	109	60	47	35	54	2880	1360	1100	1200	202	435	76
15	106	50	41	36	56	2390	1490	996	1060	185	394	78
16	95	49	39	34	52	1690	722	1290	944	184	416	74
17	85	52	e38	45	51	1180	753	5340	858	219	380	103
18	84	53	e40	58	52	900	827	2930	765	239	472	120
19	84	54	44	110	52	736	11000	1050	706	239	1250	97
20	83	55	44	318	53	626	21200	843	667	236	897	99
21	82	57	e37	238	312	539	26800	722	619	213	712	4450
22	78	51	e35	177	416	462	21500	652	596	209	561	5700
23	75	51	e34	234	275	405	9700	604	547	209	473	5930
24	74	54	e35	370	155	359	4630	562	510	254	499	7680
25	74	53	45	338	108	335	4750	527	473	271	450	5040
26	69	51	51	273	83	319	16800	469	443	453	356	2760
27	69	49	54	214	64	309	21200	431	415	549	315	1660
28	73	43	51	177	777	313	8740	399	395	408	307	1200
29	79	43	50	155	---	334	3260	379	370	405	304	933
30	83	44	53	133	---	867	2250	413	350	400	268	759
31	79	---	58	118	---	1180	---	2360	---	329	233	---
TOTAL	3695	1805	1398	3696	3827	43647	163061	208977	128798	8556	19416	38437
MEAN	119	60.2	45.1	119	137	1408	5435	6741	4293	276	626	1281
MAX	245	85	58	370	777	8190	26800	43800	23600	549	2240	7680
MIN	69	43	34	34	51	309	331	379	350	184	233	74
AC-FT	7330	3580	2770	7330	7590	86570	323400	414500	255500	16970	38510	76240

CAL YR 1989	TOTAL	169368	MEAN	464	MAX	13500	MIN	19	AC-FT	335900
WTR YR 1990	TOTAL	625313	MEAN	1713	MAX	43800	MIN	34	AC-FT	1240000

e Estimated

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 July 18, 20-23, Aug. 17, 1981; minimum daily, 0.0°C Jan. 10, 11, 18, 21, Feb. 18, 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-A-TURE 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, FECA, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECA, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)	
NOV 16...	1045	49	5370	7.8	9.5	12	13.8	129	1.2	58	K27	810	
JAN 25...	1140	347	3940	8.1	8.5	15	12.2	111	1.5	490	740	750	
MAR 15...	1205	2400	1730	7.9	16.0	1000	8.6	93	2.7	1200	>1600	290	
MAY 17...	1130	5450	1790	8.0	24.0	260	6.8	85	2.0	440	320	440	
JUL 11...	1010	213	10900	8.0	33.0	8.3	9.3	141	3.5	K25	K110	1500	
AUG 23...	1100	481	4130	8.0	29.5	740	9.2	129	1.7	160	220	480	
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 TOT IT FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
NOV 16...		610	200	74	800	12	7.5	202	810	1200	0.60	9.0	3310
JAN 25...		590	200	60	550	9	7.0	153	680	830	0.40	3.8	2570
MAR 15...		200	81	20	230	6	6.5	88	200	370	0.20	8.6	1060
MAY 17...		300	100	45	180	4	5.7	140	260	300	<0.10	7.4	1070
JUL 11...		1300	390	120	1800	20	12	185	1200	3000	0.50	13	6940
AUG 23...		390	140	32	610	12	38	99	410	1000	0.30	8.4	2460
DATE		SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (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 TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
NOV 16...		3230	--	0.010	<0.100	0.060	0.080	0.34	0.40	0.020	<0.010	<0.010	--
JAN 25...		2430	1.07	0.030	1.10	0.170	0.110	0.73	0.90	0.200	0.030	0.040	0.12
MAR 15...		974	0.680	0.020	0.700	0.900	0.030	1.3	2.2	0.910	0.510	0.160	0.49
MAY 17...		987	0.660	0.040	0.700	0.170	0.100	1.0	1.2	0.360	0.090	0.040	0.12
JUL 11...		6650	--	<0.010	<0.100	0.070	0.020	0.53	0.60	0.040	<0.010	<0.010	--
AUG 23...		2300	--	<0.010	0.600	0.050	0.080	0.65	0.70	0.370	0.030	0.020	0.06
DATE		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)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 16...		27	3.6	98	<10	<1	<100	<10	<1.0	<1	1	<1	40
JAN 25...		503	471	100	--	--	--	--	--	--	--	--	--
MAR 15...		857	5550	100	100	3	140	<0.5	<1.0	<5	<3	<10	64
MAY 17...		475	6990	94	10	2	170	<0.5	<1.0	<1	<3	2	7
JUL 11...		45	26	88	--	--	--	--	--	--	--	--	--
AUG 23...		1410	1830	100	80	5	<100	<10	<1.0	2	<1	4	50

BRAZOS RIVER MAIN STEM

08088000 BRAZOS RIVER NEAR SOUTH BEND, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 16...	<1	80	50	1.2	4	1	<1	<1.0	4900	27	<10
JAN 25...	--	--	--	--	--	--	--	--	--	--	--
MAR 15...	20	19	4	0.2	<10	<10	<1	1.0	1300	<6	6
MAY 17...	<1	31	2	0.2	<10	1	<1	<1.0	1600	<6	10
JUL 11...	--	--	--	--	--	--	--	--	--	--	--
AUG 23...	<1	40	<10	<0.1	3	1	<1	<1.0	3100	36	<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 1963, monthend contents only.

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, 63,280 acre-ft May 3 at 0900 hours (gage height, 1,078.52 ft); minimum, 46,560 acre-ft Sept. 16 (gage height, 1,072.14 ft).

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

1,072.0	46,220	1,075.0	53,680	1,078.0	61,780
1,073.0	48,660	1,076.0	56,290	1,079.0	64,670
1,074.0	51,140	1,077.0	58,990		

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53170	49060	48030	47100	47930	51520	54590	54540	54520	51320	49700	47830
2	53040	49010	47980	47070	47950	51600	54360	62100	58130	51240	49650	47710
3	52920	48960	47900	47100	48000	51670	54200	59580	56340	51160	49630	47640
4	52770	48960	47930	47070	47980	51700	54070	56370	55320	51120	49600	47560
5	52610	48930	47950	47050	47980	51700	54230	55270	55040	51020	49580	47510
6	52440	48880	47900	47000	47950	54200	54780	54830	54590	50840	49550	47390
7	52280	48860	47810	47000	47980	56750	54570	54590	54310	50740	49550	47320
8	52110	48810	47730	47000	48000	55590	54330	54310	54100	50590	49380	47200
9	51980	48780	47780	46980	48050	55090	54280	54120	53860	50470	49280	47150
10	51850	48730	47730	46980	48030	54780	55640	54020	53710	50370	49230	47070
11	51670	48760	47590	46950	48030	57420	55170	53840	53530	50570	49180	46950
12	51520	48760	47540	46850	48000	56910	54780	53890	53300	50590	49110	46880
13	51340	48680	47560	46850	48030	55590	54490	53730	53150	50400	49060	46830
14	51220	48710	47510	46830	47930	55320	54380	53380	52990	50250	48960	46780
15	51070	48590	47390	46850	47930	55170	54410	53530	52740	50170	48930	46710
16	50840	48490	47420	46880	47880	54750	54460	53400	52660	50150	48810	46660
17	50640	48460	47390	47000	47880	54490	54330	53220	52590	50070	48710	46900
18	50500	48440	47340	47100	47850	54280	55190	53100	52660	50020	48680	46880
19	50320	48420	47290	47460	47880	54070	58830	52990	52540	49970	48730	46880
20	50200	48460	47320	47900	47980	53910	57990	52890	52410	49920	48680	46850
21	50070	48440	47170	47930	49030	53840	56510	52710	52310	49900	48610	48730
22	49950	48340	47150	47980	49500	53730	55430	52440	52210	49920	48510	48810
23	49800	48290	47100	47980	49550	53580	54930	52260	52080	49900	48390	48730
24	49600	48220	47120	47900	49580	53350	54850	52160	51950	49900	48390	48710
25	49450	48250	47150	47830	49580	53250	61050	52080	51830	49900	48290	48680
26	49350	48220	47150	47810	49580	53170	61250	51900	52080	49800	48250	48680
27	49380	48150	47120	47780	49580	53120	57370	51700	51880	49700	48200	48660
28	49350	48100	47150	47730	50990	53150	55660	51550	51720	49650	48050	48610
29	49330	48050	47100	47660	---	53730	55040	51440	51520	49580	48000	48560
30	49210	48000	47100	47680	---	54590	54650	52050	51390	49650	47900	48510
31	49210	---	47100	47710	---	54750	---	52080	---	49700	47850	---
MAX	53170	49060	48030	47980	50990	57420	61250	62100	58130	51320	49700	48810
MIN	49210	48000	47100	46830	47850	51520	54070	51440	51390	49580	47850	46660
(↑)	1073.22	1072.73	1072.36	1072.61	1073.94	1075.41	1075.37	1074.37	1074.10	1073.42	1072.67	1072.94
(Φ)	-4090	-1210	-900	+610	+3280	+3760	-100	-2570	-690	-1690	-1850	+660
CAL YR 1989	MAX	61530	MIN	46080	(Φ)	-1320						
WTR YR 1990	MAX	62100	MIN	46660	(Φ)	-4790						

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

BRAZOS RIVER MAIN STEM

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 Grafard, 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, 568,600 acre-ft June 10 at 1100 hours (gage height, 999.91 ft); minimum, 487,600 acre-ft Jan. 13 (gage height, 994.92 ft).

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

994.0	474,100	998.0	536,000
996.0	504,000	1,000.0	570,200

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	536700	527400	516800	491100	495000	506100	539900	548900	544200	536800	531900	532300
2	535400	526000	516300	491700	495800	507900	540400	559200	547900	536300	531800	531800
3	534500	525800	516000	492000	494900	509500	539400	556100	559900	535400	532800	530500
4	534700	525600	514700	490900	494900	510200	540000	555600	559400	535000	533600	528100
5	533700	524200	514600	491100	494600	511000	540700	554900	552300	535200	535000	527600
6	533600	524700	514700	491100	494900	514300	539900	547600	555600	535000	537000	525800
7	533100	524300	513800	490900	495000	521400	540700	543100	553300	534200	540400	524000
8	533400	523700	513200	490300	495500	532800	541700	560300	559200	534500	543200	522400
9	533400	523200	514000	489600	496400	538400	540900	559900	567200	534200	545400	522700
10	531900	523500	514900	489400	495800	539700	541000	549100	567600	534400	545200	522200
11	531100	523400	511700	488800	495900	546100	542600	548900	566000	533200	545100	521400
12	531000	523400	509400	488800	495800	554900	542700	546600	563900	533200	544600	521300
13	531000	523000	508400	487900	494400	559800	543600	542900	561300	532900	542700	520300
14	531100	523400	508600	488400	493500	558700	550800	540700	558400	532800	542200	518500
15	530800	522400	506700	488400	493200	562000	553700	540400	555100	532800	540700	520000
16	530300	520900	504300	489300	493100	562700	547100	539700	551000	533200	540900	519500
17	529700	521100	504300	489600	493400	561800	544900	542600	547600	533400	538000	520400
18	529000	520800	504300	490300	492800	560300	542000	549800	545900	533400	539000	518700
19	527700	520900	504000	492000	493200	557300	542700	550800	543400	531900	539700	517900
20	528400	520400	502500	492400	493700	554500	550600	550800	542400	532300	541000	517700
21	528200	520600	500000	492600	497900	551800	545900	549300	540000	531500	541900	531500
22	528500	520300	494900	492900	499300	549100	548100	546800	539500	532600	541400	541500
23	528200	519600	492000	493100	500400	548100	546800	545600	538900	533400	542400	547100
24	528100	518900	490500	493800	501300	546100	543600	544200	539400	533600	540900	553000
25	527900	519300	490800	492800	501000	542700	556300	542000	538500	532100	539500	553000
26	527100	519200	491500	493700	501100	541000	559600	540500	537700	532300	538000	547600
27	527300	519300	490900	493700	501600	540700	554000	539500	537300	531800	537700	546600
28	527600	517300	491500	493700	504000	540000	555400	539900	537300	531000	536300	546600
29	526800	517100	491700	493700	---	538700	547600	539400	537700	532600	535000	546800
30	527300	516600	491200	494100	---	536700	546800	538200	537700	532800	534100	545200
31	526800	---	491200	494100	---	538200	---	539000	---	533200	532900	---
MAX	536700	527400	516800	494100	504000	562700	559600	560300	567600	536800	545400	553000
MIN	526800	516600	490500	487900	492800	506100	539400	538200	537300	531000	531800	517700
(↑)	997.43	996.80	995.16	995.35	996.00	998.13	998.64	998.18	998.10	997.83	997.81	998.55
(Φ)	-10700	-10200	-25400	+2900	+9900	+34200	+8600	-7800	-1300	-4500	-300	+12300

CAL YR 1989 MAX 567900 MIN 384700 (Φ) -89200

WTR YR 1990 MAX 567600 MIN 487900 (Φ) +7700

(↑) Gage height, in feet, at end of month.

(Φ) Change in contents, in acre-feet.

BRAZOS RIVER MAIN STEM

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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 1989 TO SEPTEMBER 1990

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)
JAN							
30...	1315	1.00	2150	8.4	10.5	9.2	86
30...	1317	10.0	2150	8.4	10.0	9.1	85
30...	1319	20.0	2140	8.4	10.0	9.1	85
30...	1321	30.0	2150	8.4	10.0	9.1	85
30...	1323	40.0	2150	8.4	10.0	9.1	85
30...	1325	50.0	2160	8.4	10.0	9.0	84
30...	1327	60.0	2150	8.4	10.0	9.0	84
MAY							
10...	1251	1.00	787	7.8	19.0	6.7	75
10...	1253	10.0	801	7.8	19.0	6.7	75
10...	1255	20.0	821	7.8	19.0	6.7	75
10...	1257	30.0	820	7.8	18.5	6.7	74
10...	1259	40.0	827	7.8	18.5	6.4	71
10...	1301	50.0	832	7.7	18.0	6.2	68
10...	1303	60.0	825	7.7	18.0	6.0	66
AUG							
22...	1505	1.00	1520	8.5	30.5	6.9	96
22...	1507	10.0	1520	8.4	29.0	6.8	93
22...	1509	20.0	1530	7.9	28.0	4.1	55
22...	1511	30.0	1610	7.3	26.5	0	0
22...	1513	40.0	1590	7.3	25.5	0	0
22...	1515	50.0	1490	7.3	24.5	0	0
22...	1517	60.0	1650	7.3	24.0	0	0

325218098254101 - POSSUM KINGDOM LK SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)
JAN										
30...	1228	1.00	2140	8.4	10.5	2.90	9.2	86	400	280
30...	1230	10.0	2140	8.4	10.0	--	9.2	85	--	--
30...	1232	20.0	2140	8.4	10.0	--	9.2	85	--	--
30...	1234	30.0	2150	8.4	10.0	--	9.1	84	--	--
30...	1236	40.0	2140	8.4	10.0	--	9.1	84	--	--
30...	1238	50.0	2140	8.4	10.0	--	9.1	84	--	--
30...	1240	60.0	2140	8.4	9.5	--	9.1	83	--	--
30...	1242	70.0	2140	8.4	9.5	--	8.9	82	--	--
30...	1244	80.0	2180	8.1	8.0	--	7.5	66	--	--
30...	1246	90.0	2190	8.0	7.5	--	6.6	58	--	--
30...	1248	96.0	2200	8.0	7.5	--	6.2	54	400	260
MAY										
10...	1158	1.00	803	7.8	19.0	0.18	6.7	75	160	81
10...	1200	10.0	808	7.8	19.0	--	6.7	75	--	--
10...	1202	20.0	800	7.8	18.5	--	6.5	72	--	--
10...	1204	30.0	799	7.8	18.5	--	6.5	72	--	--
10...	1206	40.0	806	7.8	18.5	--	6.4	71	--	--
10...	1208	50.0	860	7.7	18.0	--	5.7	63	--	--
10...	1210	60.0	824	7.7	17.5	--	5.7	62	--	--
10...	1212	70.0	815	7.7	17.5	--	5.6	61	--	--
10...	1214	80.0	817	7.7	17.5	--	5.6	61	--	--
10...	1216	90.0	904	7.7	17.5	--	5.1	55	--	--
10...	1218	98.0	952	7.7	17.0	--	5.0	54	180	97
AUG										
22...	1410	1.00	1510	8.4	31.0	1.80	6.8	96	300	190
22...	1412	10.0	1510	8.4	29.0	--	6.8	93	--	--
22...	1414	20.0	1520	7.9	28.0	--	4.1	55	--	--
22...	1416	25.0	1550	7.4	27.5	--	0.9	12	--	--
22...	1418	30.0	1600	7.2	26.5	--	0	0	--	--
22...	1420	40.0	1600	7.3	25.5	--	0	0	--	--
22...	1422	50.0	1540	7.3	24.0	--	0	0	--	--
22...	1424	60.0	1580	7.3	23.0	--	0	0	--	--
22...	1426	70.0	1480	7.3	22.0	--	0	0	--	--
22...	1428	80.0	1550	7.3	21.5	--	0	0	--	--
22...	1430	90.0	3100	7.2	21.5	--	0	0	--	--
22...	1432	100	3500	7.1	21.5	--	0	0	590	430

BRAZOS RIVER MAIN STEM

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325218098254101 - POSSUM KINGDOM LK SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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- LITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN										
30...	110	30	300	7	7.5	110	290	450	0.30	6.2
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	110	30	300	7	7.4	130	300	450	0.30	7.3
MAY										
10...	49	10	85	3	4.2	83	80	140	0.30	8.6
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	55	11	100	3	4.3	86	93	170	0.10	8.0
AUG										
22...	88	19	180	5	6.6	100	200	280	0.30	6.8
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	170	41	490	9	7.5	170	400	830	0.50	13
DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
30...	1260	--	<0.010	0.200	0.020	0.68	0.70	0.030	20	10
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	<0.010	0.200	0.020	0.48	0.50	0.030	20	10
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	1290	--	<0.010	<0.100	0.190	0.81	1.0	0.040	30	110
MAY										
10...	427	0.190	0.110	0.300	0.130	0.37	0.50	0.080	38	3
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	0.210	0.090	0.300	0.110	0.29	0.40	0.090	50	<10
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	493	0.170	0.130	0.300	0.190	0.41	0.60	0.100	88	28
AUG										
22...	843	--	<0.010	<0.100	<0.010	--	0.30	0.010	9	1
22...	--	--	<0.010	<0.100	<0.010	--	0.30	0.010	20	<10
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	<0.010	<0.100	<0.010	--	0.30	0.040	30	170
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	2050	--	0.020	<0.100	1.90	0.70	2.6	0.470	150	810

BRAZOS RIVER MAIN STEM

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08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325250098275301 - POSSUM KINGDOM LK SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
30...	1157	1.00	2120	8.5	10.5	9.4	88
30...	1159	10.0	2100	8.5	9.5	9.4	86
30...	1201	20.0	2100	8.5	9.5	9.4	86
30...	1203	30.0	2100	8.5	9.5	9.3	85
30...	1205	40.0	2110	8.5	9.5	9.3	85
30...	1207	51.0	2100	8.5	9.0	9.3	84
MAY							
10...	1100	1.00	645	7.9	18.5	6.8	75
10...	1102	10.0	645	7.9	18.5	6.7	74
10...	1104	20.0	653	7.9	18.0	6.5	71
10...	1106	30.0	653	7.8	18.0	6.4	70
10...	1108	40.0	643	7.8	17.5	6.1	66
10...	1110	46.0	647	7.8	18.0	6.0	66
AUG							
22...	1330	1.00	1550	8.5	31.5	6.9	98
22...	1332	10.0	1550	8.5	30.0	6.9	95
22...	1334	20.0	1720	8.0	28.5	4.0	54
22...	1336	30.0	2100	7.4	27.5	0	0
22...	1338	40.0	2140	7.4	26.5	0	0
22...	1340	49.0	2840	7.4	26.5	0	0

325256098275301 - POSSUM KINGDOM LK SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
30...	1125	1.00	2110	8.5	10.5	9.3	87
30...	1127	10.0	2110	8.5	10.0	9.4	87
30...	1129	20.0	2110	8.5	10.0	9.2	85
30...	1131	30.0	2120	8.5	10.0	9.3	86
30...	1133	40.0	2110	8.5	9.5	9.3	85
30...	1135	50.0	2110	8.5	9.5	9.3	85
30...	1137	60.0	2120	8.5	9.5	9.2	84
30...	1139	70.0	2120	8.5	9.5	9.2	84
30...	1141	80.0	2120	8.4	9.0	9.0	82
30...	1143	89.0	2160	8.1	8.5	7.7	69
MAY							
10...	1115	1.00	653	7.9	19.0	6.6	74
10...	1117	10.0	661	7.9	18.5	6.5	72
10...	1119	20.0	647	7.9	18.0	6.5	71
10...	1121	30.0	643	7.8	18.0	6.2	68
10...	1123	40.0	642	7.8	17.5	6.0	65
10...	1125	50.0	646	7.8	17.5	6.0	65
10...	1127	60.0	648	7.8	17.0	5.9	63
10...	1129	70.0	637	7.8	17.0	5.9	63
10...	1131	80.0	638	7.8	17.0	5.8	62
10...	1133	92.0	705	7.8	17.0	5.4	58
AUG							
22...	1245	1.00	1550	8.6	31.0	6.8	96
22...	1247	10.0	1560	8.5	30.0	6.6	91
22...	1249	20.0	1660	7.9	28.5	3.7	50
22...	1251	30.0	2110	7.4	27.5	0	0
22...	1253	40.0	2130	7.4	26.5	0	0
22...	1255	50.0	2820	7.4	26.5	0	0
22...	1257	60.0	2940	7.4	25.5	0	0
22...	1259	70.0	3130	7.3	25.5	0	0
22...	1301	80.0	4930	7.4	26.0	0	0
22...	1303	91.0	5170	7.3	26.0	0	0

BRAZOS RIVER MAIN STEM

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325129098311801 - POSSUM KINGDOM LK SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
30...	1044	1.00	1940	8.5	8.0	9.5	84
30...	1046	10.0	1940	8.5	8.0	9.5	84
30...	1048	20.0	1950	8.5	8.0	9.4	83
30...	1050	30.0	1950	8.5	8.0	9.4	83
30...	1052	40.0	1960	8.5	8.0	9.4	83
30...	1054	50.0	1960	8.5	8.0	9.3	82
30...	1056	60.0	1970	8.5	8.0	9.2	81
30...	1058	72.0	2070	8.2	8.0	7.8	69
MAY							
10...	0920	1.00	618	7.9	18.0	6.3	69
10...	0922	10.0	614	7.9	18.0	6.2	68
10...	0924	20.0	613	7.9	18.0	6.2	68
10...	0926	30.0	612	7.9	18.0	6.2	68
10...	0928	40.0	622	7.9	17.5	6.0	65
10...	0930	50.0	613	7.9	16.5	5.5	58
10...	0932	60.0	594	7.8	16.5	5.3	56
10...	0934	70.0	646	7.8	16.5	5.1	54
10...	0936	77.0	696	7.8	16.5	4.8	51
AUG							
22...	1200	1.00	1790	8.4	30.0	6.6	91
22...	1202	10.0	1750	8.4	28.0	6.6	88
22...	1204	20.0	1890	8.2	28.0	5.3	71
22...	1206	30.0	2210	7.5	27.5	0.6	8
22...	1208	40.0	2700	7.4	27.0	0	0
22...	1210	50.0	3450	7.4	27.0	0	0
22...	1212	60.0	4300	7.4	27.0	0	0
22...	1214	70.0	4870	7.4	27.0	0	0
22...	1216	74.0	4940	7.3	27.0	0	0

325327098314001 - POSSUM KINGDOM LK SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN										
30...	0958	1.00	1910	8.5	8.5	2.10	9.6	86	350	240
30...	1000	10.0	1920	8.5	8.5	--	9.5	85	--	--
30...	1002	20.0	1920	8.5	8.5	--	9.5	85	--	--
30...	1004	30.0	1920	8.5	8.5	--	9.5	85	--	--
30...	1006	40.0	1910	8.5	8.5	--	9.4	84	--	--
30...	1008	50.0	1910	8.5	8.5	--	9.4	84	--	--
30...	1010	60.0	1910	8.4	8.5	--	8.9	80	--	--
30...	1012	66.0	1940	8.3	8.5	--	8.6	77	360	240
MAY										
10...	1540	1.00	624	7.8	19.0	0.18	6.9	77	150	65
10...	1542	10.0	627	7.8	18.5	--	6.9	77	--	--
10...	1544	20.0	631	7.8	18.5	--	6.9	77	--	--
10...	1546	30.0	618	7.8	18.5	--	6.8	76	--	--
10...	1548	40.0	588	7.8	17.5	--	6.2	67	--	--
10...	1550	50.0	593	7.8	16.5	--	5.7	61	--	--
10...	1552	60.0	628	7.8	16.5	--	5.6	60	--	--
10...	1554	70.0	709	7.8	16.5	--	5.4	58	150	69
AUG										
22...	0930	1.00	1750	8.5	29.5	2.60	6.8	93	330	220
22...	0932	10.0	1710	8.5	29.0	--	6.7	91	--	--
22...	0934	20.0	1940	8.1	28.5	--	4.2	57	--	--
22...	0936	30.0	2340	7.5	27.5	--	0.6	8	--	--
22...	0938	40.0	2900	7.4	27.0	--	0	0	--	--
22...	0940	50.0	3530	7.4	27.0	--	0	0	--	--
22...	0942	60.0	4340	7.4	27.0	--	0	0	--	--
22...	0944	68.0	4710	7.3	27.0	--	0	0	730	600

BRAZOS RIVER MAIN STEM

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08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325327098314001 - POSSUM KINGDOM LK SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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- LITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN										
30...	100	25	250	6	7.2	120	260	390	0.30	5.9
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	100	27	260	6	7.3	120	270	400	0.30	6.3
MAY										
10...	44	10	58	2	4.8	86	46	110	0.30	8.3
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	44	9.4	80	3	3.5	80	62	120	0.30	7.8
AUG										
22...	96	21	220	5	6.6	110	230	340	0.30	7.2
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	200	55	740	12	8.5	130	560	1200	0.40	9.3
DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
30...	1110	--	<0.010	<0.100	0.040	0.36	0.40	0.020	5	<1
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	<0.010	<0.100	0.040	0.46	0.50	0.030	20	10
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	1140	--	<0.010	<0.100	0.110	0.49	0.60	0.030	20	10
MAY										
10...	333	0.090	0.110	0.200	0.260	0.34	0.60	0.110	46	3
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	0.050	0.150	0.200	0.260	0.34	0.60	0.100	40	<10
10...	--	--	--	--	--	--	--	--	--	--
10...	375	0.010	0.190	0.200	0.310	0.49	0.80	0.100	57	7
AUG										
22...	985	--	<0.010	0.100	0.090	0.31	0.40	0.010	10	3
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	<0.010	<0.100	<0.010	--	0.50	0.020	10	10
22...	--	--	<0.010	<0.100	<0.010	--	0.30	0.010	20	60
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	2850	--	<0.010	0.100	0.850	0.25	1.1	0.150	60	790

BRAZOS RIVER MAIN STEM

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325347098265701 - POSSUM KINGDOM LK SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
30...	1540	1.00	1970	8.5	10.0	9.2	86
30...	1542	10.0	1960	8.5	9.5	9.2	85
30...	1544	20.0	1960	8.5	9.5	9.1	84
30...	1546	30.0	1970	8.5	9.0	9.1	83
30...	1548	40.0	1970	8.5	9.0	9.0	82
30...	1550	47.0	1970	8.4	9.0	9.0	82
MAY							
10...	1600	1.00	745	7.8	19.0	7.2	81
10...	1602	10.0	732	7.8	18.5	7.2	80
10...	1604	20.0	758	7.8	18.5	7.1	79
10...	1606	30.0	755	7.8	18.5	7.1	79
10...	1608	40.0	793	7.8	18.5	7.0	78
10...	1610	47.0	806	7.8	18.5	7.0	78
AUG							
22...	1740	1.00	1860	8.6	31.0	8.3	117
22...	1742	10.0	1930	8.5	29.0	6.6	90
22...	1744	20.0	2150	8.0	28.5	3.4	46
22...	1746	30.0	3050	7.3	28.5	0	0
22...	1748	40.0	3440	7.3	28.0	0	0
22...	1750	49.0	3840	7.3	27.5	0	0

325557098264401 - POSSUM KINGDOM LK SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
30...	1608	1.00	2040	8.5	10.5	9.2	87
30...	1610	10.0	2080	8.5	9.0	9.2	84
30...	1612	20.0	2090	8.5	9.0	9.1	83
30...	1614	30.0	2080	8.4	9.5	8.9	82
30...	1616	35.0	2090	8.4	9.5	8.9	82
MAY							
10...	1640	1.00	1030	7.8	19.5	7.1	81
10...	1642	10.0	1050	7.8	19.5	7.1	81
10...	1644	20.0	1050	7.8	19.0	7.0	79
10...	1646	30.0	943	7.8	19.0	6.9	78
10...	1648	39.0	891	7.8	18.5	6.6	73
AUG							
22...	1715	1.00	1940	8.5	31.5	8.1	115
22...	1717	10.0	1930	8.5	29.5	6.8	94
22...	1719	20.0	2750	7.9	29.5	3.5	48
22...	1721	30.0	4500	7.4	30.0	2.3	32
22...	1723	36.0	4870	7.3	30.0	0.7	10

325715098250501 - POSSUM KINGDOM LK SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)
JAN										
30...	1655	1.00	2210	8.5	11.0	0.58	9.3	89	410	280
30...	1657	10.0	2190	8.4	9.5	--	9.1	84	--	--
30...	1659	24.0	2290	8.4	9.5	--	8.8	81	410	290
MAY										
10...	1700	1.00	1120	7.8	20.0	0.17	6.9	79	220	110
10...	1702	10.0	1130	7.8	19.5	--	6.9	78	--	--
10...	1704	20.0	1090	7.8	19.5	--	7.0	79	--	--
10...	1706	29.0	1250	7.7	19.5	--	6.5	74	220	110
AUG										
22...	1650	1.00	2030	8.5	32.0	1.00	7.7	111	380	270
22...	1652	10.0	2240	8.4	30.0	--	7.1	99	--	--
22...	1654	20.0	3270	8.0	30.5	--	5.6	79	--	--
22...	1656	25.0	5560	7.4	30.5	--	3.5	50	710	620

BRAZOS RIVER MAIN STEM

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08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325715098250501 - POSSUM KINGDOM LK SITE GC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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- LITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN										
30...	110	32	300	6	7.2	120	310	450	0.30	5.4
30...	--	--	--	--	--	--	--	--	--	--
30...	110	34	320	7	7.1	130	330	470	0.30	5.0
MAY										
10...	61	16	130	4	5.4	110	94	220	0.20	8.6
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	60	16	120	4	5.6	110	87	200	0.30	8.5
AUG										
22...	110	25	270	6	7.1	100	260	410	0.50	7.1
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	200	52	850	14	8.5	95	610	1400	0.90	8.7
DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
30...	1290	--	<0.010	<0.100	0.030	0.47	0.50	0.040	10	10
30...	--	--	0.020	<0.100	0.030	0.37	0.40	0.040	20	10
30...	1350	--	0.050	<0.100	0.070	0.43	0.50	0.060	20	40
MAY										
10...	599	0.120	0.080	0.200	0.190	0.41	0.60	0.100	46	8
10...	--	0.100	0.100	0.200	0.200	0.40	0.60	0.120	40	<10
10...	--	--	--	--	--	--	--	--	--	--
10...	562	0.060	0.140	0.200	0.230	0.67	0.90	0.140	19	5
AUG										
22...	1150	--	<0.010	0.100	0.100	0.30	0.40	0.020	90	<10
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	3190	0.070	0.030	0.100	0.130	0.57	0.70	0.050	30	110

325047098291201 - POSSUM KINGDOM LK SITE P03

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
30...	1353	1.00	2040	8.5	10.5	9.4	88
30...	1355	10.0	2050	8.5	9.5	9.4	86
30...	1357	20.0	2040	8.5	9.5	9.2	84
30...	1359	30.0	2050	8.5	9.5	9.2	84
30...	1401	40.0	2050	8.4	9.0	9.1	83
30...	1403	50.0	2070	8.4	9.0	8.7	79
30...	1405	57.0	2090	8.3	9.0	8.4	76
MAY							
10...	1330	1.00	621	7.8	19.0	6.8	76
10...	1332	10.0	623	7.8	18.5	6.7	74
10...	1334	20.0	626	7.8	18.0	6.6	72
10...	1336	30.0	626	7.8	18.0	6.5	71
10...	1338	40.0	669	7.7	18.0	6.1	67
10...	1340	50.0	765	7.6	17.5	5.6	61
10...	1342	57.0	764	7.6	17.5	5.3	58
AUG							
22...	1345	1.00	1660	8.3	31.0	6.6	93
22...	1347	10.0	1690	8.3	29.5	6.7	92
22...	1349	20.0	1770	7.8	28.0	4.2	56
22...	1351	30.0	2090	7.4	27.5	0	0
22...	1353	40.0	2570	7.3	27.0	0	0
22...	1355	50.0	3020	7.3	26.5	0	0
22...	1357	60.0	3080	7.3	26.5	0	0

BRAZOS RIVER MAIN STEM

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325125098323701 - POSSUM KINGDOM LK SITE P05

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
30...	1435	1.00	1940	8.5	9.0	9.5	86
30...	1437	10.0	1940	8.5	8.5	9.4	84
30...	1439	24.0	1930	8.4	8.5	9.1	82
MAY							
10...	1440	1.00	681	7.9	19.0	7.3	82
10...	1442	10.0	656	7.8	18.5	6.9	77
10...	1444	20.0	661	7.8	18.0	6.9	76
10...	1446	27.0	667	7.8	18.0	6.8	75
AUG							
22...	1130	1.00	1920	8.3	30.5	6.4	89
22...	1132	10.0	1910	8.3	29.5	6.2	85
22...	1134	20.0	1940	7.8	29.0	4.2	57
22...	1136	26.0	1970	7.4	28.0	1.4	19

325301098342901 - POSSUM KINGDOM LK SITE P07

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
30...	1457	1.00	1890	8.5	9.5	9.3	86
30...	1459	10.0	1890	8.5	9.0	9.3	85
30...	1501	20.0	1890	8.5	8.5	9.3	84
30...	1503	30.0	1890	8.4	8.5	9.2	83
30...	1505	40.0	1890	8.4	8.5	9.1	82
30...	1507	50.0	1890	8.4	8.5	8.9	80
30...	1509	58.0	1910	8.4	8.5	8.7	78
MAY							
10...	1515	1.00	607	8.0	19.5	7.9	89
10...	1517	10.0	602	7.9	19.0	7.5	84
10...	1519	20.0	620	7.8	18.0	6.7	74
10...	1521	30.0	613	7.7	17.5	6.1	66
10...	1523	40.0	613	7.6	17.0	5.8	62
10...	1525	50.0	625	7.6	16.5	5.3	56
10...	1527	61.0	633	7.6	16.5	5.2	55
AUG							
22...	1040	1.00	1620	8.5	30.0	6.5	90
22...	1042	10.0	1710	8.3	29.0	5.3	72
22...	1044	20.0	1790	8.0	28.0	4.2	56
22...	1046	30.0	1800	7.5	27.0	0	0
22...	1048	40.0	2250	7.4	26.5	0	0
22...	1050	50.0	2490	7.3	25.5	0	0
22...	1052	59.0	2710	7.2	24.5	0	0

BRAZOS RIVER MAIN STEM

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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 Grafard, and 20 mi upstream from gaging station near Palo Pinto.

DRAINAGE AREA.--23,596 mi², approximately, of which 9,566 mi² probably is noncontributing.

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).

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, 48,000 ft³/s Apr. 26 at 1950 hours (gage height, 89.79 ft); minimum daily, 23 ft³/s Dec. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	990	35	26	37	25	45	502	2210	1110	477	677	62
2	663	34	25	37	93	43	716	14600	2770	527	708	65
3	678	210	25	37	303	42	1010	31000	2780	626	77	1130
4	45	34	1260	194	23	450	286	37000	10700	29	78	674
5	862	787	32	34	136	39	438	43800	16700	28	80	672
6	48	84	31	34	21	39	887	42500	15500	28	78	890
7	48	30	31	35	201	37	462	30200	20100	30	77	821
8	49	30	30	632	23	771	44	11500	13200	32	353	76
9	51	303	171	284	24	45	282	11300	2750	32	352	77
10	894	28	31	189	25	60	1600	9690	2770	32	834	80
11	690	27	451	32	26	60	38	2820	2770	593	840	859
12	48	26	1400	33	125	1950	683	2790	2790	32	946	83
13	47	25	295	286	831	7770	35	2710	2790	34	962	188
14	52	24	28	35	305	7890	2060	1920	2790	34	1000	1090
15	49	24	859	35	195	2670	3530	1930	2790	34	718	80
16	413	273	925	35	34	2850	3480	1810	2760	35	369	81
17	58	76	31	40	44	2720	3460	765	2760	35	872	269
18	56	29	23	349	45	2330	3440	1330	1550	35	37	1590
19	174	30	129	41	46	2390	10100	1460	1530	1020	606	490
20	220	381	799	34	46	2440	16900	1130	1310	37	374	71
21	50	32	1350	34	29	2380	26800	1510	1420	463	364	1190
22	38	31	2100	253	170	2140	23700	1490	585	37	387	3330
23	282	31	1650	34	29	1120	20300	1160	653	38	429	3190
24	48	345	1030	34	27	2050	13800	1410	28	40	854	3090
25	40	30	39	312	27	2140	3060	1320	468	1010	1000	7550
26	265	32	37	33	27	1180	26100	1250	698	42	855	8070
27	41	30	37	33	25	1100	31900	1130	373	622	952	2810
28	40	387	37	33	38	1040	20400	26	29	1370	675	1270
29	404	28	37	35	---	2140	16200	590	28	351	767	1420
30	39	178	37	32	---	2400	6350	704	28	46	981	1250
31	36	---	37	304	---	1190	---	526	---	44	730	---
TOTAL	7418	3614	12993	3570	2943	53521	238563	263581	116530	7793	18032	42518
MEAN	239	120	419	115	105	1726	7952	8503	3884	251	582	1417
MAX	990	787	2100	632	831	7890	31900	43800	20100	1370	1000	8070
MIN	36	24	23	32	21	37	35	26	28	28	37	62
AC-FT	14710	7170	25770	7080	5840	106200	473200	522800	231100	15460	35770	84330
CAL YR 1989	TOTAL	212547	MEAN	582	MAX	14800	MIN	23	AC-FT	421600		
WTR YR 1990	TOTAL	771076	MEAN	2113	MAX	43800	MIN	21	AC-FT	1529000		

BRAZOS RIVER MAIN STEM

08088600 BRAZOS RIVER AT MORRIS SHEPPARD DAM NEAR GRAFORD, TX.--Continued

LOCATION.--Lat 32°52'00", long 98°26'00", Palo Pinto County, Hydrologic Unit 12060201, immediately below Morris Sheppard Dam (formerly Possum Kingdom Dam), 2.6 mi upstream from Loving Creek, 11.3 mi southwest of Grafard, and 20 mi upstream from gaging station near Palo Pinto.

DRAINAGE AREA.--23,596 mi², of which 9,566 mi² probably is noncontributing.

PERIOD OF RECORD.--Chemical analyses: May 1941 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1942 to current year.

WATER TEMPERATURE: October 1949 to September 1955, October 1965 to current year.

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.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,130 microsiemens Sept. 19; minimum daily, 620 microsiemens May 26, 31.

WATER TEMPERATURE: Maximum daily, 32.0°C July 6; minimum daily, 10.0°C on several days during December, January and February.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CAC03)	HARDNESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	
OCT 24...	1030	38	2800	7.9	21.5	490	370	130	39	
DEC 05...	1250	33	2390	7.6	15.5	440	320	120	33	
MAR 14...	1110	4910	2150	7.9	12.0	390	290	110	29	
MAY 01...	0830	2900	1760	8.5	16.0	260	210	67	22	
JUN 12...	1630	4220	830	7.9	21.5	170	80	51	11	
AUG 01...	1725	4140	1570	8.0	22.0	280	170	82	19	
DATE		SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
OCT 24...	400	8	7.7	120	380	630	0.40	7.0	1660	
DEC 05...	330	7	7.5	120	320	500	0.20	6.2	1390	
MAR 14...	280	6	6.9	110	250	470	0.10	6.4	1220	
MAY 01...	240	7	5.9	51	230	420	0.20	1.7	1020	
JUN 12...	86	3	5.1	93	71	150	0.30	8.1	438	
AUG 01...	180	5	6.3	110	170	320	0.20	9.8	853	

BRAZOS RIVER MAIN STEM

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08088600 BRAZOS RIVER AT MORRIS SHEPPARD DAM NEAR GRAFORD, TX.--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	7418	2330	1380	27500	510	10200	300	6030	430
NOV. 1989	3614	2340	1380	13500	510	4990	300	2950	430
DEC. 1989	12993	2300	1350	47500	500	17600	300	10400	420
JAN. 1990	3570	2260	1330	12800	490	4730	290	2800	420
FEB. 1990	2943	2200	1290	10300	480	3780	280	2240	410
MAR. 1990	53521	2260	1330	192000	490	71000	290	42000	420
APR. 1990	238563	1870	1100	708000	400	256400	240	153400	350
MAY 1990	263581	1130	664	472000	230	165100	140	100800	220
JUNE 1990	116530	774	451	142000	150	48600	95	30000	160
JULY 1990	7793	1030	601	12700	210	4390	130	2690	210
AUG. 1990	18032	1400	819	39900	290	14100	180	8550	270
SEPT 1990	42518	2650	1570	180000	600	68400	350	39900	470
TOTAL	771076	**	**	1859000	**	669000	**	402000	**
WTD.AVG.	2113	1520	893	**	320	**	190	**	290

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2340	2310	2330	2290	e2220	2360	2090	1760	e670	e960	e1570	3070
2	2340	e2310	2320	2300	e2220	2360	2060	e1600	710	950	1180	3190
3	2410	e2320	2320	2280	2210	2350	2040	e1420	e700	1050	e1160	3300
4	e2400	e2320	2320	2280	2210	2370	2080	1210	680	1050	e1140	3100
5	e2370	e2330	2320	2280	2210	2360	2090	e1160	660	e1030	e1130	e1830
6	e2340	2340	2320	e2280	2210	2360	2060	e1110	660	1010	1120	1820
7	2320	e2330	2310	e2280	2210	e2360	2050	e1060	690	e980	1130	3960
8	2320	e2320	2310	e2280	2210	2360	2080	e1010	780	950	1130	3760
9	2310	2320	2300	2270	2200	2360	2050	e960	800	960	1120	4020
10	2290	2320	2300	2260	2190	e2350	2060	e910	870	970	e1140	4060
11	2290	e2310	2310	2270	2190	e2270	2060	e860	e890	970	1160	4090
12	2290	2310	2300	2270	2190	e2200	e2060	e810	830	e980	1170	3420
13	e2290	e2310	2300	e2270	e2190	2170	e2060	740	930	e1000	e1200	3400
14	e2280	2300	e2300	e2270	2190	2150	2050	750	1000	1010	1240	4030
15	2290	2300	e2300	2270	2190	2310	e2060	790	1040	1000	e1250	3010
16	2300	2310	2290	2260	e2190	e2300	e2060	750	e1060	980	1260	4120
17	e2310	e2320	2290	e2250	2190	e2300	e2070	740	e1080	980	e1270	3370
18	2320	2330	2290	2250	e2190	2300	2080	740	1110	980	e1270	4090
19	2340	e2320	2290	2230	e2190	e2300	2020	730	1130	e1020	1280	4130
20	2340	2470	e2290	e2230	e2190	e2310	2040	720	1080	1050	1280	4070
21	2320	2300	e2300	2230	e2190	2310	e2000	720	1180	1040	1690	e3070
22	2340	2290	2300	2230	2180	e2310	e1950	670	920	e1040	e1690	e2200
23	2330	e2300	2280	2240	e2280	e2310	e1900	690	940	1040	1690	e2200
24	2320	2320	2280	2240	e2200	e2310	1850	690	e940	e1040	1580	2240
25	e2320	2300	2280	2230	e2170	e2300	e1850	630	e940	e1050	1580	2050
26	2320	2320	2270	2230	2170	e2300	e1850	620	e940	1060	1580	2280
27	2320	2320	e2270	2220	e2170	2300	1850	680	930	e1060	e1590	2200
28	e2320	2350	2270	2220	e2170	2300	e1650	650	940	e1070	e1600	4000
29	e2310	2360	e2280	2210	---	2290	1460	640	960	e1070	1620	3840
30	2310	2350	e2280	2220	---	e2290	e1510	640	960	1080	e1610	e3840
31	2320	---	e2280	2220	---	2290	---	620	---	1080	e1610	---
MEAN	2320	2320	2300	2250	2200	2310	1970	874	901	1020	1360	3260

e Estimated

BRAZOS RIVER MAIN STEM

08088600 BRAZOS RIVER AT MORRIS SHEPPARD DAM NEAR GRAFORD, TX.--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	21.0	20.5	12.0	e10.0	14.0	15.0	16.0	e21.0	e26.0	e23.0	23.0
2	26.0	e21.0	17.0	14.0	e10.0	15.0	14.0	e17.0	22.0	26.0	22.5	24.0
3	26.0	e21.0	16.5	12.0	10.0	16.0	17.0	e18.0	e22.0	26.0	e23.0	24.0
4	e26.0	e21.0	16.5	11.0	11.0	15.0	15.0	19.0	23.0	26.0	e24.0	24.5
5	e25.0	e21.0	17.0	10.0	11.0	16.0	17.0	e19.0	23.0	e29.0	e24.0	e25.0
6	e25.0	21.0	16.5	e10.0	11.0	16.0	16.0	e19.0	23.0	32.0	25.0	26.0
7	24.0	e21.0	16.0	e10.0	11.0	e16.0	16.0	e19.0	23.0	e27.0	24.0	26.0
8	23.0	e20.0	19.0	e10.0	11.0	15.0	15.0	e19.0	22.0	21.0	24.0	25.0
9	25.0	20.0	15.5	11.0	11.0	15.0	16.0	e19.0	23.0	22.0	22.0	26.0
10	25.0	20.0	15.0	10.0	12.0	e15.0	16.0	e19.0	23.0	25.0	e23.0	25.0
11	26.0	e20.0	15.0	12.0	11.0	e15.0	16.0	e19.0	e23.0	22.0	24.0	25.0
12	24.0	20.0	14.5	10.0	12.0	e15.0	e17.0	e19.0	24.0	e22.0	24.0	25.0
13	e24.0	e20.0	15.0	e11.0	e12.0	11.0	e17.0	20.0	24.0	e22.0	e24.0	27.0
14	e24.0	20.0	e14.0	e11.0	12.0	12.0	17.0	20.0	24.0	e22.0	25.0	24.0
15	23.5	20.0	e13.5	12.0	16.0	17.0	e17.0	21.0	24.0	23.0	e26.0	25.0
16	23.5	19.0	13.0	12.0	e13.0	e16.0	e16.0	19.0	e24.0	21.0	27.0	25.0
17	e23.0	16.5	13.0	e11.0	11.0	e16.0	e14.0	21.0	e24.0	22.0	e26.0	25.0
18	23.0	19.5	12.5	11.0	e11.0	15.0	e13.5	22.0	25.0	20.0	e26.0	26.0
19	22.0	e19.5	12.5	11.0	e12.0	e15.0	e14.5	20.0	25.0	e20.0	25.0	26.0
20	22.0	e19.0	e13.0	e10.0	e13.0	e16.0	18.0	22.0	25.0	20.0	26.0	25.0
21	22.0	19.0	e13.0	10.0	e13.0	16.0	e18.0	22.0	25.0	22.0	21.0	e26.0
22	21.5	18.0	14.0	11.0	14.0	e16.0	e18.0	21.0	20.0	e23.0	e21.0	e25.0
23	21.5	e18.0	10.0	10.0	e14.0	e16.0	e18.0	21.0	20.0	25.0	25.0	e26.0
24	22.0	18.0	12.0	10.0	e15.0	e16.0	18.0	20.0	e25.0	e24.0	e26.0	26.0
25	e22.0	18.0	12.0	12.0	e15.0	e15.0	e18.0	18.0	e25.0	e23.0	26.0	26.0
26	23.0	18.0	12.0	12.0	16.0	e15.0	e18.0	18.0	e25.0	22.0	26.0	26.0
27	22.0	18.0	e11.0	11.0	e16.0	15.0	19.0	23.0	25.0	e23.0	e26.0	26.0
28	e21.0	17.0	10.0	11.0	16.0	15.0	e19.0	23.0	25.0	e24.0	e26.0	25.0
29	e21.0	17.0	e10.0	11.0	---	16.0	20.0	23.0	20.0	e24.0	26.0	26.0
30	21.0	16.0	e10.0	11.0	---	e16.0	e20.0	23.0	20.0	25.0	e26.0	e26.0
31	21.0	---	e11.0	11.0	---	15.0	---	20.0	---	25.0	e26.0	---
MEAN	23.3	19.2	13.9	11.0	12.5	15.2	16.8	20.0	23.2	23.7	24.6	25.3

e Estimated

BRAZOS RIVER MAIN STEM

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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 except those for estimated daily discharges, which are 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); 50 years (water years 1941-90) regulated, 937 ft³/s (678,900 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, 44,300 ft³/s April 27 at 0100 hours (gage height, 23.25 ft); minimum daily, 20 ft³/s Nov. 15 and Dec. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	493	48	164	e33	209	111	916	2390	611	90	148	715
2	947	28	97	e38	65	104	903	11400	2960	428	532	140
3	629	27	50	e31	130	86	1090	32400	3170	539	629	160
4	641	162	442	e38	307	196	658	32400	7530	631	128	897
5	149	57	527	e157	71	287	453	39700	20000	131	116	624
6	708	546	97	e64	139	95	1300	39000	13600	83	152	600
7	137	118	45	e41	53	719	691	33000	20500	69	95	763
8	72	50	24	e34	186	706	399	15800	16800	61	91	699
9	56	90	20	e551	85	439	196	8950	3620	57	302	149
10	52	200	140	e643	49	185	637	11700	3280	58	350	109
11	683	60	56	e202	34	1520	1330	3680	3260	57	812	96
12	603	36	728	e38	23	1390	565	3340	3220	502	819	614
13	128	28	1020	e27	284	4320	389	3270	3240	118	916	158
14	67	22	232	e159	731	9880	3250	2270	3250	77	986	303
15	52	20	110	e43	407	2820	3740	2280	3260	63	1040	793
16	44	60	991	e35	196	2950	3570	2180	3200	63	750	146
17	310	196	620	e38	61	2830	3520	1870	3190	69	530	136
18	114	120	107	e33	39	2410	3500	560	1820	66	855	650
19	72	56	51	e112	33	2450	6710	1600	1750	117	144	1010
20	210	37	624	e66	31	2490	16700	1360	1500	838	574	510
21	194	277	383	e33	81	2430	25300	1630	1620	128	430	192
22	80	105	2110	e35	318	2460	25800	1690	1220	361	414	2840
23	38	50	e2260	e153	284	1830	20500	1430	673	143	421	3170
24	160	85	e1320	66	139	1250	17200	1530	719	88	454	3170
25	91	237	e600	144	79	2180	4720	1500	136	74	802	5350
26	40	70	e73	185	61	2040	23200	1630	429	858	1010	9820
27	160	43	e45	57	53	1060	36200	1220	702	131	1000	3270
28	93	31	e38	41	78	1090	21100	1200	374	817	760	1330
29	43	273	e35	31	---	1580	18200	159	117	840	703	1280
30	301	107	e38	26	---	2740	8820	618	95	391	748	1340
31	109	---	e38	84	---	2140	---	816	---	221	963	---
TOTAL	7476	3239	13085	3238	4226	56788	251557	262573	125846	8169	17674	41034
MEAN	241	108	422	104	151	1832	8385	8470	4195	264	570	1368
MAX	947	546	2260	643	731	9880	36200	39700	20500	858	1040	9820
MIN	38	20	20	26	23	86	196	159	95	57	91	96
AC-FT	14830	6420	25950	6420	8380	112600	499000	520800	249600	16200	35060	81390
CAL YR 1989	TOTAL	222791	MEAN	610	MAX	12400	MIN	20	AC-FT	441900		
WTR YR 1990	TOTAL	794905	MEAN	2178	MAX	39700	MIN	20	AC-FT	1577000		

e Estimated

BRAZOS RIVER MAIN STEM

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. 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) about 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 53.0 mi² in the East Keechi and Pollard Creeks drainage basins. There are many diversions above station for irrigation, municipal supply, and for oil field operations. Gage-height telemeter at station.

AVERAGE DISCHARGE.--22 years (water years 1969-90), 1060 ft³/s (768,000 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, 82,300 ft³/s Apr. 27 at 1400 hours (gage height, 31.46 ft, from graph drawn through plotted non-recording gage readings); minimum daily, 60.0 ft³/s Nov. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	617	152	83	153	143	146	3090	e12100	e2280	296	482	787
2	611	204	135	142	153	135	e1720	e19800	e2730	194	483	848
3	694	142	153	130	128	128	1040	e43500	e2670	299	324	557
4	685	109	124	121	195	153	978	e48900	e3580	349	756	287
5	612	97	133	116	157	144	1130	e39200	e7390	451	668	314
6	586	83	188	112	177	127	2040	e41300	e18700	451	574	590
7	290	91	450	111	211	773	2140	e41300	e15000	268	402	581
8	532	255	245	135	156	941	1650	e33400	e21500	177	240	655
9	250	224	174	154	142	1060	902	e15800	e16600	165	218	642
10	171	148	135	131	152	861	608	e11800	e4710	148	185	547
11	136	108	108	252	178	783	511	e12500	e3520	134	201	282
12	113	99	90	389	174	4620	1510	e5740	e3360	130	537	205
13	343	149	86	302	133	4590	815	e4500	3250	131	803	168
14	500	112	581	236	110	4060	2180	e4320	3170	342	889	335
15	235	83	797	182	110	9390	6840	e3640	3120	243	945	270
16	160	68	393	148	492	3450	4960	e3470	3090	191	1030	324
17	114	62	244	206	372	2840	e3580	e3310	3030	168	881	498
18	99	60	894	179	317	2680	3260	e3070	3010	156	612	354
19	85	61	620	234	216	2380	3170	e2340	2400	139	776	291
20	153	107	298	476	159	2200	7320	e2390	1930	132	579	748
21	145	125	204	1130	149	2200	e22100	e2540	1840	133	295	626
22	115	108	142	537	181	2190	e26600	e2260	1610	463	439	522
23	128	93	478	312	165	2150	e26700	e2510	1620	323	416	2370
24	151	156	3930	225	187	1970	e20700	e2480	923	462	391	2730
25	114	146	1690	197	260	1320	e18000	e2140	845	343	413	2750
26	92	111	1220	210	240	1810	e56200	e2290	607	230	551	3860
27	96	95	540	170	174	1930	e79500	e2140	358	197	856	8900
28	136	160	298	174	154	1430	e52900	e2100	724	503	863	3380
29	111	126	219	207	---	1250	e27200	e1890	607	284	930	2350
30	117	104	185	154	---	1560	e20300	e1280	506	836	666	1510
31	156	---	168	129	---	3010	---	e863	---	648	672	---
TOTAL	8347	3638	15005	7354	5385	62281	399644	374873	134680	8986	18077	38281
MEAN	269	121	484	237	192	2009	13320	12090	4489	290	583	1276
MAX	694	255	3930	1130	492	9390	79500	48900	21500	836	1030	8900
MIN	85	60	83	111	110	127	511	863	358	130	185	168
AC-FT	16560	7220	29760	14590	10680	123500	792700	743600	267100	17820	35860	75930
CAL YR 1989	TOTAL	447780	MEAN	1227	MAX	28500	MIN	34	AC-FT	888200		
WTR YR 1990	TOTAL	1076551	MEAN	2949	MAX	79500	MIN	60	AC-FT	2135000		

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 TEMPERATURE: October 1970 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, 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, 3,010 microsiemens Sept. 30; minimum daily, 293 microsiemens Apr. 26.

WATER TEMPERATURE: Maximum daily, 34.5°C July 11; minimum daily, 0.0°C Dec. 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 11...	1415	138	2730	26.0	490	350	130	39	400
NOV 15...	1245	85	2670	17.0	480	370	130	38	360
JAN 11...	1530	358	2490	12.0	410	290	110	33	290
MAR 01...	1045	148	1740	9.0	330	200	91	24	220
AUG 10...	1400	188	1120	32.5	260	130	75	18	130

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY 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 11...	8	7.4	130	370	600	0.40	5.1	1630
NOV 15...	7	7.2	110	360	590	0.40	3.5	1560
JAN 11...	6	6.5	120	310	470	0.30	1.0	1290
MAR 01...	5	5.2	120	210	330	0.30	2.2	956
AUG 10...	3	4.7	140	120	190	0.20	8.9	628

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	8347	2820	1670	37600	630	14300	370	8420	510
NOV. 1989	3638	2690	1590	15600	600	5890	360	3510	490
DEC. 1989	15005	2060	1220	49600	450	18200	280	11300	390
JAN. 1990	7354	1950	1160	23000	420	8390	260	5240	370
FEB. 1990	5385	1780	1060	15400	380	5560	240	3520	340
MAR. 1990	62281	1590	946	159000	340	57600	220	36500	310
APR. 1990	399644	1190	708	764000	250	271700	160	176400	230
MAY 1990	374873	908	543	550000	190	191100	130	128300	180
JUNE 1990	134680	780	467	170000	160	58600	110	39800	160
JULY 1990	8986	1420	850	20600	300	7320	200	4760	280
AUG. 1990	18077	1520	906	44200	320	15800	210	10200	300
SEPT 1990	38281	2490	1470	152000	550	57000	330	34300	460
TOTAL	1076551	**	**	2001000	**	711000	**	462000	**
WTD. AVG.	2949	1150	689	**	240	**	160	**	230

BRAZOS RIVER MAIN STEM

08090800 BRAZOS RIVER NEAR DENNIS, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2860	2650	2500	2360	1350	1760	1350	1380	702	1350	1430	2080
2	2860	2700	1580	2340	1350	1770	1440	428	848	1420	1360	2140
3	2870	2720	1660	2300	1380	1670	1520	509	804	1480	1190	2200
4	2890	2620	1750	2320	1360	1640	1610	908	721	1510	991	2200
5	2880	2630	1880	2350	1380	1770	1680	1190	703	1510	1270	2170
6	2870	2640	2080	2340	1390	1740	862	1070	672	1380	1120	2250
7	2810	2610	1520	2360	1540	662	1230	963	673	1410	1120	2320
8	2810	2710	1550	2320	1610	601	1100	919	687	1450	1060	2360
9	2810	2760	1550	2290	1680	858	1280	908	732	1500	1120	2390
10	2810	2740	1530	2320	1720	986	1380	943	778	1530	1180	2440
11	2720	2750	1430	2360	1840	897	1210	848	814	1560	1200	2450
12	2750	2740	1970	2370	1880	491	1280	915	820	1570	1240	2410
13	2800	2720	2480	2390	1910	385	1400	946	844	1600	1490	2420
14	2880	2730	2150	2390	1910	1250	1120	920	858	1610	1400	2360
15	2890	2720	1520	2400	1940	2000	837	918	876	1570	1510	2490
16	2870	2710	1490	2400	2040	1730	405	924	876	1540	1530	2460
17	2820	2720	2360	2370	2050	1770	1630	914	922	1520	1560	2590
18	2800	2680	2050	2320	2010	1940	1850	904	968	1450	1550	2590
19	2740	2680	1760	2150	2040	2000	1900	968	1020	1510	1560	2390
20	2690	2640	1680	1340	2010	2000	1560	994	1060	1520	1570	2240
21	2760	2720	1970	1860	1880	2050	1220	983	1080	1530	1580	2560
22	2800	2730	1970	1540	1650	2070	1710	956	1100	1510	1590	2610
23	2710	2660	2230	1430	1580	2090	1860	901	1090	1430	1610	1620
24	2730	2640	2170	1410	1610	2030	1880	890	1160	1230	1620	2770
25	2830	2680	2300	1480	1890	2020	1880	902	1190	1230	1680	2890
26	2740	2670	2310	1550	1870	2040	293	897	1240	1300	1670	2660
27	2710	2650	2310	1590	1950	2020	663	895	1280	1350	1620	2430
28	2620	2630	2330	1640	1770	2000	1370	882	1330	1290	1830	2380
29	2760	2700	2340	1630	---	2000	1630	912	1300	1260	1960	2960
30	2650	2650	2340	1540	---	1560	1500	917	1310	1370	2000	3010
31	2530	---	2320	1540	---	1750	---	1080	---	1430	2010	---
MEAN	2780	2690	1970	2030	1740	1600	1350	925	949	1450	1470	2430

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	16.0	10.5	8.0	14.0	9.0	17.0	17.5	25.0	30.0	29.5	30.0
2	27.0	15.5	12.0	10.0	14.0	14.5	---	15.0	25.0	32.0	26.5	30.0
3	27.0	14.5	10.0	13.0	10.0	16.0	19.5	15.5	22.0	33.0	28.0	30.5
4	26.5	18.0	12.5	12.0	13.0	15.0	21.5	16.0	27.0	33.0	28.0	31.0
5	28.0	---	14.0	9.0	12.5	15.0	23.5	17.0	26.0	32.0	27.0	33.5
6	25.0	22.5	14.5	9.0	13.5	16.5	16.0	19.0	27.0	31.0	28.0	32.0
7	23.0	21.5	11.0	10.0	14.5	16.0	17.0	19.0	25.0	31.0	28.0	32.0
8	24.0	18.5	9.0	12.0	17.5	16.5	16.5	19.5	24.5	33.0	30.0	29.0
9	---	17.5	9.5	12.0	15.0	21.0	17.0	20.5	25.0	32.5	31.0	28.0
10	23.5	18.0	11.0	13.5	14.0	20.5	19.0	19.5	28.0	33.5	30.5	28.0
11	24.5	20.0	7.0	13.0	16.0	18.0	20.0	19.5	27.5	34.5	29.0	26.0
12	24.0	18.0	5.5	10.0	17.5	19.0	20.0	21.5	28.5	31.0	32.0	28.0
13	25.0	21.0	7.0	8.0	18.0	20.0	18.5	23.0	29.0	29.0	33.0	28.0
14	24.0	22.0	6.0	11.0	13.5	18.5	18.0	24.5	28.5	28.0	32.0	28.5
15	26.0	16.0	2.5	14.0	11.0	14.0	20.0	25.0	29.0	25.0	33.0	30.0
16	25.5	14.0	1.0	15.0	11.0	15.5	22.0	25.5	26.0	26.0	28.0	30.0
17	19.0	11.5	2.0	18.0	11.5	11.0	19.5	24.5	---	25.0	32.0	30.0
18	18.0	12.5	4.0	11.5	13.0	---	15.0	23.5	30.0	26.0	32.5	28.0
19	16.0	18.0	3.0	12.0	13.0	16.5	15.0	26.0	30.5	28.0	32.0	29.0
20	17.0	18.5	4.0	11.0	14.0	16.5	15.0	28.0	31.0	31.0	33.5	28.0
21	18.0	21.5	.5	12.0	12.0	17.5	17.0	28.0	31.0	31.0	34.0	27.5
22	22.0	16.0	---	12.5	10.5	19.0	18.0	26.5	31.0	29.0	---	26.5
23	27.0	13.0	.0	13.0	14.0	18.5	18.5	27.5	30.0	30.0	31.0	24.0
24	20.5	10.5	2.0	14.5	15.5	12.0	17.0	27.5	30.0	28.0	27.5	23.0
25	20.5	16.0	7.0	11.0	17.0	10.0	18.0	27.5	31.5	30.0	33.0	24.5
26	19.5	17.0	7.5	11.5	18.0	9.5	17.0	28.0	---	31.0	32.0	26.0
27	19.5	16.0	8.0	11.5	16.5	9.0	17.5	28.0	31.5	33.5	---	25.0
28	21.0	14.0	8.0	9.0	13.0	14.0	17.0	26.5	32.0	32.0	33.0	25.0
29	21.0	11.0	10.0	10.5	---	16.0	20.0	27.0	32.0	33.0	33.5	27.5
30	19.0	10.0	8.0	12.0	---	15.0	19.0	25.0	31.0	29.5	34.0	26.0
31	17.0	---	9.0	10.0	---	16.0	---	29.5	---	27.5	---	---
MEAN	22.5	16.5	7.0	11.5	14.0	15.5	18.0	23.0	28.5	30.5	31.0	28.0

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 invert 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, 154,000 acre-ft Mar. 11 at 0800 hours (elevation, 693.06 ft); minimum, 121,700 acre-ft Apr. 29 (elevation, 688.97 ft).

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

688.0	114,900	692.0	145,000
690.0	129,200	694.0	162,300

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	149400	148900	148700	148600	148800	148300	149700	144700	149700	150200	150000	148800
2	149000	148800	148800	148300	148900	148300	148100	148800	146000	150600	150300	148900
3	148400	148900	148500	148900	148500	148500	148700	144900	150400	150600	150300	149100
4	148800	148800	148400	148800	149200	148500	149100	141700	146400	149900	149300	148700
5	148900	149200	148400	148700	149200	148700	150000	139900	147300	150700	150300	147900
6	149800	149200	148700	148600	149300	149400	150700	144300	147600	150600	150000	147800
7	149400	149500	149700	148500	148900	149400	150300	146700	146300	150200	149900	147800
8	149300	149900	149000	148300	149300	149800	149400	146300	146300	149700	149600	148300
9	148900	150000	148700	148500	149400	150600	148700	141900	144700	149500	149600	148700
10	149400	150200	149400	148300	148800	150000	149700	145400	147600	149700	149500	149000
11	149000	149700	149300	148400	149200	147600	149100	145700	147800	149700	149400	148800
12	149000	149100	148400	148800	149100	148300	149700	144000	148700	149900	149500	148500
13	149000	149200	148400	148900	148900	144200	150600	148200	148300	149400	149900	148300
14	149200	149400	148500	149300	148500	137600	149600	148400	148900	148800	149700	148600
15	149000	149400	149700	149300	147400	147000	150700	147200	149900	148700	149500	149000
16	149400	149200	148600	149600	147500	147000	148000	146600	149400	148800	149500	149000
17	149200	149000	146300	149400	147600	147700	148100	146700	148000	149000	149000	149000
18	149300	149100	145600	149000	147800	149000	148600	147900	148200	149900	148700	148800
19	148900	149100	146600	148400	148300	148400	146000	147300	149100	149900	149000	148800
20	148900	149200	147000	148300	148300	148700	139900	148000	149400	149900	149900	149400
21	148900	149200	147600	150000	147900	149500	147000	148900	149500	149600	149500	149300
22	149000	150200	146200	150000	147800	150000	140000	149000	149400	150000	149600	146000
23	149100	149700	144800	148900	147900	149700	135500	149600	148900	150200	149600	145000
24	149400	149700	146900	149800	148200	149400	136600	148600	149400	150200	149300	146000
25	149600	150200	148600	148700	148500	148800	137400	147300	148100	150600	149000	145500
26	149600	150100	148000	148500	148900	148600	140400	147600	147900	150600	148900	142400
27	149600	150300	147500	149400	149200	149000	136100	148900	147900	150400	149400	149400
28	149100	149400	147900	149400	148900	149000	122900	148900	147800	150700	149600	148000
29	148800	148800	148600	149600	---	149000	137400	149700	148800	151000	149400	149000
30	149000	148800	148800	149800	---	150000	145700	148600	149500	150000	148900	147200
31	148300	---	148600	149600	---	151000	---	147700	---	149800	148800	---
MAX	149800	150300	149700	150000	149400	151000	150700	149700	150400	151000	150300	149400
MIN	148300	148800	144800	148300	147400	137600	122900	139900	144700	148700	142400	142400
(↑)	692.39	692.45	692.43	692.55	692.47	692.72	692.08	692.32	692.54	692.57	692.46	692.26
(Φ)	-1200	+500	-200	+1000	-700	+2100	-5300	+2000	+1800	+300	-1000	-1600
CAL YR 1989	MAX	153100	MIN	124400	(Φ)	+8800						
WTR YR 1990	MAX	151000	MIN	122900	(Φ)	-2300						

(↑) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.

BRAZOS RIVER MAIN STEM

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 1989 TO SEPTEMBER 1990

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											
08...	0854	1.00	2520	8.4	11.5	1.00	9.7	91	460	330	
08...	0856	10.0	2520	8.4	11.5	--	9.6	90	--	--	
08...	0858	20.0	2520	8.4	11.0	--	9.6	89	--	--	
08...	0900	30.0	2520	8.4	11.0	--	9.5	88	--	--	
08...	0902	40.0	2520	8.3	11.0	--	9.0	84	--	--	
08...	0904	50.0	2520	8.2	11.0	--	8.6	80	--	--	
08...	0906	60.0	2530	8.0	11.0	--	7.8	72	--	--	
08...	0908	65.0	2530	7.7	11.0	--	6.4	59	420	300	
MAY											
24...	0902	1.00	902	7.8	24.0	0.40	6.5	79	200	95	
24...	0905	10.0	902	7.8	24.0	--	6.5	79	--	--	
24...	0908	20.0	902	7.7	24.0	--	6.4	78	--	--	
24...	0911	30.0	898	7.6	23.0	--	5.6	67	--	--	
24...	0915	40.0	895	7.4	22.0	--	4.6	54	--	--	
24...	0918	50.0	891	7.4	21.0	--	3.7	43	--	--	
24...	0922	64.0	911	7.3	20.5	--	2.2	25	200	92	
AUG											
14...	0947	1.00	882	8.4	29.0	1.80	7.8	103	200	78	
14...	0950	10.0	882	8.3	28.5	--	7.4	97	--	--	
14...	0953	20.0	882	7.8	27.5	--	3.3	43	--	--	
14...	0956	30.0	961	7.4	27.0	--	0	0	--	--	
14...	0959	40.0	960	7.4	27.0	--	0	0	--	--	
14...	1003	50.0	1000	7.4	26.5	--	0	0	--	--	
14...	1005	64.0	993	7.4	26.0	--	0	0	220	76	
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 SI02)
FEB											
08...	120	38	350	7	7.5	130	330	540	0.40	5.9	
08...	--	--	--	--	--	--	--	--	--	--	
08...	--	--	--	--	--	--	--	--	--	--	
08...	--	--	--	--	--	--	--	--	--	--	
08...	--	--	--	--	--	--	--	--	--	--	
08...	--	--	--	--	--	--	--	--	--	--	
08...	110	36	350	7	7.6	130	330	540	--	6.3	
MAY											
24...	60	12	94	3	4.8	100	98	160	0.20	0.80	
24...	--	--	--	--	--	--	--	--	--	--	
24...	--	--	--	--	--	--	--	--	--	--	
24...	--	--	--	--	--	--	--	--	--	--	
24...	--	--	--	--	--	--	--	--	--	--	
24...	--	--	--	--	--	--	--	--	--	--	
24...	62	12	94	3	4.7	110	94	160	<0.10	9.6	
AUG											
14...	57	13	93	3	4.9	120	77	150	0.20	7.7	
14...	--	--	--	--	--	--	--	--	--	--	
14...	--	--	--	--	--	--	--	--	--	--	
14...	--	--	--	--	--	--	--	--	--	--	
14...	--	--	--	--	--	--	--	--	--	--	
14...	--	--	--	--	--	--	--	--	--	--	
14...	63	15	100	3	4.7	140	76	160	0.20	12	

BRAZOS RIVER MAIN STEM

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08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322227097412101 - LAKE GRANBURY SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB										
08...	1470	--	--	<0.100	--	--	0.50	0.080	10	<10
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	<0.100	--	--	0.60	0.140	20	10
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	<0.100	--	--	1.0	0.020	20	70
08...	--	--	--	--	--	--	--	--	--	--
08...	1460	--	--	<0.100	--	--	1.0	0.030	20	240
MAY										
24...	492	0.390	0.010	0.400	0.020	0.28	0.30	0.060	12	1
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	0.470	0.030	0.500	0.010	0.39	0.40	0.050	40	<10
24...	--	--	--	--	--	--	--	--	--	--
24...	503	0.480	0.020	0.500	0.020	0.38	0.40	0.080	12	23
AUG										
14...	474	--	<0.010	<0.100	<0.010	--	1.0	0.010	5	38
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	<0.010	<0.100	0.020	0.48	0.50	0.030	60	220
14...	--	--	<0.010	<0.100	0.160	0.74	0.90	0.030	40	540
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	519	--	<0.010	<0.100	0.900	1.2	2.1	0.150	840	1100

322231097412001 - LAKE GRANBURY SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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							
08...	0922	1.00	2520	8.4	11.5	9.7	91
08...	0924	10.0	2520	8.4	11.5	9.7	91
08...	0926	20.0	2520	8.4	11.5	9.7	91
08...	0928	30.0	2520	8.4	11.5	9.5	89
08...	0930	40.0	2520	8.3	11.0	8.9	83
08...	0932	52.0	2530	8.3	11.0	8.4	78
MAY							
24...	0927	1.00	901	7.8	24.0	6.6	81
24...	0929	10.0	901	7.8	24.0	6.5	79
24...	0931	20.0	903	7.8	24.0	6.5	79
24...	0934	30.0	900	7.6	23.0	5.6	67
24...	0936	40.0	894	7.6	22.0	4.5	53
24...	0938	50.0	894	7.5	21.0	3.5	40
24...	0940	57.0	899	7.6	21.0	3.2	37
AUG							
14...	1011	1.00	880	8.4	29.0	7.7	102
14...	1013	10.0	880	8.3	28.5	7.3	96
14...	1015	20.0	880	7.9	28.0	3.8	50
14...	1017	30.0	963	7.5	27.0	0	0
14...	1019	40.0	956	7.6	27.0	0	0
14...	1021	50.0	996	7.6	26.5	0	0
14...	1023	55.0	998	7.7	26.5	0	0

BRAZOS RIVER MAIN STEM

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322345097421901 - LAKE GRANBURY SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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							
08...	0940	1.00	2520	8.5	12.0	10.6	101
08...	0942	10.0	2520	8.5	12.0	10.6	101
08...	0944	20.0	2520	8.4	12.0	10.4	99
08...	0946	30.0	2520	8.4	12.0	9.7	92
MAY							
24...	0947	1.00	899	8.0	25.0	7.2	89
24...	0949	10.0	900	8.0	25.0	7.1	88
24...	0957	20.0	898	7.9	24.5	6.9	85
24...	0958	31.0	892	7.8	24.0	5.7	70
AUG							
14...	1051	1.00	887	8.5	30.0	7.7	104
14...	1053	10.0	889	8.4	30.0	7.3	99
14...	1055	20.0	903	7.7	28.0	0	0
14...	1057	31.0	928	7.8	28.5	0	0

322341097420601 - LAKE GRANBURY SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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							
08...	0950	1.00	2520	8.5	12.0	10.6	101
08...	0952	10.0	2510	8.5	12.0	10.6	101
08...	0954	20.0	2520	8.5	12.0	10.4	99
08...	0956	30.0	2510	8.4	12.0	9.7	92
08...	0958	40.0	2520	8.4	11.5	9.7	91
08...	1000	50.0	2520	8.4	11.5	9.5	89
08...	1002	60.0	2520	8.3	11.5	8.2	77
MAY							
24...	1000	1.00	899	8.0	25.0	7.2	89
24...	1002	10.0	899	8.0	25.0	7.1	88
24...	1004	20.0	894	7.8	24.5	6.5	80
24...	1006	30.0	889	7.7	23.5	5.5	66
24...	1008	40.0	883	7.6	22.0	4.1	48
24...	1010	50.0	882	7.6	21.5	3.2	37
24...	1012	61.0	903	7.6	21.0	1.7	20
AUG							
14...	1031	1.00	887	8.5	30.0	7.7	104
14...	1033	10.0	889	8.4	30.0	7.4	100
14...	1035	20.0	888	7.7	28.0	1.5	20
14...	1037	30.0	1020	7.6	27.5	0	0
14...	1039	40.0	1100	7.6	27.5	0	0
14...	1042	50.0	1150	7.6	27.0	0	0
14...	1045	61.0	1020	7.6	26.5	0	0

322537097414501 - LAKE GRANBURY SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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							
08...	1022	1.00	2510	8.5	13.5	10.5	103
08...	1024	12.0	2440	8.4	13.0	10.3	100
MAY							
24...	1039	1.00	888	8.2	27.0	7.8	101
24...	1042	13.0	862	8.0	27.0	7.8	101
AUG							
14...	1127	1.00	908	8.3	31.0	6.8	93
14...	1129	10.0	910	8.2	30.5	6.0	82
14...	1132	15.0	905	7.7	30.0	0	0

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322422097423901 - LAKE GRANBURY SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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							
08...	1040	1.00	2510	8.4	15.0	9.9	101
08...	1042	10.0	2510	8.3	12.5	9.0	87
08...	1044	20.0	2510	8.2	12.0	8.5	81
08...	1046	30.0	2510	8.2	12.0	8.2	78
08...	1048	40.0	2510	8.1	12.0	7.4	70
08...	1050	50.0	2520	8.1	12.0	6.6	63
08...	1052	55.0	2520	8.1	12.0	6.3	60
MAY							
24...	1052	1.00	902	7.9	28.0	6.4	84
24...	1054	10.0	905	7.8	27.0	6.0	77
24...	1056	20.0	907	7.7	24.5	4.9	60
24...	1058	30.0	891	7.6	24.0	4.1	50
24...	1100	40.0	879	7.6	23.0	3.4	41
24...	1103	50.0	876	7.6	22.0	2.2	26
24...	1106	55.0	877	7.7	22.5	2.2	26
AUG							
14...	1145	1.00	921	8.2	31.5	5.8	80
14...	1147	10.0	919	8.0	29.5	4.4	59
14...	1149	20.0	1020	7.7	28.0	0.7	9
14...	1151	30.0	1110	7.7	28.0	0	0
14...	1153	40.0	1180	7.7	27.5	0	0
14...	1155	54.0	1210	7.8	27.5	0	0

322437097423901 - LAKE GRANBURY SITE DL

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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							
08...	1056	1.00	2510	8.4	15.5	9.8	101
08...	1058	10.0	2510	8.3	13.5	9.7	95
08...	1100	18.0	2510	8.3	13.0	8.8	86
MAY							
24...	1110	1.00	903	7.9	28.0	6.3	83
24...	1113	10.0	905	7.8	27.0	6.0	77
24...	1116	18.0	907	7.8	25.5	5.2	65
AUG							
14...	1200	1.00	923	8.1	32.0	5.2	73
14...	1202	10.0	920	8.0	30.0	4.2	57
14...	1205	19.0	993	7.8	29.0	0	0

322458097443101 - LAKE GRANBURY SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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							
08...	1107	1.00	2510	8.4	14.0	10.0	99
08...	1109	10.0	2510	8.4	13.5	10.0	98
08...	1111	20.0	2510	8.4	13.0	9.9	96
08...	1113	30.0	2480	8.3	12.0	9.2	87
08...	1115	40.0	2460	8.3	11.5	8.5	80
08...	1117	54.0	2460	8.2	11.0	8.4	78
MAY							
24...	1123	1.00	902	8.0	26.5	6.9	88
24...	1125	10.0	902	8.0	26.5	6.9	88
24...	1127	20.0	902	7.9	26.5	6.8	87
24...	1129	30.0	919	7.7	25.0	4.5	56
24...	1132	40.0	899	7.6	24.0	2.5	31
24...	1135	52.0	876	7.6	23.0	1.5	18
AUG							
14...	1212	1.00	919	8.3	31.5	7.0	97
14...	1214	10.0	920	8.2	31.0	6.8	93
14...	1216	20.0	971	7.7	29.0	1.5	20
14...	1218	30.0	1130	7.6	28.0	1.1	14
14...	1220	40.0	1190	7.6	28.0	0	0
14...	1222	51.0	1220	7.7	28.0	0	0

BRAZOS RIVER MAIN STEM

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322619097463301 - LAKE GRANBURY SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	HARDNESS TOTAL (MG/L AS CaCO3)	HARDNESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)
FEB										
08...	1132	1.00	2400	8.5	12.5	0.90	10.2	98	440	320
08...	1134	10.0	2400	8.5	12.5	--	10.1	97	--	--
08...	1136	20.0	2390	8.4	12.0	--	9.5	90	--	--
08...	1138	30.0	2390	8.3	11.5	--	8.3	78	--	--
08...	1140	40.0	2420	8.1	11.5	--	6.0	56	420	290
MAY										
24...	1153	1.00	926	8.1	27.0	0.30	7.3	94	220	96
24...	1156	10.0	927	8.0	26.5	--	6.8	87	--	--
24...	1200	20.0	931	7.8	26.0	--	5.2	66	--	--
24...	1204	30.0	928	7.6	25.0	--	3.7	46	--	--
24...	1208	39.0	916	7.6	24.5	--	1.8	22	220	90
AUG										
14...	1237	1.00	919	8.6	31.0	0.80	8.8	121	200	82
14...	1240	10.0	926	8.3	30.5	--	7.0	95	--	--
14...	1242	20.0	1110	7.7	29.0	--	3.1	41	--	--
14...	1245	30.0	1190	7.6	28.0	--	0	0	--	--
14...	1250	39.0	1220	7.7	28.0	--	0	0	270	130

DATE	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
FEB										
08...	120	35	340	7	6.8	130	320	510	--	5.2
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	110	35	340	7	7.2	130	320	510	--	5.9
MAY										
24...	67	14	93	3	4.5	130	100	150	<0.10	8.7
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	67	14	93	3	4.4	130	97	150	<0.10	9.7
AUG										
14...	57	14	98	3	4.7	120	84	160	0.20	8.0
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	75	20	140	4	4.9	140	120	220	0.20	11

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (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)	IRON, DIS-SOLVED (UG/L AS FE)	MANGANESE, DIS-SOLVED (UG/L AS MN)
FEB										
08...	1410	--	--	<0.100	--	--	0.70	0.020	20	<10
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	<0.100	--	--	0.60	0.030	20	10
08...	--	--	--	--	--	--	--	--	--	--
08...	1410	--	--	<0.100	--	--	0.70	0.030	10	70
MAY										
24...	515	0.280	0.020	0.300	<0.010	--	0.60	0.040	5	<1
24...	--	--	--	--	--	--	--	--	--	--
24...	--	0.270	0.030	0.300	0.050	0.75	0.80	0.040	40	<10
24...	--	0.350	0.050	0.400	0.060	0.44	0.50	0.080	20	10
24...	518	0.440	0.060	0.500	<0.010	--	0.50	0.070	10	47
AUG										
14...	497	--	<0.010	<0.100	0.010	1.5	1.5	0.020	3	8
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	<0.010	<0.100	0.020	0.58	0.60	0.040	<10	190
14...	--	--	<0.010	<0.100	0.060	0.84	0.90	0.040	<10	<10
14...	675	--	<0.010	<0.100	0.220	1.1	1.3	0.040	44	850

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322703097451401 - LAKE GRANBURY SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATURATION)
FEB							
08...	1202	1.00	2290	8.5	13.0	10.3	100
08...	1204	12.0	2330	8.4	13.0	9.6	93
MAY							
24...	1225	1.00	922	8.1	27.0	6.8	88
24...	1228	13.0	917	8.1	27.5	6.3	82
AUG							
14...	1318	1.00	919	8.6	31.5	8.7	121
14...	1320	13.0	924	8.4	31.5	6.6	91

322834097470801 - LAKE GRANBURY SITE HC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
FEB							
08...	1224	1.00	2200	8.5	12.5	0.70	9.8
08...	1226	10.0	2210	8.5	11.5	--	9.6
08...	1228	20.0	2190	8.4	11.0	--	8.9
08...	1230	32.0	2280	8.2	11.0	--	6.8
MAY							
24...	1247	1.00	964	8.2	27.0	--	7.4
24...	1249	10.0	969	8.0	27.0	--	6.6
24...	1252	20.0	980	7.9	26.5	--	5.5
24...	1255	31.0	947	7.6	25.5	--	2.4
AUG							
14...	1336	1.00	945	8.5	30.5	--	8.9
14...	1338	10.0	1050	8.3	29.5	--	7.4
14...	1340	20.0	1130	7.9	29.5	--	2.3
14...	1342	31.0	1140	7.9	29.5	--	0

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATURATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB						
08...	94	<0.100	0.60	0.020	20	<10
08...	90	--	--	--	--	--
08...	83	<0.100	0.50	0.030	20	<10
08...	63	<0.100	0.40	0.060	40	20
MAY						
24...	95	--	--	--	--	--
24...	85	--	--	--	--	--
24...	70	--	--	--	--	--
24...	30	--	--	--	--	--
AUG						
14...	121	--	--	--	--	--
14...	99	--	--	--	--	--
14...	31	--	--	--	--	--
14...	0	--	--	--	--	--

322819097483201 - LAKE GRANBURY SITE IC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATURATION)
FEB							
08...	1304	1.00	2160	8.4	13.0	9.7	94
08...	1306	10.0	2160	8.4	13.0	9.5	92
08...	1308	15.0	2160	8.3	13.0	8.7	84
MAY							
24...	1303	1.00	884	8.0	27.5	6.4	83
24...	1305	10.0	940	8.0	26.5	5.9	75
24...	1307	15.0	911	7.9	26.5	4.9	63
AUG							
14...	1351	1.00	1040	8.5	31.0	9.0	124
14...	1353	10.0	1020	7.9	29.5	3.8	51
14...	1355	15.0	867	8.0	29.5	2.1	28

BRAZOS RIVER MAIN STEM

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

323318097480101 - LAKE GRANBURY SITE JC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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							
08...	1330	1.00	1770	8.4	14.0	10.0	99
08...	1332	10.0	1670	8.2	12.5	8.8	84
08...	1334	23.0	1920	7.9	12.5	4.2	40
MAY							
24...	1327	1.00	960	8.1	27.5	8.2	107
24...	1329	10.0	960	8.0	27.0	7.5	97
24...	1332	23.0	959	8.0	27.5	7.3	95
AUG							
14...	1413	1.00	1160	8.4	32.0	8.1	113
14...	1415	10.0	1140	8.1	30.5	5.7	78
14...	1417	22.0	1080	7.9	28.5	0	0

323435097492001 - LAKE GRANBURY SITE KC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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										
08...	1349	1.00	1350	8.4	14.5	0.90	10.2	102	290	150
08...	1351	10.0	1350	8.4	12.5	--	9.7	93	--	--
08...	1353	15.0	1350	8.2	12.5	--	8.7	83	290	150
MAY										
24...	1342	1.00	918	8.0	26.5	0.20	7.8	100	220	95
24...	1345	10.0	917	8.0	26.5	--	7.5	96	--	--
24...	1350	22.0	916	8.0	27.0	--	7.5	97	220	96
AUG										
14...	1433	1.00	1420	8.5	31.5	0.60	8.0	111	290	150
14...	1437	10.0	1380	8.2	30.0	--	6.0	81	--	--
14...	1441	21.0	1180	7.6	27.5	--	0	0	250	120

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										
08...	81	21	160	4	4.9	140	170	240	--	2.5
08...	--	--	--	--	--	--	--	--	--	--
08...	80	21	160	4	5.1	130	180	240	--	2.6
MAY										
24...	65	14	94	3	4.3	120	97	160	<0.10	8.9
24...	--	--	--	--	--	--	--	--	--	--
24...	64	14	94	3	4.2	120	99	160	<0.10	9.0
AUG										
14...	83	21	180	5	5.1	150	160	270	0.30	8.8
14...	--	--	--	--	--	--	--	--	--	--
14...	69	19	130	4	4.7	130	110	200	0.20	11
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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB										
08...	762	--	--	<0.100	--	--	0.40	0.040	8	6
08...	--	--	--	--	--	--	--	--	--	--
08...	769	--	--	<0.100	--	--	0.60	0.100	13	19
MAY										
24...	518	--	<0.010	0.300	<0.010	--	0.60	0.070	5	2
24...	--	--	--	--	--	--	--	--	--	--
24...	517	0.280	0.020	0.300	<0.010	--	0.50	0.080	5	2
AUG										
14...	816	--	0.020	<0.100	0.470	0.83	1.3	0.070	3	32
14...	--	--	<0.010	<0.100	<0.010	--	0.70	0.060	40	400
14...	623	--	<0.010	<0.100	0.010	1.6	1.6	0.050	<200	1400

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); 21 years (water years 1970-90) regulated, 1,119 ft³/s (810,700 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, 79,800 ft³/s Apr. 28 at 1600 hours (gage height, 35.76 ft); minimum daily, 25 ft³/s July 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	346	371	135	e51	633	979	3660	18600	1640	86	988	505
2	681	95	71	e49	1290	377	4480	29200	7180	65	386	645
3	949	56	50	e47	397	113	1450	45400	2150	55	204	570
4	526	45	48	e45	134	84	1010	48700	6070	165	1290	514
5	654	45	55	e44	100	79	1050	50200	4830	399	2140	514
6	306	40	61	e43	95	76	1630	39300	13300	223	1170	521
7	351	52	59	e42	258	76	2560	39100	16800	324	1020	520
8	481	53	54	e42	349	997	2610	39200	16600	446	518	378
9	497	49	144	e42	164	901	2100	30500	20800	451	367	409
10	384	53	268	e42	715	1010	1150	12500	10100	230	211	393
11	124	64	92	43	349	8260	777	13800	4230	67	199	366
12	149	383	53	45	119	4380	1030	12300	2960	40	207	369
13	88	387	40	48	77	6900	1030	2980	3440	39	196	256
14	174	138	41	49	293	8920	2740	4160	3330	58	809	174
15	413	76	45	49	669	5040	5900	4430	2800	354	993	71
16	430	55	141	48	611	5910	8420	4400	3010	229	1010	35
17	238	72	766	54	326	3100	5170	3960	3810	67	1100	194
18	78	76	1610	574	370	2800	3310	2050	3160	43	1230	470
19	54	71	632	744	380	2770	3470	3000	2810	45	923	373
20	46	54	141	857	156	2620	7450	2030	1980	30	307	180
21	36	46	85	334	115	2040	14100	2040	1960	25	177	185
22	36	55	27	90	1160	2040	28900	2010	1960	107	404	1860
23	36	60	140	554	370	2690	30700	2010	1940	164	421	2210
24	37	60	401	677	123	2680	24900	2150	2000	776	414	2220
25	41	75	420	294	88	2130	18300	2830	1960	347	410	2300
26	42	65	740	100	75	2120	37000	2020	1660	181	453	4190
27	43	47	e960	81	67	2100	65000	2040	620	176	456	4380
28	43	43	e1650	56	279	2160	76800	2050	529	176	447	6560
29	322	416	e590	43	---	2160	55100	2040	493	182	933	2200
30	290	404	e130	43	---	1530	18900	2920	255	591	1020	2540
31	646	---	e54	51	---	2120	---	3480	---	979	988	---
TOTAL	8541	3506	9703	5281	9762	79162	430697	431400	144377	7120	21391	36102
MEAN	276	117	313	170	349	2554	14360	13920	4813	230	690	1203
MAX	949	416	1650	857	1290	8920	76800	50200	20800	979	2140	6560
MIN	36	40	27	42	67	76	777	2010	255	25	177	35
AC-FT	16940	6950	19250	10470	19360	157000	854300	855700	286400	14120	42430	71610

CAL YR 1989 TOTAL 539959 MEAN 1479 MAX 50400 MIN 12 AC-FT 1071000
WTR YR 1990 TOTAL 1187042 MEAN 3252 MAX 76800 MIN 25 AC-FT 2354000

e Estimated

BRAZOS RIVER BASIN

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 mi².

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 fair. 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 mi² above this station.

AVERAGE DISCHARGE.--44 years (water years 1925, 1948-90), 68.2 ft³/s (2.26 in/yr), 49,410 acre-ft/yr.

Figures of average discharge for water years 1986, 1987, 1988, and 1989, not previously published, or published in error, are given herein;

--40 years (water years 1925, 1948-86), 62.8 ft³/s (2.08 in/yr), 45,500 acre-ft/yr; the figures published in WRD TX-86-2 are incorrect.

--41 years (water years 1925, 1948-87), 63.1 ft³/s (2.09 in/yr), 45,720 acre-ft/yr.

--42 years (water years 1925, 1948-88), 62.0 ft³/s (2.05 in/yr), 44,920 acre-ft/yr.

--43 years (water years 1925, 1948-89), 65.3 ft³/s (2.16 in/yr), 47,310 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s Oct. 4, 1959 (gage height, 25.4 ft), from rating curve extended above 32,000 ft³/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 ft³/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 ft³/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, 25,600 ft³/s Apr. 26 at 1630 hours (gage height, 19.38 ft); minimum daily, 14.0 ft³/s Oct. 17.

Water year 1987.--Maximum discharge, 5,340 ft³/s May 29 at 0900 hours (gage height, 9.77 ft); minimum daily, 5.6 ft³/s Aug. 26.

Water year 1988.--Maximum discharge, 4,890 ft³/s June 1 at 1100 hours (gage height, 9.33 ft); no flow Aug. 15 to Sept. 28.

Water year 1989.--Maximum discharge, 31,500 ft³/s Mar. 28 0530 hours (gage height, 21.08 ft); minimum daily 0.26 ft³/s Oct. 24.

08091500 PALUXY RIVER AT GLEN ROSE, TX--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	15	19	34	35	744	50	25	234	48	14	8.2
2	18	15	18	32	36	360	49	25	163	45	13	7.7
3	17	15	17	32	35	247	46	25	142	47	13	7.2
4	17	18	16	30	34	187	45	109	135	46	12	6.7
5	20	17	16	30	33	157	45	42	112	42	12	6.3
6	30	18	16	30	39	135	47	31	92	38	12	6.1
7	33	17	19	29	37	122	46	27	80	35	11	6.5
8	33	17	19	28	38	111	45	27	70	33	11	6.4
9	29	16	20	48	36	102	43	28	127	32	10	6.3
10	26	17	19	53	34	93	42	25	333	30	11	6.1
11	25	17	19	50	33	90	41	24	902	28	11	5.9
12	26	17	22	42	32	85	41	24	1460	27	10	6.6
13	24	17	22	39	31	82	39	22	1400	26	10	7.1
14	22	16	23	37	31	78	37	22	506	25	9.3	6.8
15	21	16	25	35	35	75	35	203	295	25	8.9	6.8
16	19	16	25	34	34	72	34	198	213	25	8.4	6.5
17	19	16	25	41	34	130	34	82	166	26	8.0	6.4
18	18	16	42	63	31	131	33	53	176	25	7.6	7.7
19	17	15	59	53	30	100	32	45	174	23	7.2	9.0
20	17	15	50	49	99	86	31	60	133	22	6.7	8.3
21	16	14	41	45	162	76	30	47	208	21	6.5	7.3
22	19	15	43	42	100	72	30	39	115	21	6.3	6.7
23	24	15	55	41	76	72	29	33	93	20	6.1	6.4
24	23	14	53	40	95	75	29	248	81	19	6.1	6.1
25	19	27	49	37	101	68	27	294	71	18	5.9	5.9
26	19	34	44	36	209	64	27	103	64	18	5.6	5.5
27	18	32	41	35	340	62	26	64	58	17	7.7	5.1
28	17	25	39	35	1460	60	25	188	54	17	9.1	5.1
29	16	23	37	34	---	57	25	3310	51	16	9.1	5.1
30	16	21	35	33	---	55	25	1100	52	15	8.8	4.8
31	16	---	34	31	---	52	---	414	---	15	8.4	---
TOTAL	655	546	962	1198	3290	3900	1088	6937	7760	845	285.7	196.6
MEAN	21.1	18.2	31.0	38.6	117	126	36.3	224	259	27.3	9.22	6.55
MAX	33	34	59	63	1460	744	50	3310	1460	48	14	9.0
MIN	16	14	16	28	30	52	25	22	51	15	5.6	4.8
AC-FT	1300	1080	1910	2380	6530	7740	2160	13760	15390	1680	567	390
CAL YR 1986	TOTAL	29200.1	MEAN	80.0	MAX	3690	MIN	2.1	AC-FT	57920		
WTR YR 1987	TOTAL	27663.3	MEAN	75.8	MAX	3310	MIN	4.8	AC-FT	54870		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	6.2	10	11	11	10	9.0	6.5	1740	7.7	.33	.00
2	4.2	6.4	10	11	10	11	8.7	6.4	255	9.6	.28	.00
3	4.1	6.5	10	11	10	11	8.5	5.6	1110	25	.27	.00
4	3.8	6.7	10	11	10	11	8.1	5.1	327	48	.22	.00
5	4.1	6.8	10	11	10	10	8.0	4.7	98	13	.19	.00
6	4.0	6.8	10	11	11	10	7.6	4.4	51	7.8	.17	.00
7	3.8	6.9	11	12	11	10	7.2	4.1	34	6.1	.17	.00
8	3.8	7.8	11	11	11	9.9	6.8	6.8	26	5.0	.16	.00
9	3.6	8.2	10	11	11	9.5	6.6	5.5	21	4.4	.13	.00
10	3.6	8.0	10	11	11	9.5	6.5	4.3	17	4.3	.08	.00
11	3.4	7.7	10	11	11	9.6	6.4	3.5	14	6.3	.05	.00
12	3.3	7.7	10	11	10	9.5	6.4	3.2	13	20	.08	.00
13	3.5	8.1	10	11	10	9.2	6.4	2.9	11	20	.05	.00
14	3.8	8.5	11	11	11	9.0	6.5	2.7	9.9	14	.02	.00
15	3.9	11	10	11	10	9.0	6.5	2.3	9.2	8.5	.00	.00
16	4.1	18	10	11	10	9.0	6.5	2.6	8.3	6.2	.00	.00
17	3.8	18	10	11	11	10	7.1	2.6	8.3	4.9	.00	.00
18	4.4	14	10	11	12	10	7.2	2.5	7.6	4.0	.00	.00
19	6.1	11	15	11	12	10	7.2	3.9	6.7	3.4	.00	.00
20	5.5	10	15	11	12	9.5	7.3	4.1	6.0	3.4	.00	.00
21	5.2	10	15	11	11	8.3	6.8	4.8	5.8	2.6	.00	.00
22	4.9	9.9	15	10	11	7.9	6.4	2.8	5.1	2.3	.00	.00
23	5.0	10	13	10	10	8.2	6.3	2.1	4.7	2.0	.00	.00
24	5.5	10	13	10	10	8.2	5.6	1.8	4.4	1.6	.00	.00
25	5.7	12	13	9.9	10	7.9	6.2	1.7	4.0	1.5	.00	.00
26	5.9	11	15	10	10	7.8	5.2	1.6	3.7	1.2	.00	.00
27	5.6	11	16	10	10	7.4	4.7	1.3	4.6	.91	.00	.00
28	5.2	11	14	10	10	7.6	4.5	.98	128	.74	.00	.00
29	5.2	11	13	10	10	8.7	5.4	.78	18	.67	.00	5.8
30	5.2	11	12	10	---	8.4	8.0	.75	13	.68	.00	12
31	5.6	---	12	11	---	8.5	---	1.1	---	.46	.00	---
TOTAL	140.3	291.2	364	332.9	307	285.6	203.6	103.41	3964.3	236.26	2.20	17.80
MEAN	4.53	9.71	11.7	10.7	10.6	9.21	6.79	3.34	132	7.62	.071	.59
MAX	6.1	18	16	12	12	11	9.0	6.8	1740	48	.33	12
MIN	3.3	6.2	10	9.9	10	7.4	4.5	.75	3.7	.46	.00	.00
AC-FT	278	578	722	660	609	566	404	205	7860	469	4.4	35
CAL YR 1987	TOTAL	26295.8	MEAN	72.0	MAX	3310	MIN	3.3	AC-FT	52160		
WTR YR 1988	TOTAL	6248.57	MEAN	17.1	MAX	1740	MIN	.00	AC-FT	12390		

BRAZOS RIVER BASIN

08091500 PALUXY RIVER AT GLEN ROSE, TX--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	2.5	2.0	4.2	e7.5	13	912	28	60	106	32	18
2	29	2.4	2.1	4.5	e6.5	12	743	28	55	98	36	17
3	9.4	2.1	2.1	4.3	e6.4	12	621	36	63	88	40	17
4	4.6	1.8	2.4	3.5	e6.3	13	530	1080	138	82	37	16
5	3.4	1.2	2.4	3.5	e6.2	13	322	563	184	77	33	16
6	2.3	.87	2.3	3.9	e6.2	12	140	163	92	72	30	16
7	1.6	.71	2.8	3.9	e6.3	12	91	114	884	68	212	15
8	1.2	.56	2.6	3.8	6.3	12	68	90	525	71	227	15
9	.96	.56	2.7	3.8	6.0	12	54	70	167	73	125	15
10	.78	.38	4.6	3.7	6.0	11	46	55	114	62	80	17
11	.69	.40	5.3	3.9	6.1	11	40	48	2150	58	58	28
12	.57	.47	4.5	4.5	6.5	11	38	44	1030	54	48	31
13	.52	.54	4.4	5.2	6.8	10	178	100	5660	51	41	64
14	.52	.65	4.1	4.9	6.7	10	539	128	7060	50	38	164
15	.52	.73	3.7	5.8	8.4	9.6	250	82	2380	50	37	61
16	.50	.82	3.3	5.1	13	9.5	152	1760	1710	48	36	39
17	.38	.96	3.3	4.5	187	9.5	104	9670	1180	44	35	32
18	.37	.63	3.2	4.5	237	9.3	82	2930	753	41	35	28
19	.28	1.0	4.5	4.4	58	9.1	68	1890	469	39	33	26
20	.33	1.2	3.7	4.2	35	9.3	57	1400	334	37	31	24
21	.33	1.3	2.7	4.0	26	11	52	1090	265	36	29	23
22	.61	2.2	3.4	3.9	21	11	47	678	218	36	27	22
23	.43	2.2	4.0	4.0	18	10	43	417	189	35	26	20
24	.26	1.9	4.5	4.3	16	9.7	39	277	169	35	24	20
25	.36	2.4	3.7	4.7	15	9.5	36	166	157	34	23	20
26	3.1	2.9	3.6	5.5	15	9.5	34	133	182	34	22	19
27	2.3	3.2	3.7	6.4	14	9.5	33	111	155	33	21	19
28	2.0	2.8	3.6	18	13	8750	31	97	134	83	21	19
29	1.4	2.3	4.0	13	---	1860	29	83	121	73	20	19
30	1.5	2.1	4.0	19	---	1230	28	75	112	49	19	19
31	2.6	---	4.3	12	---	1050	---	67	---	37	18	---
TOTAL	92.81	43.78	107.5	180.9	766.2	13180.5	5407	23473	26710	1754	1494	859
MEAN	2.99	1.46	3.47	5.84	27.4	425	180	757	890	56.6	48.2	28.6
MAX	29	3.2	5.3	19	237	8750	912	9670	7060	106	227	164
MIN	.26	.38	2.0	3.5	6.0	9.1	28	28	55	33	18	15
AC-FT	184	87	213	359	1520	26140	10720	46560	52980	3480	2960	1700
CAL YR 1988	TOTAL 5697.16 MEAN 15.6 MAX 1740 MIN .00 AC-FT 11300											
WTR YR 1989	TOTAL 74068.69 MEAN 203 MAX 9670 MIN .26 AC-FT 146900											

e Estimated

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	25	19	20	38	23	62	915	535	45	36	27
2	18	22	19	19	65	25	58	7660	451	43	47	26
3	18	20	19	19	38	23	52	6850	222	42	52	26
4	17	19	19	18	30	22	49	2700	897	41	266	26
5	17	19	19	18	25	21	46	1940	348	40	352	26
6	17	19	19	18	23	21	103	1280	210	38	483	25
7	17	19	19	18	22	24	103	844	161	38	157	25
8	17	18	19	18	21	25	62	600	134	37	96	25
9	17	18	19	18	22	26	54	461	118	37	70	40
10	17	18	19	17	23	25	52	362	108	36	59	26
11	16	18	19	17	22	1460	49	329	100	35	50	25
12	16	18	18	17	21	677	46	453	93	35	45	25
13	15	18	18	17	20	310	45	329	88	35	40	25
14	15	19	18	17	20	170	395	270	83	34	37	24
15	15	18	18	17	19	125	233	240	79	34	36	24
16	15	17	18	18	19	93	108	221	75	35	34	24
17	14	17	18	21	18	72	90	201	70	36	34	24
18	15	18	18	26	18	62	73	185	67	37	34	33
19	16	18	19	41	19	54	67	185	64	39	32	33
20	16	19	19	30	19	49	661	175	61	41	31	25
21	16	19	e19	25	30	46	952	159	59	38	30	24
22	16	22	e19	23	33	45	317	144	57	35	30	24
23	16	20	e19	21	31	43	189	134	54	38	29	23
24	16	20	e19	20	27	42	141	127	70	52	30	22
25	17	20	19	18	25	42	118	120	59	79	29	22
26	17	19	19	18	23	44	12000	117	53	48	29	22
27	17	19	19	18	22	45	3340	117	50	38	29	21
28	18	19	19	18	22	52	2320	356	49	36	29	21
29	18	18	19	18	---	52	1820	185	47	34	28	20
30	22	18	19	18	---	65	1220	1570	46	39	27	19
31	23	---	20	18	---	83	---	983	---	41	27	---
TOTAL	523	571	583	619	715	3866	24825	30212	4508	1236	2308	752
MEAN	16.9	19.0	18.8	20.0	25.5	125	827	975	150	39.9	74.5	25.1
MAX	23	25	20	41	65	1460	12000	7660	897	79	483	40
MIN	14	17	18	17	18	21	45	117	46	34	27	19
AC-FT	1040	1130	1160	1230	1420	7670	49240	59930	8940	2450	4580	1490
CAL YR 1989	TOTAL 75501.6 MEAN 207 MAX 9670 MIN 3.5 AC-FT 149800											
WTR YR 1990	TOTAL 70718 MEAN 194 MAX 12000 MIN 14 AC-FT 140300											

e Estimated

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.

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, 160,600 acre-ft May 3 at 0630 hours (elevation, 777.91 ft); minimum, 143,100 acre-ft Nov. 26 (elevation, 772.57 ft).

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

772.00	141,300	776.00	154,200
774.00	147,700	778.00	160,900

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146800	144600	143500	146100	150300	150300	152400	154200	152500	150700	147900	148100
2	146800	144600	143700	146300	150300	150300	152400	159600	152400	150600	147900	148100
3	146700	144500	143700	146400	150300	150200	152500	159100	152600	150600	147900	148100
4	146600	144400	143700	146500	150200	150200	152500	157300	152600	150500	148900	148000
5	146500	144400	143900	146600	150200	150200	152500	156100	152500	150400	149300	148100
6	145200	144300	144000	146700	150200	150200	152600	155200	152300	150300	149300	148000
7	146300	144300	144100	146900	150100	150300	152600	154500	152100	150100	149200	148000
8	146300	144200	144200	147100	150100	150300	152600	154000	152000	150000	149100	148500
9	146200	144200	144200	147200	150300	150300	152600	153600	151900	149900	149000	148400
10	146200	144100	144400	147300	150300	150300	152500	153300	151800	149800	148900	148400
11	146000	144000	144400	147400	150200	152100	152500	153200	151800	149700	148900	148400
12	146000	144000	144400	147500	150200	153900	152500	153000	151700	149600	148800	148400
13	145900	143900	144500	147600	150200	153900	152400	152800	151600	149400	148800	148400
14	145800	143900	144500	147700	150100	153700	152400	152700	151500	149300	148700	148400
15	145800	143800	144700	147900	150100	153500	152500	152600	151400	149100	148600	148500
16	145600	143600	144700	148100	150000	153300	152500	152500	151300	149100	148500	148500
17	145500	143400	144700	148400	150000	153100	152400	152400	151300	148900	148500	148500
18	145400	143400	144800	149000	150000	152900	152300	152300	151200	148900	148400	148500
19	145300	143400	144900	149300	149900	152800	152300	152200	151100	148800	148300	148500
20	145200	143400	145000	149400	149900	152700	153800	152200	151100	148700	148300	148600
21	145100	143400	145300	149600	150300	152600	153800	152200	150900	148600	148200	148600
22	145000	143400	145300	149700	150200	152600	153600	152100	150900	148500	148200	148800
23	145000	143400	145300	149800	150200	152500	153300	152000	150800	148600	148200	148600
24	144900	143300	145300	149900	150200	152300	153000	151900	151200	148600	148200	148600
25	144900	143200	145300	149900	150100	152300	152900	151800	151200	148500	148100	148500
26	144800	143100	145300	150000	150100	152200	157100	151800	151200	148400	148100	148500
27	144700	143200	145400	149900	150100	152200	156100	151900	151100	148300	148100	148600
28	144700	143300	145400	149900	150200	152300	155300	151900	151000	148200	148200	148600
29	144600	143300	145500	149900	---	152300	---	152100	150900	148200	148200	148600
30	144900	143300	145600	149800	---	152300	---	152300	150800	148100	148200	148700
31	144800	---	145700	149900	---	152300	---	152500	---	147900	148200	---
MAX	146800	144600	145700	150000	150300	153900	157100	159600	152600	150700	149300	148800
MIN	144600	143100	143500	146100	149900	150200	152300	151800	150800	147900	147900	148000
(↑)	773.10	772.63	773.38	774.67	774.78	775.42	775.93	775.47	774.95	774.07	774.14	774.30
(Φ)	-2100	-1500	+2400	+4200	+300	+2100	+3000	-2800	-1700	-2900	+300	+500
CAL YR 1989	MAX	160200	MIN	143100	(Φ)	+200						
WTR YR 1990	MAX	159600	MIN	143100	(Φ)	+1800						

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

(Φ) Change in contents, in acre-feet.

BRAZOS RIVER BASIN

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.--No estimated daily discharges. Records good. No known diversions between Squaw Creek Reservoir and this station. Flow regulated since Feb. 15, 1977, by Squaw Creek Reservoir. During the year, low flows were sustained by releases from 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.--14 years (water years 1977-90) 18.0 ft³/s (13,040 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, 5,630 ft³/s May 3 at 0045 hours (gage height, 9.90 ft), from rating curve extended above 1,000 ft³/s on basis of velocity-area study); minimum, 2.5 ft³/s Aug. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	13	14	13	23	9.7	32	297	48	5.3	4.3	3.4
2	12	13	14	13	14	8.6	34	1340	47	5.0	4.3	3.4
3	12	13	14	13	16	8.4	30	3060	48	5.0	4.6	3.4
4	12	13	14	13	13	8.1	27	1490	65	4.3	4.1	3.6
5	12	13	14	13	13	7.9	26	854	53	4.0	8.4	3.7
6	12	13	14	13	14	7.9	40	545	43	4.0	7.5	3.6
7	12	13	14	13	13	7.8	37	389	34	4.3	5.3	3.4
8	12	13	14	13	13	7.4	33	292	28	4.3	5.3	4.3
9	12	13	14	12	14	7.4	29	232	24	4.3	4.3	4.3
10	12	13	14	13	14	7.4	29	176	21	4.3	4.3	4.0
11	12	13	14	13	14	251	22	138	20	4.9	4.3	4.0
12	12	13	14	13	14	286	21	134	17	6.5	4.2	4.0
13	12	13	14	13	13	237	19	101	13	5.3	4.0	4.0
14	12	13	14	13	14	198	30	74	11	4.9	4.0	3.9
15	12	14	14	13	15	169	42	55	9.5	4.9	4.0	3.6
16	12	15	13	13	15	139	40	48	8.4	4.9	3.9	3.4
17	12	14	13	15	15	117	81	42	8.4	4.9	3.7	3.4
18	12	14	13	16	15	90	52	35	7.0	4.9	3.7	3.4
19	13	14	13	16	15	67	45	33	6.1	4.9	3.5	3.4
20	13	14	13	14	15	48	111	33	5.7	4.6	3.4	4.2
21	13	14	13	14	19	40	262	32	5.7	4.6	3.4	4.3
22	12	15	13	14	20	35	214	28	5.7	4.6	3.4	4.5
23	11	15	13	14	13	32	179	24	5.7	5.3	3.6	4.1
24	11	14	13	15	9.5	29	153	20	13	4.9	3.8	4.0
25	11	14	13	15	9.1	26	129	18	8.8	4.6	3.4	4.0
26	12	14	12	13	8.9	24	935	16	6.5	4.3	3.4	3.9
27	12	14	13	13	9.0	22	924	16	6.1	4.3	3.4	3.7
28	12	14	13	13	11	24	636	21	5.7	4.3	3.2	3.5
29	13	14	13	13	---	24	462	19	5.7	4.3	3.2	3.4
30	14	14	13	13	---	34	388	90	5.3	4.3	3.2	3.4
31	14	---	13	14	---	35	---	48	---	4.3	3.2	---
TOTAL	377	409	417	419	391.5	2007.6	5062	9700	585.3	145.3	165.2	113.2
MEAN	12.2	13.6	13.5	13.5	14.0	64.8	169	313	19.5	4.69	5.33	3.77
MAX	14	15	14	16	23	286	935	3060	65	6.5	4.1	4.5
MIN	11	13	12	12	8.9	7.4	19	16	5.3	4.0	3.2	3.4
AC-FT	748	811	827	831	777	3980	10040	19240	1160	288	328	225
CAL YR 1989	TOTAL	31838.8	MEAN	87.2	MAX	3010	MIN	5.4	AC-FT	63150		
WTR YR 1990	TOTAL	19792.1	MEAN	54.2	MAX	3060	MIN	3.2	AC-FT	39260		

BRAZOS RIVER BASIN

241

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 mi².

PERIOD OF RECORD.--July 1924 to September 1925, November 1947 to September 1985, October 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 mi² 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 ft³/s (47,890 acre-ft/yr); 21 years (water years 1965-85) regulated, 81.2 ft³/s (58,830 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 62,200 ft³/s May 7, 1969 (gage height, 31.23 ft), from rating curve extended above 22,200 ft³/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 height 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)
Feb. 1	1000	3,840	8.09	May 30	0645	1,390	5.23
Mar. 14	1900	1,670	5.59	May 31	1415	2,540	6.63
Apr. 26	1815	*23,700	*22.63	June 3	2030	1,310	5.13
May 3	0900	20,300	20.83				

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 contents, 1,713,000 acre-ft May 9 at 2200 hours (elevation, 564.94 ft); minimum, 565,300 acre-ft Dec. 24 (elevation, 530.27 ft).

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

530.0	559,400	548.0	1,053,000	561.0	1,542,000
535.0	675,700	552.0	1,192,000	563.0	1,627,000
540.0	807,600	555.0	1,304,000	564.0	1,671,000
544.0	925,700	558.0	1,420,000	565.0	1,716,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	636500	615300	599700	576200	589000	588800	640500	1239000	901100	630600	605700	602000
2	634800	612000	599900	576000	593100	588800	642200	1282000	875800	628700	604600	602300
3	635100	609900	598600	576600	594000	588600	638600	1413000	845300	626600	604300	600600
4	635300	608800	597400	576800	592900	587700	632500	1504000	815300	624800	606400	599000
5	634400	608100	597000	576800	592400	586100	628000	1572000	782300	623100	612700	597600
6	635100	606900	597000	577100	592000	587200	626400	1615000	763800	622000	613900	595400
7	633900	607100	597900	576800	591300	590400	630400	1651000	784500	619900	613600	594000
8	633200	607100	595100	575700	591300	590400	634800	1687000	809000	619000	613200	594700
9	632200	605700	593500	576000	592600	591300	636500	1711000	811600	618300	613900	596000
10	632000	605300	595600	575100	592200	593300	636500	1690000	791300	616900	613200	596300
11	629700	604800	594500	575300	592600	607100	633400	1667000	753500	615500	613200	596700
12	628500	604100	591300	574400	590400	626200	630400	1672000	711500	615000	612000	597200
13	627300	604600	589900	574400	589300	633900	629400	1649000	681900	612200	610400	597600
14	626200	604800	588400	573500	590600	654200	633200	1609000	664300	611300	609200	597600
15	625500	605000	587500	573500	589900	658400	645600	1584000	654200	611500	608500	597600
16	626400	604100	584800	573500	590400	664500	658100	1539000	651700	610100	608100	597900
17	625000	603600	584100	575100	590600	664300	663500	1501000	651200	610600	607600	597400
18	624800	603200	585700	577500	590600	663000	663300	1459000	650300	610800	609400	596500
19	623600	602900	585700	579700	591500	659800	661300	1420000	648300	611100	610600	595800
20	622700	602700	583200	580600	590400	656900	663000	1380000	644400	610600	610100	596300
21	621500	602000	583200	580800	592600	651700	677700	1342000	641000	610600	610100	596700
22	620800	604600	575700	579900	593100	649000	713900	1299000	641000	611100	606900	600600
23	620100	602000	567800	579700	592200	646100	748100	1256000	640300	609200	606000	603600
24	619400	601300	565600	579500	591700	648500	767100	1210000	641300	610400	604600	606900
25	618500	601600	567200	578800	590200	648100	767300	1172000	640100	609700	603900	609400
26	616900	600900	569400	578400	589500	645900	894300	1130000	640500	608800	604100	615900
27	616200	601800	572900	580200	588800	647300	1025000	1092000	638600	607400	603200	623100
28	615000	600600	574400	579000	589900	647100	1147000	1052000	635800	607400	603200	635100
29	613600	599500	576000	576800	---	648300	1244000	1006000	633400	608100	601600	638900
30	614300	599900	576600	577700	---	645100	1243000	972900	632200	606000	601100	641700
31	613400	---	576200	579700	---	641500	---	938600	---	606000	601100	---
MAX	636500	615300	599900	580800	594000	664500	1244000	1711000	901100	630600	613900	641700
MIN	613400	599500	565600	573500	588800	586100	626400	938600	632200	606000	601100	594000
(↑)	532.41	531.83	530.77	530.93	531.39	533.61	553.39	544.42	533.22	532.09	531.88	533.62
(Φ)	-24500	-13500	-23700	+3500	+10200	+51600	+601500	-304400	-306400	-26200	-4900	+40600
CAL YR 1989	MAX	999500	MIN	388100	(Φ)	+187700						
WTR YR 1990	MAX	1711000	MIN	565600	(Φ)	+3800						

(↑) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.

BRAZOS RIVER MAIN STEM

243

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, 1948.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,560 microsiemens Apr. 25-27; minimum daily, 860 microsiemens Sept. 22.

WATER TEMPERATURE: Maximum daily, 27.0°C several days during June and July; minimum daily, 6.0°C Dec. 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 18...	1445	76	1180	8.2	--	240	120	70	17
DEC 01...	1315	46	1320	8.0	12.0	260	120	74	18
JAN 23...	1115	432	1370	8.0	14.0	280	150	78	20
MAR 15...	1430	4570	1360	8.2	13.5	270	140	75	19
JUN 28...	1030	195	885	7.8	27.0	210	93	63	13
AUG 21...	0810	132	895	7.5	27.0	200	81	62	12
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 CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
OCT 18...	140	4	5.5	120	140	210	0.30	7.6	663
DEC 01...	160	4	5.6	130	150	230	0.30	7.4	726
JAN 23...	160	4	5.6	130	160	250	0.30	7.2	760
MAR 15...	160	4	5.7	130	150	240	0.20	6.5	734
JUN 28...	93	3	4.6	120	86	150	0.20	6.5	487
AUG 21...	88	3	5.2	120	89	140	0.50	6.6	477

BRAZOS RIVER MAIN STEM

08092600 BRAZOS RIVER AT WHITNEY DAM NEAR WHITNEY, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	18917	1270	713	36400	240	12300	160	8000	270
NOV. 1989	7371	1290	720	14300	240	4820	160	3140	270
DEC. 1989	21608	1320	739	43100	250	14600	160	9460	280
JAN. 1990	11550	1370	772	24100	260	8190	170	5280	290
FEB. 1990	10638	1350	760	21800	260	7410	170	4790	280
MAR. 1990	82950	1390	778	174000	270	59400	170	38200	290
APR. 1990	218540	1520	856	505000	300	174700	190	110600	310
MAY 1990	713900	1110	620	1195000	210	395500	140	263000	240
JUNE 1990	316307	926	513	438000	170	141400	110	96700	210
JULY 1990	18162	892	493	24200	160	7770	110	5340	200
AUG. 1990	20902	884	489	27600	160	8860	110	6090	200
SEPT 1990	12335.6	881	487	16200	160	5210	110	3580	200
TOTAL	1453180.6	**	**	2521000	**	840000	**	554000	**
WTD.AVG.	3981	1150	642	**	210	**	140	**	250

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1100	1280	1300	1350	1360	1370	1420	1440	945	901	887	880
2	1100	1270	1300	1350	1360	1370	1460	1420	942	900	888	880
3	1140	1270	1300	1350	1350	1370	1500	1410	943	903	887	880
4	1260	1270	1300	1350	1350	1370	1510	1300	938	903	888	880
5	1300	1270	1300	1350	1350	1370	1530	1260	943	901	887	880
6	1320	1270	1310	1350	1350	1370	1440	1230	947	900	892	880
7	1170	1270	1310	1350	1350	1320	1450	1350	925	901	885	880
8	1150	1270	1310	1380	1350	1370	1420	1350	933	900	885	880
9	1330	1270	1310	1380	1350	1370	1450	1170	920	898	886	880
10	1430	1270	1320	1380	1350	1370	1450	1170	921	897	886	880
11	1450	1270	1310	1360	1350	1370	1430	1250	917	898	884	880
12	1420	1280	1320	1330	1350	1390	1460	1200	916	896	881	880
13	1440	1280	1320	1360	1350	1370	1450	1150	914	893	884	880
14	1400	1290	1320	1350	1350	1390	1440	1160	911	875	884	880
15	1250	1300	1320	1380	1350	1380	1440	1080	907	878	882	880
16	1350	1300	1320	1400	1350	1380	1440	1040	905	883	882	880
17	1190	1310	1330	1360	1350	1380	1470	1020	901	893	881	880
18	1200	1310	1330	1410	1350	1380	1460	1040	899	891	880	880
19	1200	1310	1320	1410	1350	1380	1460	1010	900	885	882	880
20	1220	1310	1330	1360	1350	1380	1460	985	899	887	884	880
21	1230	1310	1330	1380	1350	1380	1500	993	901	884	881	880
22	1230	1310	1320	1380	1350	1380	1510	980	902	876	883	860
23	1230	1310	1310	1380	1360	1380	1510	975	899	878	883	880
24	1230	1320	1320	1390	1360	1380	1540	978	900	881	881	880
25	1240	1320	e1320	1370	1360	1410	1560	981	893	878	887	880
26	1250	1320	1320	1380	1360	1400	1560	968	894	878	882	880
27	1270	1320	1320	1380	1360	1400	1560	961	894	878	882	880
28	1280	1320	1320	1370	1360	1400	1550	954	897	880	882	880
29	1290	1320	1320	1370	---	1400	1540	956	898	879	882	890
30	1280	1320	1320	1380	---	1390	1520	948	898	878	884	880
31	1260	---	1310	1380	---	1400	---	948	---	879	880	---
MEAN	1260	1290	1320	1370	1350	1380	1480	1120	913	889	884	880

e Estimated

BRAZOS RIVER MAIN STEM

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08092600 BRAZOS RIVER AT WHITNEY DAM NEAR WHITNEY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	18.5	14.0	7.0	10.5	11.0	14.5	19.5	21.5	26.5	25.5	26.5
2	22.5	18.0	14.5	7.0	10.0	11.5	15.0	19.0	22.0	25.5	26.0	26.0
3	22.0	17.0	14.0	8.0	10.0	12.5	15.0	19.0	22.0	26.0	26.0	26.0
4	22.0	18.0	13.5	8.5	10.0	12.5	15.0	19.5	23.0	26.5	26.0	26.0
5	22.5	18.5	13.5	8.0	10.0	12.0	15.0	19.5	23.0	27.0	26.5	26.0
6	22.5	19.0	14.0	8.0	10.5	12.5	14.0	19.5	22.5	26.5	25.0	25.5
7	22.5	18.5	14.0	7.5	10.5	12.5	15.0	19.5	24.0	26.5	26.0	26.0
8	22.5	18.5	12.5	7.0	11.0	13.0	15.0	19.5	23.0	26.5	26.0	25.0
9	22.0	18.0	13.0	7.0	11.5	13.0	15.0	19.5	25.0	26.0	26.0	25.0
10	22.0	18.0	12.5	7.0	11.5	13.0	16.0	19.5	25.0	26.0	26.0	25.5
11	21.5	18.0	11.5	7.0	11.5	14.0	15.0	19.5	25.5	26.0	26.0	25.5
12	21.5	18.5	11.0	7.0	11.0	14.5	15.0	20.0	25.5	26.0	26.0	26.0
13	21.5	18.5	11.0	8.0	11.0	14.0	15.0	19.5	25.5	25.5	26.5	26.0
14	22.5	19.0	11.0	8.0	12.0	14.0	16.0	20.5	26.0	27.0	26.5	26.0
15	22.5	18.5	10.0	---	11.0	14.0	16.0	21.0	26.5	26.5	26.0	26.0
16	22.0	16.5	9.5	9.0	11.5	14.0	16.5	20.5	26.0	26.0	26.5	26.0
17	20.5	17.0	9.5	10.0	11.0	16.0	16.5	20.0	26.0	26.0	26.0	25.5
18	20.5	17.0	9.0	9.0	11.5	16.0	16.5	21.0	26.5	26.5	26.5	26.0
19	20.0	17.0	9.0	10.0	11.5	15.0	16.5	20.0	27.0	26.0	26.5	26.0
20	18.5	17.5	8.5	9.0	11.5	14.5	17.0	21.0	27.0	26.0	26.0	26.0
21	20.0	17.0	8.0	9.0	11.5	15.0	17.0	22.0	27.0	26.5	26.0	26.0
22	20.0	17.0	7.0	9.0	11.0	15.0	17.0	21.0	27.0	26.5	26.0	26.0
23	20.0	16.0	6.0	9.0	11.5	25.0	18.0	20.5	26.5	26.0	26.0	25.0
24	20.0	25.5	6.5	9.5	12.0	14.0	18.0	21.0	26.5	26.5	26.0	25.0
25	20.0	16.0	---	9.5	12.0	13.0	18.0	21.0	27.0	26.0	26.5	25.0
26	20.0	16.0	7.0	9.0	11.5	13.5	18.0	20.5	27.0	26.5	26.5	25.5
27	20.0	16.0	6.5	10.0	12.0	14.0	18.0	21.5	27.0	26.0	26.0	25.0
28	20.0	15.5	6.5	10.0	12.0	14.0	19.0	22.0	26.5	26.0	26.5	25.0
29	19.5	14.5	8.0	9.5	---	14.5	19.5	22.0	26.0	26.5	26.5	25.0
30	19.0	14.5	7.5	9.5	---	15.0	19.0	22.5	26.5	26.5	26.5	25.0
31	18.5	---	7.5	9.5	---	14.5	---	22.5	---	26.0	26.0	---
MEAN	21.0	17.5	10.0	8.5	11.0	14.0	16.5	20.5	25.5	26.0	26.0	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.--Records good except those for estimated daily discharges, which are fair. Most flow is released 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); 39 years (water-years 1952-90) regulated, unadjusted, 1,480 ft³/s (1,072,000 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, 27,400 ft³/s May 9 at 0930 hours (gage height, 22.67 ft); minimum daily, 9.6 ft³/s Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	836	505	148	e270	612	530	4410	24400	22900	904	969	269
2	1420	782	100	e265	422	341	4420	23000	22200	895	964	26
3	736	735	236	e266	222	307	4400	16400	21100	894	978	929
4	720	571	336	e270	434	309	4410	10100	21800	888	271	1560
5	744	297	326	e270	226	337	4410	24600	23100	864	62	857
6	775	1080	239	e260	240	164	3550	24900	20800	854	675	1430
7	598	49	209	e260	232	1260	487	24900	10000	859	881	1090
8	568	153	315	e290	269	863	488	25800	1980	863	881	507
9	728	262	293	e335	269	441	1110	26100	19700	775	265	28
10	772	164	296	e345	293	306	1920	25200	25000	682	472	219
11	838	148	327	e164	284	766	2610	25000	24700	707	264	150
12	1020	155	377	e154	264	416	2270	16300	24400	719	542	15
13	816	158	702	e248	853	1180	2230	13900	19500	1070	884	9.6
14	601	33	841	e180	490	3370	852	24600	12500	261	893	153
15	602	20	781	e170	249	4590	843	25000	8760	33	983	147
16	621	36	688	e249	251	4520	2060	25000	4030	541	900	19
17	248	139	711	e500	170	4490	4380	25100	4000	360	902	19
18	83	152	664	e576	85	4470	4340	24600	3990	35	276	399
19	86	157	666	e573	252	4450	4380	24300	3970	25	30	746
20	206	160	1470	e403	357	4440	5520	23700	3810	21	650	360
21	272	68	1240	e416	274	4450	8030	23700	3700	20	909	119
22	283	167	2780	e498	400	4400	7250	24100	1700	19	905	99
23	310	258	3780	e497	672	4340	12200	24400	1700	636	903	28
24	560	162	2170	720	711	4290	18100	24200	1720	564	901	30
25	693	70	e256	641	460	4250	19600	23900	1650	870	700	231
26	677	162	e266	636	532	4190	15000	23600	1660	877	205	359
27	631	159	e275	617	428	3300	9170	22800	1710	880	659	367
28	698	257	e271	565	687	2290	20100	22800	1710	260	734	442
29	524	156	e285	329	---	4980	25000	23500	1700	29	721	884
30	646	156	e282	325	---	4490	25000	24100	817	800	795	844
31	605	---	e278	258	---	4420	---	23900	---	957	728	---
TOTAL	18917	7371	21608	11550	10638	82950	218540	713900	316307	18162	20902	12335.6
MEAN	610	246	697	373	380	2676	7285	23030	10540	586	674	411
MAX	1420	1080	3780	720	853	4980	25000	26100	25000	1070	983	1560
MIN	83	20	100	154	85	164	487	10100	817	19	30	9.6
AC-FT	37520	14620	42860	22910	21100	164500	433500	1416000	627400	36020	41460	24470
CAL YR 1989	TOTAL	689067	MEAN	1888	MAX	18900	MIN	20	AC-FT	1367000		
WTR YR 1990	TOTAL	1453180.6	MEAN	3981	MAX	26100	MIN	9.6	AC-FT	2882000		

e Estimated

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 1989 TO SEPTEMBER 1990

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 CAC03)
JAN 19...	1730	150	474	7.7	14.0	55	260	8.4	84	4.5	180
FEB 01...	1345	608	244	7.4	16.0	200	870	8.0	84	3.9	93
MAR 16...	0945	34	612	8.1	14.0	50	75	9.0	89	4.0	230
APR 17...	1640	14	967	7.9	19.0	35	25	9.0	99	1.6	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- LITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN 19...	100	66	2.5	24	0.8	4.5	71	87	10	0.40	18
FEB 01...	31	35	1.4	11	0.5	4.3	62	33	5.4	0.30	9.8
MAR 16...	78	79	7.4	37	1	6.2	150	97	33	0.40	12
APR 17...	140	120	12	67	2	6.2	210	190	68	0.30	11

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLATILE, 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)
JAN 19...	256	1260	209	1050	13.2	0.790	14.0	0.120	3.1	3.2	0.560
FEB 01...	137	1060	648	412	2.60	1.10	3.70	1.20	0.90	2.1	0.370
MAR 16...	364	135	9	126	0.910	0.090	1.00	0.100	1.0	1.1	0.250
APR 17...	602	45	41	4	0.840	0.060	0.900	0.080	0.92	1.0	0.090

[illegible][illegible]

BRAZOS RIVER BASIN

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 National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharge. Records good. There are no known diversions above station.

AVERAGE DISCHARGE.--11 years (water years 1980-90), 26.3 ft³/s (19,050 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 19	0545	1,690	14.12	Mar. 29	1330	1,520	13.94
Feb. 1	1945	2,330	14.65	Apr. 14	1545	944	13.12
Mar. 7	1445	1,420	13.82	Apr. 26	1415	*9,220	*17.88
Mar. 14	2130	2,120	14.49	May 3	1100	5,580	16.31

Minimum discharge, no flow July 28 to Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.11	.11	.53	1570	29	64	55	.46	.11	.00	.00
2	.11	.11	.11	.46	1040	21	48	48	.60	.12	.00	.00
3	.11	.11	.11	.47	124	16	36	2620	3.2	.10	.00	.00
4	.11	.11	.10	.43	56	15	32	363	15	.10	.00	.00
5	.11	.11	.11	.44	43	14	36	106	2.5	.11	.00	.00
6	.12	.11	.13	.43	34	13	167	42	1.2	.09	.00	.00
7	.11	.11	.13	.43	25	865	47	23	.65	.09	.00	.00
8	.10	.11	.13	.42	20	344	34	17	.46	.09	.00	.00
9	.10	.11	.12	.42	152	107	31	13	.18	.09	.00	.00
10	.10	.11	.14	.40	103	70	31	8.9	.14	.09	.00	.00
11	.11	.11	.14	.43	43	311	23	8.3	.14	.08	.00	.00
12	.11	.11	.14	.41	31	109	19	16	.14	.08	.00	.00
13	.11	.11	.16	.43	25	62	18	8.7	.14	.08	.00	.00
14	.11	.11	.15	.44	24	934	459	6.6	.14	.08	.00	.00
15	.11	.11	.16	.43	21	398	89	4.6	.14	.08	.00	.00
16	.12	.11	.21	.44	17	89	52	3.9	.13	.07	.00	.00
17	.13	.12	.21	2.6	15	62	90	3.2	.13	.07	.00	.00
18	.12	.11	.23	269	14	44	46	2.4	.13	.07	.00	.00
19	.11	.12	.29	1180	14	34	34	2.5	.12	.07	.00	.00
20	.11	.11	.31	132	15	28	32	2.3	.13	.07	.00	.00
21	.10	.12	.32	31	58	25	29	1.8	.19	.07	.00	.00
22	.10	.12	.42	11	73	22	22	1.2	.13	.07	.00	.00
23	.11	.11	.44	7.2	35	21	18	.92	.12	.06	.00	.00
24	.11	.11	.46	7.0	26	19	17	.82	.15	.07	.00	.00
25	.11	.11	.53	5.5	20	18	16	.72	.11	.06	.00	.00
26	.11	.11	.63	3.9	16	19	3160	.61	.12	.05	.00	.00
27	.11	.12	.65	3.4	15	20	1050	.82	.12	.05	.00	.00
28	.11	.12	.54	3.1	28	53	660	.66	.11	.00	.00	.00
29	.11	.11	.49	3.2	---	870	197	.51	.11	.00	.00	.00
30	.14	.11	.46	3.0	---	387	92	.43	.11	.00	.00	.00
31	.11	---	.60	158	---	94	---	.34	---	.00	.00	---
TOTAL	3.44	3.36	8.73	1826.91	3657	5113	6649	3363.23	27.00	2.17	0.00	0.00
MEAN	.11	.11	.28	58.9	131	165	222	108	.90	.070	.000	.000
MAX	.14	.12	.65	1180	1570	934	3160	2620	15	.12	.00	.00
MIN	.10	.11	.10	.40	14	13	16	.34	.11	.00	.00	.00
AC-FT	6.8	6.7	17	3620	7250	10140	13190	6670	54	4.3	.00	.00

CAL YR 1989 TOTAL 14004.55 MEAN 38.4 MAX 2740 MIN .07 AC-FT 27780
WTR YR 1990 TOTAL 20653.84 MEAN 56.6 MAX 3160 MIN .00 AC-FT 40970

BRAZOS RIVER BASIN

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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 1989 TO SEPTEMBER 1990

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)
OCT 18...	1145	0.10	435	8.1	14.5	5	17	10.1	99	1.0	140
JAN 22...	1215	10	553	7.8	14.5	50	3.8	9.5	94	2.2	200
FEB 01...	1545	2090	273	7.4	16.5	80	870	7.9	83	3.6	110
MAR 13...	1145	60	573	8.3	20.0	13	88	8.4	94	1.6	240
APR 20...	0840	32	696	8.1	17.5	13	37	9.8	104	0.8	290
JUN 26...	1620	0.11	381	8.0	29.5	7	35	6.9	92	0.4	150

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)
OCT 18...	35	53	3.0	30	1	5.7	110	58	21	0.40	6.2
JAN 22...	100	77	2.8	28	0.9	4.8	100	120	19	0.50	9.8
FEB 01...	41	42	1.5	12	0.5	3.9	70	39	5.3	0.40	11
MAR 13...	70	89	4.1	28	0.8	3.7	170	90	15	0.50	10
APR 20...	100	110	3.4	40	1	2.7	190	130	21	0.40	8.3
JUN 26...	47	56	2.5	15	0.5	4.6	100	57	21	0.30	2.9

DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	RESIDUE VOLATILE, SUS- PENDE (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)
OCT 18...	247	25	3	22	--	0.010	<0.100	0.060	0.64	0.70	0.050
JAN 22...	323	106	18	88	6.68	0.520	7.20	0.170	1.0	1.2	0.140
FEB 01...	157	1640	276	1360	2.76	0.740	3.50	0.810	0.69	1.5	0.240
MAR 13...	342	172	8	164	2.30	0.100	2.40	0.040	1.3	1.3	0.130
APR 20...	428	164	42	122	1.56	0.040	1.60	0.030	0.47	0.50	0.050
JUN 26...	222	18	<1	--	0.590	0.010	0.600	0.050	0.35	0.40	0.040

DATE	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)
OCT 18...	5.1	--	--	--	--	--	--	--	--	--
JAN 22...	8.8	6	46	<0.5	<1.0	<5	<3	<10	16	<10
FEB 01...	29	--	--	--	--	--	--	--	--	--
MAR 13...	8.3	4	51	<0.5	1.0	<5	<3	<10	13	20
APR 20...	5.9	--	--	--	--	--	--	--	--	--
JUN 26...	4.2	1	50	<0.5	1.0	<5	<3	<10	7	<10

BRAZOS RIVER BASIN

08093250 HACKBERRY CREEK AT HILLSBORO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 18...	--	--	--	--	--	--	--	--	--	--
JAN 22...	10	12	0.1	<10	<10	<1	<1.0	530	<6	5
FEB 01...	--	--	--	--	--	--	--	--	--	--
MAR 13...	12	6	<0.1	10	<10	1	1.0	620	11	8
APR 20...	--	--	--	--	--	--	--	--	--	--
JUN 26...	8	9	0.7	<10	<10	<1	<1.0	300	<6	3

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 1989 TO SEPTEMBER 1990

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)
OCT 20...	0915	3.0	740	7.7	13.5	12	25	8.2	79	1.9	170
NOV 29...	1200	6.0	754	7.4	12.0	18	16	7.6	71	3.1	180
JUN 27...	0950	0.58	788	7.5	27.0	35	3.8	4.1	52	5.3	190
AUG 02...	1440	2.5	693	7.5	29.0	8	58	5.0	66	4.1	180
20...	1420	1.7	720	7.4	29.0	13	7.6	5.2	69	4.2	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)
OCT 20...	33	63	3.9	75	2	13	140	84	73	0.30	11
NOV 29...	8	64	4.2	75	2	14	170	96	70	0.30	11
JUN 27...	0	68	4.8	69	2	14	200	91	63	0.60	9.2
AUG 02...	23	67	3.6	68	2	13	160	86	70	0.50	9.2
20...	16	68	3.9	72	2	13	170	96	68	0.80	9.7

DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	RESIDUE VOLATILE, SUS- PENDE (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)
OCT 20...	407	43	11	32	5.97	0.030	6.00	0.120	0.88	1.0	4.80
NOV 29...	435	46	16	30	0.930	0.270	1.20	4.60	0.80	5.4	5.20
JUN 27...	438	9	14	0	0.020	0.080	0.100	12.0	3.0	15	6.20
AUG 02...	413	19	9	10	0.070	0.130	0.200	0.380	1.1	1.5	3.50
20...	434	<1	<1	--	--	0.010	<0.100	1.10	1.2	2.3	6.30

DATE	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)
OCT 20...	11	--	--	--	--	--	--	--	--	--
NOV 29...	12	2	29	<0.5	1.0	<5	<3	<10	14	<10
JUN 27...	15	--	--	--	--	--	--	--	--	--
AUG 02...	10	--	--	--	--	--	--	--	--	--
20...	12	2	20	<0.5	2.0	<5	<3	<10	26	<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)
OCT 20...	--	--	--	--	--	--	--	--	--	--
NOV 29...	14	52	0.2	<10	<10	<1	2.0	380	<6	29
JUN 27...	--	--	--	--	--	--	--	--	--	--
AUG 02...	--	--	--	--	--	--	--	--	--	--
20...	11	45	<0.1	<10	<10	<1	<1.0	310	<6	33

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to September 1985.

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 (observed) contents, 105,500 acre-ft May 8 at 0500 hours (elevation, 549.60 ft); minimum (observed), 47,850 acre-ft Jan. 15 (elevation, 536.08 ft).

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

536.0	47,610	542.0	68,760	548.0	96,730
538.0	54,020	544.0	77,250	549.0	102,100
540.0	61,040	546.0	86,560	550.0	107,800

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51220	49880	48840	48100	60970	56270	63430	86710	69690	52920	51220	49470
2	51160	49750	48840	48070	65540	56060	63050	86320	67830	52860	51160	49380
3	51130	49690	48750	48100	65070	55860	62150	101500	66160	52790	51220	49340
4	51060	49600	48720	48100	64460	55650	61190	104600	64300	52660	51220	49280
5	51030	49630	48690	48100	63840	55480	60750	105100	62790	52620	51380	49220
6	51000	49600	48690	48100	63120	55480	60570	105300	61670	52530	51290	49160
7	51000	49660	48780	48100	62450	60460	59730	105500	60600	52390	51220	49060
8	50900	49600	48600	48070	61780	61480	58800	105200	59550	52330	51130	49000
9	50870	49560	48530	48070	61630	61040	57880	104700	58550	52260	51060	49060
10	50800	49500	48660	48040	61230	60280	57380	103800	57450	52160	51030	49220
11	50740	49470	48630	48070	60600	60640	57030	103100	56790	52070	50960	49160
12	50710	49410	48410	48010	59800	60280	56720	103000	56340	52100	50900	49120
13	50640	49410	48380	47920	59260	59550	56620	102200	55890	51940	50840	49120
14	50610	49380	48380	47950	58660	62450	58200	101400	55620	51840	50740	49030
15	50580	49340	48350	47950	57980	63620	58410	100700	55340	51740	50680	49030
16	50550	49250	48280	47980	57490	62940	58440	100200	55070	51680	50580	49030
17	50420	49160	48220	48470	57210	62080	58550	98980	54800	51680	50480	48970
18	50200	49160	48250	49690	57000	61260	58440	97420	54560	51610	50420	48880
19	50130	49120	48190	53450	56820	60310	58120	95880	54390	51640	50360	48840
20	50070	49120	48190	53990	56680	59340	57880	94470	54220	51580	50320	48810
21	50010	49090	48320	54020	57030	58300	57700	92810	54090	51510	50260	48780
22	49940	49220	48130	53990	57170	57880	57380	90630	53990	51480	50200	49060
23	49940	49120	48010	53990	57030	57770	57070	88380	53820	51420	50130	48940
24	49940	49030	47980	54120	56960	57630	56760	86170	53720	51450	50070	48810
25	49910	49090	47980	53890	56760	57450	56510	84010	53580	51350	49980	48750
26	49850	49030	47980	53650	56620	57280	74960	81940	53450	51290	49910	48690
27	49820	49030	47980	53690	56480	57170	84150	79960	53350	51220	49850	48660
28	49790	48970	47950	53690	56510	57170	85830	77830	53220	51190	49790	48630
29	49790	48910	48040	53580	---	61930	86900	75660	53120	51160	49690	48560
30	49940	48880	48070	53520	---	63500	87000	73670	53020	51130	49660	48530
31	49880	---	48100	54160	---	63500	---	71640	---	51190	49560	---
MAX	51220	49880	48840	54160	65540	63620	87000	105500	69690	52920	51380	49470
MIN	49790	48880	47950	47920	56480	55480	56510	71640	53020	51130	49560	48530
(↑)	536.73	536.41	536.16	538.04	538.73	540.66	546.09	542.70	537.70	537.14	536.63	536.30
(Φ)	-1380	-1000	-780	+6060	+2350	+6990	+23500	-15360	-18620	-1830	-1630	-1030
CAL YR 1989	MAX	76320	MIN	46460	(Φ)	+1280						
WTR YR 1990	MAX	105500	MIN	47920	(Φ)	-2730						

(↑) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

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 1989 TO SEPTEMBER 1990

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							
06...	0956	1.00	378	8.3	11.0	9.9	91
06...	0958	11.0	378	8.3	11.0	9.8	90
MAY							
23...	0945	1.00	331	8.1	25.0	7.9	97
23...	0948	10.0	332	7.8	24.5	6.1	74
23...	0950	20.0	333	7.7	23.5	4.9	58
23...	0953	30.0	336	7.6	23.0	3.7	44
23...	0956	43.0	338	7.7	22.0	0	0
JUL							
31...	1109	1.00	362	8.3	29.0	8.0	105
31...	1113	10.0	364	8.2	28.5	7.3	95
31...	1116	20.0	365	8.1	28.5	7.0	91
31...	1119	33.0	377	7.7	27.5	1.4	18

315358097122601 - AQUILLA LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
FEB											
06...	0922	1.00	378	8.2	11.0	0.40	9.8	90	K17	67	140
06...	0924	10.0	378	8.2	11.0	--	9.8	90	--	--	--
06...	0926	20.0	378	8.2	11.0	--	9.7	89	--	--	--
06...	0928	30.0	378	8.2	11.0	--	9.7	89	--	--	--
06...	0930	40.0	378	8.2	11.0	--	9.7	89	--	--	--
06...	0932	51.0	378	8.1	11.0	--	9.6	88	--	--	140
MAY											
23...	0917	1.00	331	8.1	25.0	0.80	8.2	100	K3	K4	130
23...	0920	10.0	332	7.8	24.5	--	6.5	79	--	--	--
23...	0923	20.0	334	7.6	23.5	--	5.3	63	--	--	--
23...	0926	30.0	336	7.5	23.0	--	4.1	48	--	--	--
23...	0929	40.0	337	7.4	22.0	--	1.7	20	--	--	--
23...	0933	50.0	344	7.4	21.0	--	0	0	--	--	--
23...	0938	55.0	348	7.3	20.0	--	0	0	--	--	140
JUL											
31...	1035	1.00	362	8.2	29.0	1.00	8.1	107	K1	K1	140
31...	1038	10.0	364	7.9	28.5	--	7.2	94	--	--	--
31...	1042	20.0	371	7.7	28.0	--	5.4	70	--	--	--
31...	1045	30.0	376	7.3	27.0	--	2.2	28	--	--	--
31...	1049	40.0	386	7.2	26.5	--	0	0	--	--	--
31...	1053	46.0	413	7.0	25.5	--	0	0	--	--	160

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY 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											
06...	28	52	3.2	20	0.7	5.9	120	51	13	0.40	4.9
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	25	51	3.1	19	0.7	5.1	120	54	14	--	4.9
MAY											
23...	31	48	2.4	14	0.5	4.0	99	42	12	<0.10	1.7
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	24	50	2.7	15	0.6	4.1	110	40	12	<0.10	4.7
JUL											
31...	28	52	2.8	15	0.5	4.9	110	49	14	0.30	3.3
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	9	58	3.2	17	0.6	5.2	150	40	13	0.30	9.1

BRAZOS RIVER BASIN

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315358097122601 - AQUILLA LAKE SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE (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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB										
06...	219	0.720	0.080	0.800	0.030	0.77	0.80	0.110	35	3
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	220	0.810	0.090	0.900	0.030	0.77	0.80	0.090	11	<1
MAY										
23...	183	0.960	0.040	1.00	0.030	0.37	0.40	0.030	8	5
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	1.06	0.040	1.10	0.040	0.56	0.60	0.030	30	20
23...	--	1.05	0.050	1.10	0.060	1.0	1.1	0.180	20	150
23...	--	--	--	--	--	--	--	--	--	--
23...	197	0.530	0.070	0.600	0.320	0.48	0.80	0.160	310	1100
JUL										
31...	209	0.380	0.020	0.400	0.020	0.48	0.50	0.010	7	69
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	0.580	0.020	0.600	0.050	0.85	0.90	0.020	20	390
31...	--	0.350	0.050	0.400	0.300	0.80	1.1	0.040	20	690
31...	238	--	0.050	<0.100	1.20	0.90	2.1	0.060	180	3000

315402097115401 - AQUILLA LAKE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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							
06...	0946	1.00	380	8.3	11.0	9.8	90
06...	0948	10.0	380	8.3	11.0	9.7	89
06...	0950	23.0	380	8.2	11.0	9.6	88
MAY							
23...	1006	1.00	331	8.2	25.5	8.0	99
23...	1009	10.0	331	7.9	24.5	6.3	76
23...	1012	20.0	334	7.8	24.0	4.9	59
JUL							
31...	1128	1.00	361	8.4	29.5	8.4	111
31...	1130	10.0	361	8.3	29.0	8.0	105
31...	1132	23.0	375	7.9	28.0	3.8	49

315601097111501 - AQUILLA LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
FEB									
06...	1100	1.00	376	8.4	11.5	0.40	9.8	91	0.710
06...	1102	10.0	376	8.4	11.5	--	9.8	91	--
06...	1104	20.0	376	8.3	11.5	--	9.6	89	--
06...	1106	30.0	376	8.3	11.5	--	9.5	88	--
06...	1108	41.0	376	8.2	11.5	--	9.4	87	0.260
MAY									
23...	1116	1.00	330	8.2	26.0	0.70	8.4	105	0.970
23...	1119	10.0	331	7.9	25.0	--	7.0	86	0.950
23...	1121	20.0	333	7.8	24.5	--	5.8	70	--
23...	1124	30.0	332	7.6	23.5	--	4.2	50	1.06
23...	1128	45.0	339	7.6	23.0	--	0	0	0.950
JUL									
31...	1400	1.00	361	8.3	29.0	--	8.2	108	0.280
31...	1402	10.0	369	7.9	28.5	--	5.6	73	0.380
31...	1404	20.0	375	7.7	27.5	--	2.6	33	0.480
31...	1406	30.0	376	7.7	27.5	--	1.6	20	--
31...	1408	36.0	376	7.8	28.0	--	1.5	19	0.460

BRAZOS RIVER BASIN

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08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315601097111501 - AQUILLA LAKE SITE BC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
06...	0.090	0.800	0.020	0.88	0.90	0.130	50	<10
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	0.040	0.300	0.010	3.0	3.0	0.080	30	10
MAY								
23...	0.030	1.00	0.030	0.67	0.70	0.050	<10	10
23...	0.050	1.00	0.030	0.37	0.40	0.030	<10	20
23...	--	--	--	--	--	--	--	--
23...	0.040	1.10	0.050	0.65	0.70	0.030	<10	50
23...	0.050	1.00	0.140	0.36	0.50	0.100	30	150
JUL								
31...	0.020	0.300	0.010	0.49	0.50	0.010	30	<10
31...	0.020	0.400	0.040	0.46	0.50	<0.010	20	<10
31...	0.020	0.500	0.060	0.44	0.50	0.020	20	20
31...	--	--	--	--	--	--	--	--
31...	0.040	0.500	0.090	0.91	1.0	0.030	<10	40

315649097103701 - AQUILLA LAKE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)
FEB											
06...	1114	1.00	343	8.0	12.0	0.20	8.0	75	80	460	130
06...	1116	10.0	355	8.0	12.0	--	8.0	75	--	--	--
06...	1118	20.0	355	8.0	11.5	--	7.8	72	--	--	--
06...	1120	30.0	362	7.9	11.5	--	6.0	56	--	--	--
06...	1122	36.0	362	7.9	11.5	--	5.8	54	--	--	140
MAY											
23...	1142	1.00	332	7.9	26.5	0.50	7.3	92	K4	K12	140
23...	1145	10.0	331	7.7	25.0	--	5.7	70	--	--	--
23...	1149	20.0	331	7.7	24.0	--	5.1	61	--	--	--
23...	1152	30.0	335	7.5	23.5	--	2.4	29	--	--	--
23...	1156	36.0	338	7.6	23.5	--	0	0	--	--	140
JUL											
31...	1440	1.00	366	7.9	28.5	0.40	5.6	73	K2	K8	140
31...	1444	10.0	378	7.5	27.5	--	0	0	--	--	--
31...	1448	21.0	386	7.7	27.5	--	0	0	--	--	150

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (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 CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB											
06...	28	49	2.5	17	0.6	5.1	100	49	9.7	--	7.7
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	42	51	2.7	17	0.6	5.0	96	50	11	--	7.2
MAY											
23...	28	51	2.2	13	0.5	3.8	110	41	10	0.30	4.9
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	29	51	2.4	14	0.5	4.0	110	41	12	0.30	3.8
JUL											
31...	21	50	2.8	17	0.6	5.3	120	49	14	0.40	4.6
31...	--	--	--	--	--	--	--	--	--	--	--
31...	22	54	2.9	16	0.6	5.2	120	47	14	0.40	5.5

BRAZOS RIVER BASIN

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315649097103701 - AQUILLA LAKE SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB										
06...	203	2.43	0.270	2.70	0.100	1.0	1.1	0.120	21	3
06...	--	--	--	--	--	--	--	--	--	--
06...	--	1.89	0.210	2.10	0.110	0.89	1.0	0.120	20	10
06...	--	--	--	--	--	--	--	--	--	--
06...	202	2.06	0.240	2.30	0.230	2.5	2.7	0.070	33	43
MAY										
23...	191	0.730	0.070	0.800	0.040	0.36	0.40	0.040	15	6
23...	--	--	--	--	--	--	--	--	--	--
23...	--	1.07	0.030	1.10	0.030	0.37	0.40	0.030	20	20
23...	--	0.860	0.140	1.00	0.200	0.30	0.50	0.090	20	80
23...	193	0.710	0.190	0.900	0.310	0.29	0.60	0.120	28	120
JUL										
31...	212	0.160	0.040	0.200	0.040	0.76	0.80	0.020	11	32
31...	--	0.130	0.070	0.200	0.180	0.72	0.90	0.030	50	190
31...	221	0.010	0.090	0.100	0.350	0.45	0.80	0.080	330	290

315518097123401 - AQUILLA LAKE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
FEB									
06...	1007	1.00	376	8.4	11.5	0.40	10.0	93	0.630
06...	1009	10.0	376	8.4	11.5	--	9.9	92	--
06...	1011	20.0	376	8.3	11.0	--	9.9	91	--
06...	1013	30.0	376	8.3	11.0	--	9.8	90	--
06...	1015	40.0	376	8.3	11.0	--	9.8	90	0.630
MAY									
23...	1022	1.00	332	7.9	25.5	0.70	7.2	89	0.950
23...	1025	10.0	331	7.8	25.0	--	6.9	84	--
23...	1028	20.0	333	7.6	24.0	--	5.1	61	0.950
23...	1031	30.0	340	7.5	23.0	--	2.6	31	1.04
23...	1034	44.0	726	7.4	22.0	--	0	0	--
JUL									
31...	1142	1.00	359	8.3	29.5	1.00	8.4	111	0.280
31...	1145	10.0	372	7.8	28.0	--	4.9	63	--
31...	1147	20.0	375	7.6	27.5	--	2.4	31	0.480
31...	1149	30.0	379	7.6	27.5	--	0	0	0.360
31...	1152	36.0	396	7.7	27.5	--	0	0	--

DATE	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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
06...	0.070	0.700	0.010	0.89	0.90	0.160	20	<10
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	0.070	0.700	0.020	0.58	0.60	0.090	20	<10
MAY								
23...	0.050	1.00	0.030	0.47	0.50	0.040	40	10
23...	--	--	--	--	--	--	--	--
23...	0.050	1.00	0.050	0.35	0.40	0.030	30	50
23...	0.060	1.10	0.050	0.45	0.50	0.060	40	100
23...	<0.010	<0.100	0.670	1.4	2.1	0.330	530	780
JUL								
31...	0.020	0.300	0.020	0.78	0.80	0.020	20	30
31...	--	--	--	--	--	--	--	--
31...	0.020	0.500	0.060	0.44	0.50	0.010	20	90
31...	0.040	0.400	0.140	0.46	0.60	0.020	30	360
31...	0.030	<0.100	0.530	0.87	1.4	0.020	220	930

BRAZOS RIVER BASIN

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08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315748097144901 - AQUILLA LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 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 CAC03)
FEB											
06...	1032	1.00	377	8.3	11.5	0.30	9.6	89	100	220	140
06...	1034	10.0	377	8.3	11.5	--	9.4	87	--	--	--
06...	1036	20.0	377	8.2	11.5	--	9.2	85	--	--	--
06...	1038	33.0	380	8.1	11.5	--	8.0	74	--	--	150
MAY											
23...	1047	1.00	333	8.0	26.0	0.60	7.2	90	K1	K11	130
23...	1050	10.0	333	7.8	25.5	--	6.6	82	--	--	--
23...	1053	20.0	333	7.5	24.5	--	4.1	50	--	--	--
23...	1057	30.0	357	7.4	23.5	--	0	0	--	--	--
23...	1100	40.0	784	7.4	23.0	--	0	0	--	--	290
JUL											
31...	1325	1.00	352	8.3	29.5	1.00	8.8	117	K1	26	130
31...	1328	10.0	365	7.8	28.5	--	5.4	70	--	--	--
31...	1333	20.0	378	7.4	27.5	--	0	0	--	--	--
31...	1339	29.0	391	7.4	27.5	--	0	0	--	--	150

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (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 CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB											
06...	28	52	3.5	20	0.7	5.7	120	51	14	--	3.8
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	27	53	3.4	20	0.7	5.8	120	51	14	--	4.2
MAY											
23...	28	48	2.6	15	0.6	4.2	100	42	13	<0.10	1.9
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	86	100	9.4	49	1	5.3	200	140	52	0.20	12
JUL											
31...	23	48	3.2	18	0.7	5.5	110	49	14	0.20	3.2
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	17	54	3.3	17	0.6	5.7	130	43	15	0.40	6.1

DATE	SOLIDS, SUM OF CONSTITU- ENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB										
06...	220	0.280	0.020	0.300	0.020	0.88	0.90	0.010	14	<1
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	223	0.620	0.080	0.700	0.020	0.78	0.80	0.060	12	50
MAY										
23...	188	0.840	0.060	0.900	0.030	0.37	0.40	0.040	10	10
23...	--	0.930	0.070	1.00	0.040	0.66	0.70	0.050	10	60
23...	--	--	--	--	--	--	--	--	--	--
23...	--	0.720	0.080	0.800	0.140	0.46	0.60	0.080	60	270
23...	490	--	0.020	<0.100	0.660	0.64	1.3	0.230	640	740
JUL										
31...	207	0.090	0.010	0.100	0.020	0.68	0.70	0.020	<3	16
31...	--	0.280	0.020	0.300	0.040	0.56	0.60	0.020	20	140
31...	--	0.250	0.050	0.300	0.200	0.70	0.90	0.020	110	440
31...	225	--	0.050	<0.100	0.630	1.1	1.7	0.040	870	790

Aquilla Lake AC (315358097122601)

Phytoplankton Analyses October 1989 to September 1990

Date	2-06-90
Time	0923

TOTAL CELLS/mL	22,515
NUMBER OF SPECIES	36
DEPTH COLLECTED (ft.)	1.1

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Melosira italica</i>	1,441
<i>Stephanodiscus astraëa</i> var. <i>minutula</i>	1,879
<i>Stephanodiscus dubius</i>	55
Order Pennales	
<i>Navicula cryptocephala</i> var. <i>veneta</i>	25
<i>Navicula secreta</i> var. <i>apiculata</i>	25
<i>Navicula</i> sp.	25
<i>Nitzschia acicularis</i>	101
<i>Nitzschia palea</i>	25
<i>Nitzschia</i> sp.	25
<i>Synedra filiformis</i> var. <i>exilis</i>	760
<i>Synedra ulna</i>	25
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus falcatus</i>	447
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	68
<i>Chlorella ellipsoidea</i>	68
<i>Chlorococcum humicola</i>	447
<i>Golenkinia radiata</i> var. <i>brevispina</i>	223
<i>Kirchneriella lunaris</i>	540
<i>Micractinium pusillum</i>	540
<i>Scenedesmus abundans</i>	405
<i>Scenedesmus bijuga</i>	135
<i>Scenedesmus quadricauda</i>	473
<i>Tetraedron caudatum</i>	68
<i>Tetraedron</i> sp.	68
<i>Tetrastrum staurogeniaeforme</i>	894
CHRYSTOPHYTA (Golden-brown algae)	
<i>Kephyrion</i> sp.	270
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa delicatissima</i>	4,245
<i>Chroococcus dispersus</i>	670
<i>Chroococcus multicoloratus</i>	1,340
<i>Chroococcus varius</i>	4,245
<i>Dactylococcopsis fascicularis</i>	1,117
<i>Merismopedia tenuissima</i>	1,080
<i>Oscillatoria limnetica</i>	135
<i>Synechococcus</i> sp.	447
EUGLENOPHYTA (Euglenoids)	
<i>Trachelomonas volvocina</i>	68
<i>Trachelomonas</i> sp.	68
PYRRROPHYTA (Dinoflagellates)	
<i>Glenodinium</i> sp.	68

08093350 AQUILLA LAKE NEAR AQUILLA, TX—Continued

Aquilla Lake CC (315649097103701)

Phytoplankton Analyses October 1989 to September 1990

Date	2-06-90
Time	1115

TOTAL CELLS/mL	10,030
NUMBER OF SPECIES	25
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Melosira granulata</i>	86
<i>Melosira italica</i>	1,620
<i>Stephanodiscus astrea</i> var. <i>minutula</i>	908
<i>Stephanodiscus dubius</i>	65
<i>Stephanodiscus</i> sp.	22
Order Pennales	
<i>Navicula secreta</i> var. <i>apiculata</i>	53
<i>Nitzschia acicularis</i>	27
<i>Nitzschia palea</i>	106
<i>Nitzschia</i> sp.	27
<i>Synedra acus</i>	27
<i>Synedra filiformis</i> var. <i>exilis</i>	240
<i>Synedra</i> sp.	27
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus falcatus</i>	240
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	721
<i>Chlorococcum humicola</i>	240
<i>Cosmarium</i> sp.	240
<i>Golenkinia radiata</i> var. <i>brevispina</i>	480
<i>Scenedesmus quadricauda</i>	169
CHRYSTOPHYTA (Golden-brown algae)	
<i>Dinobryon bavaricum</i>	240
<i>Dinobryon divergens</i>	240
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa delicatissima</i>	1,441
<i>Chroococcus dispersus</i>	721
<i>Chroococcus multicoloratus</i>	1,441
<i>Synechococcus</i> sp.	480
EUGLENOPHYTA (Euglenoids)	
<i>Phacus longicauda</i>	169

Aquilla Lake AC 315358097122601

Phytoplankton Analyses October 1989 to September 1990

Date	5-23-90
Time	0918

TOTAL CELLS/mL	31,952
NUMBER OF SPECIES	34
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	216
<i>Cyclotella stelligera</i>	648
<i>Melosira granulata</i> var. <i>angustissima</i>	108
<i>Stephanodiscus astraëa</i> var. <i>minutula</i>	1,943
<i>Stephanodiscus niagarae</i>	432
<i>Stephanodiscus</i> sp.	648
Order Pennales	
<i>Fragilaria vaucheriae</i>	484
<i>Navicula</i> sp.	484
<i>Synedra</i> sp.	484
CHLOROPHYTA (Green algae)	
<i>Chlamydomonas globosa</i>	1271
<i>Chlorococcum humicola</i>	545
<i>Coelastrum microporum</i>	1452
<i>Crucigenia tetrapedia</i>	545
<i>Kirchneriella lunaris</i>	363
<i>Oocystis pusilla</i>	908
<i>Pediastrum duplex</i>	726
<i>Scenedesmus bijuga</i>	182
<i>Scenedesmus quadricauda</i>	363
<i>Schroederia setigera</i>	182
<i>Sphaerocystis schroeteri</i>	363
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa delicatissima</i>	5,990
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	2,178
<i>Aphanothece saxicola</i>	363
<i>Chroococcus dispersus</i>	1,815
<i>Chroococcus limneticus</i>	363
<i>Chroococcus multicoloratus</i>	726
<i>Chroococcus varius</i>	2,541
<i>Dactylococcopsis fascicularis</i>	182
<i>Pseudanabaena catenata</i>	182
<i>Spirulina laxa</i>	363
<i>Spirulina subsalsa</i>	182
<i>Synechococcus</i> sp.	2,904
CRYPTOPHYTA (Cryptomonads)	
<i>Chroomonas</i> sp.	182
<i>Rhodomonas minuta</i>	1,634

08083350 AQUILLA LAKE NEAR AQUILLA, TX—Continued

Aquila Lake CC 315649097103701

Phytoplankton Analyses October 1989 to September 1990

Date	5-23-90
Time	1143

TOTAL CELLS/mL	26,145
NUMBER OF SPECIES	27
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella stelligera</i>	375
<i>Melosira granulata</i> var. <i>angustissima</i>	1,030
<i>Stephanodiscus astraëa</i> var. <i>minutula</i>	5,339
<i>Stephanodiscus niagarae</i>	187
<i>Stephanodiscus</i> sp.	749
Order Pennales	
<i>Synedra radiosa</i>	1,471
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus falcatus</i>	327
<i>Chlamydomonas globosa</i>	163
<i>Chlorococcum humicola</i>	654
<i>Crucigenia tetrapedia</i>	490
<i>Kirchneriella contorta</i>	490
<i>Kirchneriella lunaris</i>	490
<i>Oocystis elliptica</i>	654
<i>Scenedesmus bijuga</i>	327
<i>Schroederia setigera</i>	163
<i>Sphaerocystis schroeteri</i>	1,307
<i>Selenastrum minutum</i>	163
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa delicatissima</i>	3,105
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	1,961
<i>Aphanothece saxicola</i>	327
<i>Chroococcus dispersus</i>	1,307
<i>Chroococcus limneticus</i>	327
<i>Chroococcus varius</i>	654
<i>Oscillatoria angustissima</i>	327
<i>Synechococcus</i> sp.	2,941
EUGLENOPHYTA (Euglenoids)	
<i>Trachelomonas volvocina</i>	163
CRYPTOPHYTA (Cryptomonads)	
<i>Rhodomonas minuta</i>	654

BRAZOS RIVER BASIN

08093350 AQUILLA LAKE NEAR AQUILLA, TX—Continued

Aquilla Lake AC (315358097122601)

Phytoplankton Analyses October 1989 to September 1990

Date	7-31-90
Time	1036

TOTAL CELLS/mL	21,747
NUMBER OF SPECIES	19
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella meneghiniana</i>	2
<i>Cyclotella striata</i>	31
<i>Melosira italica</i>	125
<i>Melosira lirata</i>	38
<i>Stephanodiscus dubius</i>	6
Order Pennales	
<i>Navicula secreta</i> var. <i>apiculata</i>	223
<i>Synedra radians</i>	74
<i>Synedra ulna</i> var. <i>amphirhynchus</i>	74
<i>Synedra</i> sp.	372
CHLOROPHYTA (Green algae)	
<i>Cosmarium</i> sp.	135
<i>Kirchneriella lunaris</i>	135
<i>Scenedesmus abundans</i> var. <i>brevicauda</i>	540
<i>Tetradron constrictum</i>	68
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa elachista</i>	10,131
<i>Aphanocapsa rivularia</i>	5,065
<i>Oscillatoria angustissima</i>	2,364
<i>Phormidium mucicola</i>	1,418
EUGLENOPHYTA (Euglenoids)	
<i>Euglena gracilis</i>	608
CRYPTOPHYTA (Cryptomonads)	
<i>Cryptomonas erosa</i>	338

08093350 AQUILLA LAKE NEAR AQUILLA, TX—Continued

Aquilla Lake EC (315748097144901)

Phytoplankton Analyses October 1989 to September 1990

Date	7-31-90
Time	1326

TOTAL CELLS/mL	41,222
NUMBER OF SPECIES	32
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella striata</i>	179
<i>Melosira granulata</i>	135
<i>Melosira italica</i>	314
Order Pennales	
<i>Asterionella formosa</i>	287
<i>Navicula</i> sp.	216
CHLOROPHYTA (Green algae)	
<i>Chlorella ellipsoidea</i>	126
<i>Chlorococcum humicola</i>	503
<i>Crucigenia tetrapedia</i>	503
<i>Dictyosphaerium pulchellum</i>	503
<i>Golenkinia radiata</i>	126
<i>Kirchneriella lunaris</i>	126
<i>Oocystis</i> sp.	126
<i>Phacotus lenticularis</i>	126
<i>Scenedesmus bijuga</i>	1,005
<i>Scenedesmus quadricauda</i>	251
<i>Tetradron trigonum</i>	126
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa delicatissima</i>	2,513
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	14,577
<i>Chroococcus dispersus</i>	754
<i>Chroococcus limneticus</i>	2,011
<i>Chroococcus multicoloratus</i>	2,513
<i>Chroococcus</i> sp.	1,257
<i>Merismopedia tenuissima</i>	6,032
<i>Oscillatoria limnetica</i>	503
<i>Phormidium mucicola</i>	1,382
<i>Raphidiopsis curvata</i>	377
<i>Synechococcus lineare</i>	2,011
<i>Synechococcus</i> sp.	1,257
EUGLENOPHYTA (Euglenoids)	
<i>Euglena acus</i>	377
<i>Euglena gracilis</i>	503
<i>Trachelomonas hispida</i>	126
CRYPTOPHYTA (Cryptomonads)	
<i>Cryptomonas erosa</i>	377

BRAZOS RIVER BASIN

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.--Records good except those for estimated daily discharges, which are fair. Daily discharges above 135 ft³/s are not published. Flow is regulated by Aquilla Lake 0.2 mi upstream (station 08093350). Deliberate impoundment of water 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 not determined; maximum gage height, 11.47 ft May 21; minimum daily, 0.01 ft³/s on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.04	.03	e.04	29	e91	---	---	---	.10	.44	.19
2	.01	.03	.02	e.04	---	e85	---	---	---	.08	.24	.15
3	.02	.02	.02	e.04	---	e85	---	---	---	.09	.24	.15
4	.02	.02	.02	e.04	---	e85	---	.16	---	.09	.26	.15
5	.02	.02	.02	e.04	---	e85	---	.13	---	.09	.41	.15
6	.02	.02	.03	e.04	---	e50	---	.12	---	.09	.23	.15
7	.02	.02	.03	e.04	---	e50	---	.12	---	.08	.19	.14
8	.02	.02	.03	e.04	---	e.05	---	---	---	.09	.19	.15
9	.02	.02	e.03	e.04	---	---	---	---	---	.10	.20	.23
10	.02	.02	e.03	e.04	---	---	---	---	---	.11	.27	.22
11	.01	.02	e.03	e.04	---	---	---	---	---	.11	.22	.21
12	.01	.02	e.03	e.04	---	---	---	---	---	.11	.18	.20
13	.01	.03	e.03	e.04	---	---	104	---	---	.12	.18	.19
14	.01	.03	e.03	e.05	---	---	109	---	74	.11	.14	.18
15	.01	.02	e.04	e.05	---	---	110	---	135	.10	.15	.17
16	.01	.03	e.04	e.05	---	---	110	---	135	.12	.15	.17
17	.01	.03	e.04	e.05	e103	---	110	---	134	.13	.15	.17
18	.04	.03	e.04	e.05	e101	---	---	---	131	.14	.16	.17
19	.04	.03	e.04	e.10	e101	---	---	---	67	.16	.15	.17
20	.02	.03	e.04	e.06	e100	---	---	---	32	.16	.15	.17
21	.01	.03	e.04	e.05	e.05	---	---	---	32	.13	.15	.17
22	.01	.03	e.04	7.6	e.05	---	---	---	30	.13	.15	.39
23	.01	.02	e.04	27	e85	107	---	---	29	.15	.15	.21
24	.01	.02	e.04	28	e85	110	---	---	29	.17	.15	.17
25	.01	.02	e.04	28	e85	110	---	---	29	.16	.15	.17
26	.02	.02	e.04	28	e85	---	---	---	29	.15	.15	.17
27	.02	.03	e.04	27	e100	---	---	---	29	.14	.15	.17
28	.02	.04	e.04	27	e100	---	---	---	28	.15	.17	.16
29	.02	.06	e.04	27	---	23	---	---	13	.17	.15	.15
30	.08	.06	e.04	27	---	8.9	---	---	.13	.22	.16	.17
31	.04	---	e.04	28	---	---	---	---	---	.28	.17	---
TOTAL	0.60	0.83	1.06	255.58	---	---	---	---	---	4.03	6.00	5.41
MEAN	.019	.028	.034	8.24	---	---	---	---	---	.13	.19	.18
MAX	.08	.06	.04	28	---	---	---	---	---	.28	.44	.39
MIN	.01	.02	.02	.04	---	---	---	---	---	.08	.14	.14
AC-FT	1.2	1.6	2.1	507	---	---	---	---	---	8.0	12	11
CAL YR 1989	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---	---	---
WTR YR 1990	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---	---	---

e Estimated

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.

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; 8 years (water years 1983-90), regulated, unadjusted, 78.3 ft³/s (56,730 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, 3,400 ft³/s May 3 at 1200 hours (gage height, 25.29 ft); no flow on Sept. 3-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.68	.32	.35	1080	104	176	239	796	2.3	.57	.02
2	.12	.64	.34	.32	740	100	218	315	794	2.1	.58	.01
3	.13	.63	.34	.31	364	100	439	2100	795	1.9	.52	.00
4	.14	.62	.33	.31	344	99	435	98	791	1.6	.51	.00
5	.15	.61	.34	.31	341	81	433	40	652	1.4	.49	.00
6	.18	.61	.34	.31	337	61	571	30	467	1.3	.48	.00
7	.24	.60	.34	.32	334	2060	441	23	462	1.2	.48	.00
8	.30	.59	.33	.33	333	300	435	152	460	1.2	.45	.00
9	.32	.57	.32	.33	333	392	433	368	458	1.1	.42	.00
10	.33	.60	.31	.34	334	464	359	364	456	1.1	.41	.08
11	.33	.60	.32	.36	331	458	184	365	323	1.0	.39	.13
12	e.35	.60	.32	.37	328	454	150	780	185	.97	.38	.13
13	e.35	.62	.32	.36	330	452	103	380	184	.92	.38	.12
14	e.38	.62	.32	.36	329	761	143	360	123	.89	.39	.11
15	e.41	.57	.32	.37	326	503	117	357	108	.85	.38	.11
16	e.45	.54	.32	.38	249	454	107	349	108	.81	.35	.10
17	e.46	.52	.32	119	116	445	106	469	108	.85	.32	.09
18	e.52	.53	.32	180	116	443	125	630	108	.85	.31	.09
19	.55	.53	.30	677	115	439	174	627	67	.80	.25	.08
20	.58	.52	.29	34	90	435	174	627	31	.81	.22	.07
21	.60	.50	.29	13	16	430	174	739	31	.77	.21	.06
22	.58	.50	.29	14	46	309	173	841	30	.70	.21	.13
23	.58	.47	.28	29	78	94	172	831	31	.69	.18	.17
24	.61	.43	.28	30	76	92	171	826	31	.68	.16	.16
25	.65	.42	.31	30	75	93	171	823	31	.72	.16	.15
26	.66	.41	.31	28	87	107	1230	818	31	.69	.11	.14
27	.66	.39	.32	28	100	121	288	819	31	.67	.08	.13
28	.67	.36	.32	29	102	126	233	814	31	.64	.07	.14
29	.67	.34	.32	28	---	952	189	809	23	.61	.06	.16
30	.74	.31	.32	28	---	189	184	805	3.2	.57	.05	.17
31	.75	---	.35	129	---	185	---	804	---	.52	.03	---
TOTAL	13.57	15.93	9.85	1401.43	7450	11303	8308	17602	7749.2	31.21	9.60	2.55
MEAN	.44	.53	.32	45.2	266	365	277	568	258	1.01	.31	.085
MAX	.75	.68	.35	677	1080	2060	1230	2100	796	2.3	.58	.17
MIN	.11	.31	.28	.31	16	61	103	23	3.2	.52	.03	.00
AC-FT	27	32	20	2780	14780	22420	16480	34910	15370	62	19	5.1
CAL YR 1989	TOTAL	42220.78	MEAN	116	MAX	1600	MIN	.00	AC-FT	83740		
WTR YR 1990	TOTAL	53896.34	MEAN	148	MAX	2100	MIN	.00	AC-FT	106900		

e Estimated

BRAZOS RIVER BASIN

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 1989 TO SEPTEMBER 1990

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)	
OCT 19...	1230	0.55	760	8.1	13.5	15	17	9.0	86	1.3	270	
NOV 30...	1315	0.34	943	8.2	10.0	17	10	9.5	85	2.4	380	
JAN 19...	1345	500	277	8.0	16.0	100	320	8.4	88	4.9	110	
MAR 14...	1645	1290	336	8.2	17.0	25	550	8.8	94	4.3	130	
APR 18...	1615	107	414	8.3	17.0	25	4.5	9.3	97	1.0	160	
JUN 29...	1200	28	381	8.1	27.0	45	23	7.1	90	1.8	150	
AUG 06...	1100	0.48	840	8.2	24.0	3	2.7	6.4	78	1.3	320	
22...	0955	0.22	786	8.0	28.0	13	6.5	6.9	90	1.4	290	
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)
OCT 19...	60	93	9.1	46	1	5.4	210	120	38	0.40	4.2	
NOV 30...	89	130	14	66	1	4.4	300	170	52	0.40	8.3	
JAN 19...	46	42	1.7	9.1	0.4	4.1	66	36	8.2	0.30	14	
MAR 14...	38	48	2.5	15	0.6	3.7	92	44	12	0.30	7.8	
APR 18...	36	59	2.9	20	0.7	5.0	120	49	13	0.30	8.7	
JUN 29...	28	55	3.1	17	0.6	4.4	120	47	14	0.40	3.2	
AUG 06...	130	110	11	55	1	3.6	190	170	46	0.40	7.0	
22...	110	97	11	59	2	3.3	180	170	47	0.60	7.8	
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)
OCT 19...	441	24	5	19	0.280	0.020	0.300	0.070	0.53	0.60	0.070	
NOV 30...	623	11	6	5	0.190	0.010	0.200	0.060	0.54	0.60	0.140	
JAN 19...	155	1550	253	1300	3.66	0.440	4.10	0.170	2.5	2.7	0.660	
MAR 14...	191	1840	150	1690	1.38	0.620	2.00	0.440	1.5	1.9	0.460	
APR 18...	232	21	21	0	1.37	0.030	1.40	0.040	0.66	0.70	0.030	
JUN 29...	218	356	18	338	0.870	0.030	0.900	0.040	0.36	0.40	0.100	
AUG 06...	517	5	<1	--	2.28	0.020	2.30	<0.010	--	0.60	0.030	
22...	504	10	4	6	0.980	0.020	1.00	0.060	0.74	0.80	0.120	

BRAZOS RIVER BASIN

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08093500 AQUILLA CREEK NEAR AQUILLA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	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)
OCT 19...	5.5	--	--	--	--	--	--	--	--	--
NOV 30...	14	2	110	<0.5	<1.0	<5	<3	<10	4	<10
JAN 19...	26	--	--	--	--	--	--	--	--	--
MAR 14...	21	5	31	<0.5	1.0	<5	<3	<10	63	10
APR 18...	--	--	--	--	--	--	--	--	--	--
JUN 29...	5.8	2	56	<0.5	1.0	<5	<3	<10	10	<10
AUG 06...	3.1	--	--	--	--	--	--	--	--	--
22...	3.5	1	110	<0.5	2.0	<5	<3	<10	14	<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)
OCT 19...	--	--	--	--	--	--	--	--	--	--
NOV 30...	42	33	0.5	<10	<10	1	<1.0	1100	<6	8
JAN 19...	--	--	--	--	--	--	--	--	--	--
MAR 14...	7	3	<0.1	<10	<10	<1	<1.0	260	7	13
APR 18...	--	--	--	--	--	--	--	--	--	--
JUN 29...	10	3	0.3	<10	<10	<1	<1.0	300	<6	5
AUG 06...	--	--	--	--	--	--	--	--	--	--
22...	39	22	<0.1	<10	<10	3	2.0	1000	<6	7

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 mi².

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.--Records good except those for estimated daily discharges, which are poor. Flow is 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 mi² 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 ft³/s (36,590 acre-ft/yr); 17 years (water years 1974-90) regulated, 46.1 ft³/s (33,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,900 ft³/s Apr. 30, 1977 (gage height, 22.27 ft), from rating curve extended above 9,000 ft³/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 ft³/s, by contracted-opening measurement).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,700 ft³/s Apr. 26 at 0930 hours (gage height, 20.15 ft, from high water mark); minimum daily, 4.4 ft³/s on Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	8.3	6.1	e6.0	12	13	40	1120	e110	14	16	7.4
2	8.8	6.8	6.2	e6.0	8.8	11	183	4500	e105	16	19	7.4
3	8.8	6.4	6.2	e6.0	8.5	9.0	132	e2900	e270	14	17	7.5
4	8.8	6.4	6.2	e6.0	7.2	8.6	69	e2000	e150	13	20	7.5
5	8.8	6.6	6.2	e6.0	6.9	8.2	34	e1500	e110	12	52	7.4
6	8.8	6.6	6.2	e6.0	6.6	8.1	28	e1200	e88	11	244	7.3
7	8.6	6.6	6.3	e6.0	6.5	8.8	26	e1000	e76	11	93	7.0
8	8.6	6.5	6.4	e6.0	6.4	9.0	24	e850	e66	11	48	8.8
9	8.6	6.4	6.3	e6.0	6.5	9.3	24	e700	e59	11	30	34
10	8.6	6.4	6.2	e6.0	6.8	9.0	24	e600	e53	12	23	7.5
11	8.8	6.2	6.2	6.0	7.5	847	23	e900	e49	12	19	6.0
12	8.8	6.2	6.2	6.0	7.9	345	21	e750	e46	11	16	5.5
13	8.6	5.8	6.1	6.0	7.9	181	21	e600	42	11	13	5.4
14	8.4	5.9	6.2	6.1	7.8	109	20	e500	40	11	12	5.3
15	8.3	6.0	5.9	6.5	7.4	89	28	e430	38	11	11	5.1
16	8.3	5.5	5.9	6.9	7.4	56	30	e370	34	13	11	5.1
17	8.3	5.5	5.9	7.4	7.4	44	27	e320	33	14	10	5.4
18	8.3	5.5	5.9	20	7.4	38	23	e700	30	14	9.5	5.3
19	8.3	5.7	5.9	9.2	7.4	32	21	e500	28	18	9.2	6.7
20	8.3	5.9	6.0	11	7.4	26	83	e350	27	17	8.7	5.5
21	8.3	5.9	e6.0	8.2	11	26	357	e280	22	15	8.6	5.2
22	8.4	6.4	e5.5	7.4	24	26	112	e230	23	15	8.4	6.0
23	8.6	6.6	e4.5	6.7	12	24	67	e180	22	19	8.2	6.6
24	8.9	6.6	e5.0	6.2	8.9	23	51	e150	20	33	7.9	6.1
25	9.3	6.8	e5.2	6.0	8.2	23	41	e130	20	19	7.8	5.3
26	8.3	6.8	e5.5	6.1	8.1	23	5450	e120	19	18	7.7	5.0
27	7.6	6.6	e5.5	6.3	8.1	23	3200	e300	17	15	7.6	4.8
28	7.7	6.6	e5.8	6.5	8.1	36	2100	e190	16	14	7.7	4.8
29	8.0	6.4	e5.8	6.7	---	43	1630	e170	15	14	7.7	4.6
30	7.8	6.1	e5.9	7.0	---	84	1320	e150	13	17	7.6	4.4
31	7.7	---	e5.9	7.0	---	65	---	e125	---	16	7.4	---
TOTAL	262.2	190.0	183.1	219.2	240.1	2257.0	15209	23815	1641	452	768.0	209.9
MEAN	8.46	6.33	5.91	7.07	8.57	72.8	507	768	54.7	14.6	24.8	7.00
MAX	9.3	8.3	6.4	20	24	847	5450	4500	270	33	244	34
MIN	7.6	5.5	4.5	6.0	6.4	8.1	20	120	13	11	7.4	4.4
AC-FT	520	377	363	435	476	4480	30170	47240	3250	897	1520	416

CAL YR 1989 TOTAL 52531.0 MEAN 144 MAX 5820 MIN 2.3 AC-FT 104200
WTR YR 1990 TOTAL 45446.5 MEAN 125 MAX 5450 MIN 4.4 AC-FT 90140

e Estimated

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 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 except those for estimated daily discharges, which are fair. 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 at station.

AVERAGE DISCHARGE.--44 years (water years 1924-67) unregulated, 195 ft³/s (141,300 acre-ft/yr); 23 years (water years 1968-90) regulated, 176 ft³/s (127,500 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 26	2200	*82,400	*a34.4	May 3	1130	24,600	22.30

a From floodmark.

Minimum daily discharge, 10 ft³/s Sept. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	21	20	22	191	35	175	2480	253	50	237	11
2	27	21	20	21	130	34	504	3580	211	49	98	11
3	25	20	20	21	76	34	361	14500	186	47	81	11
4	25	21	19	20	51	38	238	4060	739	45	96	11
5	24	24	20	19	41	38	182	2870	811	44	127	11
6	24	24	20	19	38	36	140	2200	414	42	201	11
7	24	22	19	19	34	187	120	1790	290	40	267	11
8	22	22	19	19	32	112	108	1490	215	38	154	10
9	21	20	19	18	34	67	104	1200	172	35	105	11
10	21	21	20	17	34	55	103	940	145	32	80	12
11	22	21	19	17	34	2260	97	844	132	30	64	25
12	22	21	19	17	34	1070	93	1200	122	29	55	31
13	19	21	19	17	36	505	90	1050	112	28	48	23
14	19	22	18	17	36	440	98	796	102	27	43	19
15	19	21	18	18	34	381	111	643	95	29	38	16
16	19	20	17	18	32	227	103	552	90	31	34	15
17	19	19	18	26	30	165	104	498	85	37	32	33
18	19	20	18	30	29	135	106	450	80	49	28	27
19	19	20	18	61	26	116	101	915	77	46	26	19
20	19	20	19	67	24	103	102	520	74	46	25	16
21	20	21	19	46	26	96	268	387	70	45	23	17
22	21	24	20	35	36	94	331	336	66	41	21	46
23	20	23	17	36	71	94	181	303	64	35	20	50
24	21	23	19	33	57	89	134	280	106	42	20	34
25	21	24	19	28	50	86	117	258	113	75	18	27
26	22	23	19	25	42	86	e32300	232	74	57	17	22
27	22	22	19	23	37	91	23400	214	64	46	16	21
28	21	21	19	22	36	120	4170	323	60	40	14	20
29	21	20	20	21	---	584	3360	371	56	38	13	18
30	22	20	19	20	---	252	2900	257	53	35	13	16
31	20	---	22	31	---	178	---	329	---	35	12	---
TOTAL	668	642	591	803	1331	7808	70201	45868	5131	1263	2026	605
MEAN	21.5	21.4	19.1	25.9	47.5	252	2340	1480	171	40.7	65.4	20.2
MAX	28	24	22	67	191	2260	32300	14500	811	75	267	50
MIN	19	19	17	17	24	34	90	214	53	27	12	10
AC-FT	1320	1270	1170	1590	2640	15490	139200	90980	10180	2510	4020	1200

CAL YR 1989	TOTAL	133050.5	MEAN	365	MAX	16700	MIN	7.1	AC-FT	263900
WTR YR 1990	TOTAL	136937	MEAN	375	MAX	32300	MIN	10	AC-FT	271600

e Estimated

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); 23 years (water years 1968-90) regulated, 210 ft³/s (152,100 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 26	2300	*56,900	*39.10	May 3	1400	27,800	31.36

Minimum daily discharge, 15 ft³/s July 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	31	29	31	292	49	286	2520	322	51	190	24
2	38	31	29	30	375	47	464	3070	274	49	162	25
3	36	30	29	30	126	45	439	17800	247	46	96	25
4	35	31	28	29	79	46	321	4720	489	42	113	25
5	35	32	28	29	61	51	279	3170	835	39	148	24
6	37	33	29	28	53	48	250	2480	489	38	206	23
7	39	32	29	28	49	385	231	2040	339	35	291	22
8	35	31	29	28	45	249	220	1700	262	34	197	22
9	34	30	28	27	45	114	217	1380	219	32	139	26
10	34	30	28	26	56	86	215	1110	185	29	102	27
11	34	28	28	26	48	2100	210	990	166	26	79	26
12	32	29	28	26	45	1660	205	1320	155	23	67	42
13	32	29	28	26	44	634	201	1140	143	22	60	37
14	31	29	28	26	48	694	206	940	134	21	54	32
15	31	29	28	27	46	545	216	807	125	22	49	29
16	31	28	28	28	43	372	208	699	118	26	45	27
17	30	28	28	39	41	312	204	671	111	29	43	28
18	30	28	28	49	40	279	204	595	106	37	40	47
19	30	28	28	74	39	256	202	864	101	40	37	32
20	30	28	28	90	37	240	202	657	94	36	36	27
21	31	29	28	67	41	232	253	525	88	41	35	25
22	31	31	28	47	50	226	406	457	82	32	33	61
23	31	31	28	45	82	222	266	412	78	28	32	57
24	31	31	29	43	78	217	228	382	81	26	31	39
25	31	31	29	37	69	212	214	352	148	73	30	34
26	31	31	29	34	58	211	20400	319	90	35	29	30
27	31	31	29	32	52	211	28200	295	71	31	28	27
28	30	29	29	31	52	232	4510	346	64	21	27	27
29	30	28	30	31	---	646	3510	467	59	19	26	25
30	34	29	29	30	---	403	2970	332	56	16	25	23
31	32	---	31	32	---	281	---	358	---	15	24	---
TOTAL	1016	896	885	1126	2094	11305	65937	52918	5731	1014	2474	918
MEAN	32.8	29.9	28.5	36.3	74.8	365	2198	1707	191	32.7	79.8	30.6
MAX	39	33	31	90	375	2100	28200	17800	835	73	291	61
MIN	30	28	28	26	37	45	201	295	56	15	24	22
AC-FT	2020	1780	1760	2230	4150	22420	130800	105000	11370	2010	4910	1820
CAL YR 1989	TOTAL	141381	MEAN	387	MAX	17100	MIN	13	AC-FT	280400		
WTR YR 1990	TOTAL	146314	MEAN	401	MAX	28200	MIN	15	AC-FT	290200		

BRAZOS RIVER BASIN

271

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 mi².

PERIOD OF RECORD.--August 1959 to September 1985. October 1985 to current year, (peaks above base discharge and 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 ft³/s (56,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,300 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 3	0730	*16,500	*15.95	May 12	0900	15,600	15.42

Minimum daily discharge not determined.

BRAZOS RIVER BASIN

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 mi².

PERIOD OF RECORD.--August 1959 to September 1985, October 1985 to current year, (peaks above base discharge and 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 mi² 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 ft³/s (23,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,400 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 3	0500	*2,800	*6.48	No peak greater than base discharge during year.			

Minimum daily 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 valves. 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 contents, 273,400 acre-ft May 5 at 1300 hours (elevation, 469.44 ft); minimum, 127,900 acre-ft Sept. 8 (elevation, 451.97 ft).

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

451.0	121,400	460.0	187,100	466.0	239,300
454.0	142,000	462.0	203,600	468.0	258,800
457.0	163,900	464.0	220,900	470.0	279,300

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147000	143800	141500	139600	143300	147300	151400	215400	150500	144200	134200	129800
2	146800	143700	141500	139600	144500	147300	151400	207500	149900	143900	134400	129600
3	146700	143500	141400	139600	144900	147300	151800	254300	149600	143400	134400	129200
4	146500	143400	141200	139600	145200	147300	151700	269400	150100	142900	134400	129100
5	146500	143400	141200	139600	145200	147400	151700	271600	151400	142700	134600	128900
6	146700	143400	141200	139600	145300	147500	151700	263500	151900	142200	134600	128500
7	146700	143300	141200	139600	145300	161200	151400	254300	151800	141700	134900	128200
8	146500	143200	141000	139600	145400	162900	151000	244600	151400	141300	135000	128400
9	146400	143100	140900	139600	145600	161200	150600	234300	150900	140800	135000	129100
10	146300	142900	140900	139600	145700	158100	150200	223500	150300	140400	135000	129800
11	146200	142900	140800	139500	145700	157700	150200	214000	150100	139900	134900	129700
12	146000	142800	140600	139300	145600	160300	150400	225200	149900	139500	134800	129600
13	145900	142700	140500	139300	145700	157200	150800	224200	149700	138800	134600	129300
14	145800	142700	140500	139300	145900	156900	151700	214000	149600	138300	134400	129200
15	145700	142600	140300	139300	145900	154900	152300	203700	149300	137900	134200	129100
16	145600	142400	140200	139500	145800	153200	152800	193100	149000	137700	134000	129100
17	145300	142200	140000	139800	145800	152100	153200	183900	148800	137400	133700	129000
18	144900	142200	140000	140800	146000	150700	152800	178100	148500	137100	133400	128800
19	144700	142100	139900	141000	146100	150000	151500	173200	148200	136900	133200	128800
20	144500	142100	139900	141200	146100	150000	151100	168200	147900	136700	132900	128700
21	144300	142100	139600	141300	146500	150300	150600	163900	147500	136400	132800	128500
22	144200	142200	139600	141300	146700	150600	150700	160000	147200	136000	132600	128400
23	144100	142100	139500	141500	146600	150800	150500	156600	146800	135700	132300	128600
24	144000	142000	139300	141600	146700	150800	150200	153900	146600	135400	132000	128600
25	143900	142000	139300	141500	146700	150700	150100	151900	146400	135000	131800	128400
26	143900	142000	139300	141300	146700	150700	175300	150600	146200	134800	131500	128200
27	143800	141900	139300	141300	146900	150900	239600	150100	145900	134600	131200	128000
28	143700	141700	139200	141500	147300	151100	237900	149900	145400	134500	130900	127800
29	143700	141500	139400	141300	---	153000	231700	150300	145100	134300	130600	127800
30	144000	141500	139600	141300	---	153400	223900	150800	144700	134200	130400	127600
31	143900	---	139600	141800	---	152400	---	150700	---	134200	130100	---
MAX	147000	143800	141500	141800	147300	162900	239600	271600	151900	144200	135000	129800
MIN	143700	141500	139200	139300	143300	147300	150100	149900	144700	134200	130100	127600
(↑)	454.26	453.93	453.66	453.97	454.74	455.44	464.34	455.21	454.38	452.89	452.29	451.92
(Φ)	-3200	-2400	-1900	+2200	+5500	+5100	+71500	-73200	-6000	-10500	-4100	-2500
CAL YR 1989	MAX	243800	MIN	130200	(Φ)	+10300						
WTR YR 1990	MAX	271600	MIN	127600	(Φ)	-19500						

(↑) 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. 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 good. 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); 50 years (water years 1941-90) regulated, 2,230 ft³/s (1,616,000 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, 40,800 ft³/s May 12 at 0900 hours (gage height, 24.35 ft); maximum gage height, 27.37 ft May 3 at 1530 hours (backwater from Tehuacana Creek); minimum daily, 13 ft³/s Oct. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2410	506	207	35	1890	888	5130	33600	25600	861	877	601
2	1400	406	200	45	3490	617	3560	33700	24600	902	904	155
3	1140	686	185	100	965	545	4650	20200	23500	1130	932	44
4	775	690	271	37	836	530	4850	10900	22600	878	969	884
5	726	425	371	69	882	530	4750	24900	25100	1040	250	1160
6	795	778	318	64	783	635	5020	36000	23800	1200	45	865
7	790	462	295	75	766	8160	2250	35400	17600	1000	823	1130
8	600	212	304	84	752	12200	1540	34900	3750	1010	766	965
9	566	158	397	179	782	3800	1600	36600	12600	891	791	280
10	508	231	367	373	787	3600	2250	34900	25700	824	50	630
11	22	199	363	359	763	3250	2930	34300	26400	978	672	327
12	14	184	382	218	731	3980	2310	34200	25100	715	50	132
13	13	239	512	202	833	3600	2260	11300	24200	947	652	39
14	601	173	752	245	1460	7240	1930	21400	13900	1080	800	45
15	510	103	826	100	777	10500	1140	26900	12100	665	752	196
16	498	18	826	38	719	6660	1060	31200	5050	363	783	174
17	459	27	682	258	515	5680	4980	32600	6400	315	748	44
18	190	205	761	1100	320	5520	3520	30800	4360	448	768	51
19	95	163	696	1710	228	5180	5590	32800	4340	368	125	2820
20	109	217	1040	902	2540	4730	2960	30500	4290	145	52	846
21	149	207	1020	511	753	4460	7010	28700	4060	279	661	545
22	270	187	1630	501	550	4250	6800	28900	2410	1990	769	356
23	283	228	3200	559	727	4440	8590	28600	239	1020	741	358
24	291	261	2340	575	881	3450	16900	28800	4040	738	715	237
25	664	184	1430	433	796	2520	19800	27500	1960	638	743	187
26	517	159	175	412	708	1990	22100	26900	1760	41	558	228
27	526	199	74	394	738	3330	11800	25500	1710	31	142	416
28	490	171	59	406	803	2700	24200	24300	1190	398	601	445
29	528	214	102	413	---	4250	33700	25000	1200	197	617	492
30	629	240	79	401	---	7690	35500	25500	1980	42	589	814
31	537	---	22	465	---	5470	---	26700	---	1090	637	---
TOTAL	17105	8132	19886	11263	26775	132395	250680	883500	351539	22224	18582	15466
MEAN	552	271	641	363	956	4271	8356	28500	11720	717	599	516
MAX	2410	778	3200	1710	3490	12200	35500	36600	26400	1990	969	2820
MIN	13	18	22	35	228	530	1060	10900	239	31	45	39
AC-FT	33930	16130	39440	22340	53110	262600	497200	1752000	697300	44080	36860	30680
CAL YR 1989	TOTAL	999951	MEAN	2740	MAX	24500	MIN	12	AC-FT	1983000		
WTR YR 1990	TOTAL	1757547	MEAN	4815	MAX	36600	MIN	13	AC-FT	3486000		

BRAZOS RIVER MAIN STEM

275

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 mi², of which 9,566 mi² 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. 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 use. 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 mi² in the Aquilla, Tehuacana, Castleman Creeks, and Cow Bayou basins. A U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--25 years, 2,599 ft³/s (1,883,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,700 ft³/s Feb. 4, 1986 (gage height, 23.90 ft); minimum daily, 32 ft³/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, 44,500 ft³/s May 4 at 1700 hours (gage height, 23.47 ft); minimum daily, 119 ft³/s Nov. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1340	608	289	160	554	930	6810	30800	25300	2310	989	749
2	2370	502	283	133	2660	1140	6140	31400	25100	1330	1420	704
3	1700	466	273	123	3990	943	4520	e34800	23800	1250	1300	425
4	1330	684	250	124	1740	667	5870	e43000	22900	1480	1310	208
5	989	720	289	153	1170	630	5670	34000	22600	1190	1350	744
6	896	607	431	130	1130	625	5560	29500	24100	1340	736	1390
7	1010	646	499	146	969	1040	5580	33100	23600	1530	406	1020
8	979	711	375	144	878	13700	2970	33500	14500	1420	654	1380
9	777	312	321	151	880	12400	2300	33300	5060	1330	964	1390
10	684	255	442	166	888	7130	2260	33600	16100	1220	945	1010
11	693	223	459	319	925	5460	3010	33100	23400	1220	496	1230
12	397	246	463	398	875	4760	3350	32900	24700	1290	488	850
13	290	240	470	285	847	5010	2880	32300	24100	1040	441	428
14	e250	232	554	257	964	12800	2840	22600	21600	1240	450	245
15	e500	252	845	285	1660	25100	2450	30600	13500	1440	919	158
16	e590	218	989	272	990	19700	1640	32700	e7820	1070	912	147
17	e600	155	961	192	850	12100	1580	32200	e4430	910	922	271
18	531	119	875	234	687	9140	5660	30900	e5940	460	897	188
19	420	137	874	1210	507	7090	4000	30100	4500	e626	895	672
20	252	235	847	1890	372	6180	6350	29900	e4460	727	434	2200
21	208	248	1090	1380	2730	5530	4110	29400	e4260	e649	192	967
22	227	e390	1340	741	1540	5230	7800	27600	e4380	e545	500	774
23	304	e380	2200	573	1640	5130	7470	27200	2580	1760	851	541
24	325	e350	3440	606	1330	5080	10900	27100	758	1710	875	486
25	354	e360	2550	614	1240	3900	16800	27000	4020	1010	862	379
26	519	e340	1570	528	1090	3150	19800	e26500	2460	1140	869	303
27	585	e310	442	444	846	2540	22900	e26100	2200	556	645	361
28	586	e290	250	443	958	4040	16100	e25600	2150	305	383	458
29	579	256	208	438	---	3270	24200	e25100	1600	334	550	472
30	628	309	165	441	---	7110	28500	e24500	1600	538	703	515
31	687	---	168	441	---	9130	---	e24000	---	443	681	---
TOTAL	21600	10851	24212	13421	34910	200655	240020	934400	363518	33413	24039	20665
MEAN	697	362	781	433	1247	6473	8001	30140	12120	1078	775	689
MAX	2370	720	3440	1890	3990	25100	28500	43000	25300	2310	1420	2200
MIN	208	119	165	123	372	625	1580	22600	758	305	192	147
AC-FT	42840	21520	48020	26620	69240	398000	476100	1853000	721000	66270	47680	40990
CAL YR 1989	TOTAL	1224214	MEAN	3354	MAX	40300	MIN	73	AC-FT	2428000		
WTR YR 1990	TOTAL	1921704	MEAN	5265	MAX	43000	MIN	119	AC-FT	3812000		

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 September 1990.

INSTRUMENTATION.--Beginning September 1980, specific conductance is recorded continuously at this station. From October 1980 to February 1984 and from December 1989 to September 1990, 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: 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, 1,420 microsiemens Apr. 24; minimum daily, 200 microsiemens Mar. 15.

WATER TEMPERATURES: Maximum daily, 34.5°C July 20, 22; minimum daily, 0.0°C Dec. 22-24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
OCT 30...	1320	612	1270	8.2	19.5	5.5	7.9	87	0.7	46	150	260
FEB 05...	1220	1050	470	8.0	12.0	130	11.6	108	2.4	940	860	130
MAR 14...	1833	20300	280	7.8	17.5	--	--	--	--	--	--	110
MAY 21...	1120	30000	818	8.1	22.5	90	11.0	129	0.5	150	900	200
AUG 21...	0940	189	929	8.3	29.5	15	8.1	107	1.8	34	120	220
SEP 20...	1100	2110	733	7.6	28.0	--	--	--	--	--	--	180

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (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 TOT IT FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT 30...	130	73	19	160	4	5.0	134	140	230	0.30	4.5	673
FEB 05...	50	45	5.2	37	1	4.6	84	54	48	0.30	8.4	284
MAR 14...	21	39	3.9	13	0.5	4.3	92	22	16	<0.10	8.7	--
MAY 21...	95	60	12	85	3	4.9	105	82	130	<0.10	7.6	474
AUG 21...	67	64	14	98	3	5.0	152	90	140	0.30	7.6	530
SEP 20...	56	56	10	71	2	4.9	125	60	110	0.20	8.0	--

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BRAZOS RIVER MAIN STEM

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08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued
(National stream-quality accounting network)

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	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)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 30...	15	25	94	10	1	110	<0.5	<1.0	<1	<3	1	7
FEB 05...	204	578	99	20	4	51	<0.5	<1.0	<5	<3	<10	21
MAR 14...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 21...	338	27400	76	20	1	81	<0.5	<1.0	1	<3	1	20
AUG 21...	23	12	91	<10	3	99	<0.5	<1.0	<1	<3	2	4
SEP 20...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 30...	1	17	12	<0.1	<10	2	<1	<1.0	930	<6	8
FEB 05...	<10	7	2	<0.1	<10	<10	<1	<1.0	440	<6	<3
MAR 14...	--	--	--	--	--	--	--	--	--	--	--
MAY 21...	<1	15	2	0.2	<10	2	<1	<1.0	590	<6	11
AUG 21...	<1	18	5	<0.1	<10	1	<1	<1.0	770	<6	6
SEP 20...	--	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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)
OCT. 1989	21600	1190	682	39800	210	12000	140	8130	280
NOV. 1989	10851	1250	715	21000	220	6420	150	4310	290
DEC. 1989	24212	1250	719	47000	220	14400	150	9670	290
JAN. 1990	13421	1110	632	22900	190	6750	130	4650	260
FEB. 1990	34910	802	454	42800	120	11500	89	8430	210
MAR. 1990	200655	510	287	156000	71	38200	55	29900	140
APR. 1990	240020	1020	581	377000	170	109300	120	76100	250
MAY 1990	934400	787	445	1124000	120	300000	88	221100	200
JUNE 1990	363518	620	350	343000	88	85900	68	66300	170
JULY 1990	33413	868	492	44400	130	12100	97	8790	220
AUG. 1990	24039	921	523	34000	140	9400	100	6760	230
SEPT 1990	20665	822	466	26000	130	7020	92	5130	210
TOTAL	1921704	**	**	2277000	**	613000	**	449000	**
WTD.AVG.	5265	774	439	**	120	**	87	**	200

BRAZOS RIVER MAIN STEM

08098290 BRAZOS RIVER NEAR Highbank, TX--Continued
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	1140	1110	1130	---	---	e1280	---	---	e1210	1270	1250	1260
2	1130	1110	1120	---	---	e1280	---	---	e1210	1280	1250	1270
3	1120	1100	1110	---	---	e1280	---	---	e1210	1280	1260	1270
4	1130	1110	1120	---	---	e1270	---	---	e1200	1300	1260	1270
5	1140	1120	1130	---	---	e1260	1200	1180	1190	1300	1230	1250
6	1150	1130	1140	---	---	e1270	1210	1180	1190	1320	1230	1260
7	1140	1130	1130	---	---	e1260	1210	1190	1200	1290	1240	1250
8	1140	1110	1130	---	---	e1250	1200	1190	1200	1260	1210	1240
9	1130	1110	1120	---	---	e1260	1210	1190	1200	1250	1190	1220
10	1130	1080	1090	---	---	e1260	1230	1200	1210	1280	1180	1210
11	1140	1090	1120	---	---	e1250	1240	1220	1220	1290	1180	1200
12	1250	1130	1200	---	---	e1250	1240	1220	1230	1230	1200	1210
13	1280	1250	1260	---	---	e1250	1280	1220	1230	1240	1200	1220
14	1300	1270	1290	---	---	e1260	1280	1220	1240	1250	1210	1230
15	1300	1280	1290	---	---	e1260	1260	1230	1240	1270	1210	1230
16	1310	1270	1300	---	---	e1260	1260	1240	1250	1260	1180	1220
17	1260	1190	1220	---	---	e1270	1320	1250	1260	1220	1180	1200
18	1270	1230	1260	---	---	e1280	1270	1250	1250	1190	937	1060
19	1310	1270	1290	---	---	e1260	1280	1260	1270	1170	1140	1150
20	1310	1280	1300	---	---	e1250	1280	1260	1270	1160	1060	1110
21	1330	1310	1320	---	---	e1240	1300	1260	1290	1160	1090	1120
22	1330	1290	1310	---	---	e1230	1320	1300	1310	1190	1100	1170
23	1330	1290	1310	---	---	e1220	1300	1280	1300	1210	1110	1140
24	1330	1310	1320	---	---	e1210	1300	1250	1270	1110	1020	1080
25	1320	1290	1300	---	---	e1200	1290	1250	1260	1010	870	941
26	1330	1280	1300	---	---	e1200	1270	1220	1240	870	840	850
27	1330	1310	1320	---	---	e1200	1230	1220	1220	880	860	866
28	1340	1310	1330	---	---	e1200	1280	1220	1240	910	870	886
29	1340	1330	1340	---	---	e1200	1240	1210	1220	1000	910	944
30	1330	1300	1310	---	---	e1200	1310	1220	1240	1090	1010	1050
31	---	---	e1290	---	---	---	1300	1240	1250	1130	1100	1120
MONTH	1340	1080	1230	---	---	1250	1320	1180	1240	1320	840	1150
e Estimated												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	1120	969	1050	1040	955	992	710	660	688	1200	1140	1170
2	991	910	958	991	962	980	750	700	729	1150	1110	1130
3	906	796	856	980	889	927	720	700	711	1100	720	886
4	794	689	748	978	916	959	800	700	755	730	580	635
5	678	470	563	1030	959	981	840	800	816	990	580	699
6	489	478	481	1010	966	989	---	---	e820	1040	890	997
7	497	460	479	1010	767	938	---	---	e880	890	840	863
8	543	497	515	848	279	421	820	760	792	870	810	844
9	580	543	565	314	279	292	760	700	747	970	870	920
10	813	589	678	440	305	362	700	590	666	1000	860	964
11	830	775	804	450	422	436	760	540	577	920	870	893
12	820	782	810	---	---	e460	750	550	616	910	840	886
13	819	799	811	---	---	e480	700	660	681	820	740	793
14	855	808	818	---	---	e438	770	670	685	870	700	769
15	881	807	817	340	200	278	920	680	719	880	810	832
16	825	788	802	450	260	339	900	750	816	850	800	815
17	851	795	806	480	280	371	950	860	897	870	780	801
18	823	803	813	640	350	449	940	910	921	830	780	804
19	885	812	840	750	630	674	990	690	857	850	790	826
20	976	885	932	710	690	704	930	720	845	800	790	794
21	985	856	943	860	710	728	1060	890	987	---	---	e750
22	892	781	803	750	720	730	1010	990	997	757	672	701
23	854	715	774	1000	730	764	1010	980	994	730	600	651
24	742	696	715	820	750	789	1420	1040	1240	680	601	621
25	896	733	804	830	820	821	1410	1370	1400	---	---	e615
26	996	905	948	830	810	817	1390	1250	1330	---	---	e600
27	994	950	970	840	820	826	1290	770	980	---	---	e590
28	1010	957	985	850	840	845	1140	780	928	---	---	e575
29	---	---	---	850	830	839	1200	1120	1160	---	---	e565
30	---	---	---	860	700	780	1230	1180	1190	---	---	e550
31	---	---	---	710	540	587	---	---	---	---	---	e540
MONTH	1120	460	789	1040	200	677	1420	540	881	1200	580	777

e Estimated

BRAZOS RIVER MAIN STEM

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08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	e535	805	771	781	1000	838	953	986	960	971
2	---	---	e530	795	781	789	938	890	917	967	954	961
3	---	---	e520	801	786	795	907	870	892	969	933	950
4	---	---	e515	834	804	817	875	828	852	956	922	921
5	---	---	e505	847	820	829	863	790	835	---	---	e975
6	---	---	e495	863	830	846	---	---	e860	1100	1010	1060
7	---	---	e485	859	837	848	---	---	e885	1090	1050	1070
8	---	---	e565	865	843	852	---	---	e905	1080	949	1030
9	---	---	e750	864	850	857	---	---	e925	957	780	873
10	---	---	e730	975	856	883	---	---	e940	803	786	793
11	---	---	e710	892	863	883	---	---	e930	826	792	810
12	---	---	e690	908	876	896	---	---	e925	832	815	822
13	---	---	e665	933	891	917	---	---	e915	836	820	826
14	---	---	e665	962	916	946	---	---	e905	---	---	e770
15	---	---	e700	973	932	957	914	883	895	---	---	e715
16	---	---	e735	970	927	955	900	872	886	732	664	674
17	---	---	e760	980	938	960	907	888	895	661	643	647
18	---	---	e790	---	---	e940	923	895	909	693	643	677
19	---	---	e815	---	---	e910	929	911	919	723	689	706
20	---	---	e850	---	---	e885	944	917	930	697	618	635
21	---	---	e880	---	---	e865	---	---	e935	627	607	613
22	---	---	e930	---	---	e840	---	---	e940	648	607	632
23	---	---	e880	---	---	e820	---	---	e950	726	646	681
24	---	---	e820	830	782	798	972	949	954	748	725	735
25	---	---	e760	897	835	869	985	929	951	745	730	737
26	---	---	e720	908	873	891	---	---	e965	757	734	747
27	---	---	e740	961	879	928	---	---	e980	777	748	763
28	769	748	757	---	---	e965	---	---	e990	769	749	760
29	767	754	762	---	---	e990	---	---	e1000	749	689	724
30	775	763	769	1030	970	1010	1070	986	1010	742	689	713
31	---	---	---	1010	943	974	1100	981	1020	---	---	---
MONTH	775	748	701	1030	771	887	1100	790	928	1100	607	800

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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

BRAZOS RIVER MAIN STEM

08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued
(National stream-quality accounting network)

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	16.0	13.5	15.0	13.5	11.5	12.0	17.5	16.5	17.5	20.5	20.0	20.5
2	15.5	13.0	14.0	13.5	11.0	12.5	18.0	16.5	17.5	21.0	20.5	20.5
3	14.5	12.5	13.5	16.0	11.0	13.5	19.0	17.0	18.0	20.5	20.0	20.5
4	14.0	12.0	13.0	16.5	13.0	15.0	19.0	17.5	18.0	20.5	20.0	20.0
5	13.5	10.5	12.0	17.5	14.0	16.0	20.0	17.5	19.0	20.5	20.0	20.0
6	14.5	11.5	13.0	17.0	16.0	16.5	18.0	15.5	17.0	---	---	---
7	15.5	12.0	13.5	18.0	17.0	17.5	17.5	15.5	16.5	21.0	20.0	20.5
8	18.0	14.0	15.5	17.0	16.5	17.0	16.0	15.5	15.5	21.0	20.5	20.5
9	17.5	17.0	17.5	19.5	17.0	18.0	17.5	16.0	17.0	21.5	20.5	21.0
10	17.5	14.5	16.0	20.0	19.0	19.5	18.5	17.0	17.5	21.0	20.5	21.0
11	17.0	13.5	15.5	19.5	19.0	19.5	19.5	17.0	18.0	21.0	20.5	21.0
12	17.0	13.5	15.5	---	---	---	19.5	17.5	18.5	21.5	20.5	21.0
13	18.0	15.0	16.5	---	---	---	18.5	17.5	18.0	23.5	21.0	22.0
14	18.5	16.5	17.5	---	---	---	20.0	18.0	19.0	23.5	23.0	23.5
15	16.5	14.0	15.5	17.5	16.5	17.0	21.0	19.5	20.0	23.0	22.0	22.5
16	15.0	12.5	14.0	17.5	15.5	16.5	21.5	20.5	21.0	22.5	22.0	22.0
17	13.0	11.5	12.5	17.5	16.0	16.5	21.5	19.0	20.5	22.5	21.5	22.0
18	12.0	11.5	12.0	17.0	16.0	16.5	20.0	17.5	18.5	22.5	22.0	22.0
19	13.5	12.0	12.5	17.0	16.0	16.5	19.5	18.0	18.5	22.5	22.0	22.0
20	16.0	11.5	14.0	17.0	15.5	16.0	22.0	19.0	20.0	22.5	22.0	22.5
21	15.0	12.0	14.0	17.0	15.0	16.0	22.0	19.5	20.0	---	---	---
22	13.0	11.0	12.0	17.0	16.0	16.5	20.5	19.5	20.0	23.5	23.0	23.5
23	13.0	10.0	11.5	17.5	16.0	16.5	20.5	18.5	19.5	24.5	23.5	24.0
24	16.0	11.5	14.0	16.5	14.5	16.0	18.5	17.5	18.0	24.5	24.0	24.0
25	17.5	13.0	15.0	14.5	12.5	13.5	19.0	18.0	18.5	24.0	23.5	23.5
26	17.5	14.5	16.0	12.5	11.5	12.0	18.0	18.0	18.0	24.5	23.5	23.5
27	18.5	15.5	17.0	13.0	11.5	12.5	19.0	18.0	19.0	24.5	23.5	24.0
28	17.0	14.0	16.0	14.5	12.5	14.0	20.5	19.0	20.0	24.0	23.5	24.0
29	---	---	---	15.5	14.5	15.5	21.5	20.0	21.0	24.0	23.5	24.0
30	---	---	---	16.0	15.5	16.0	21.5	20.5	21.0	24.0	23.5	23.5
31	---	---	---	17.0	16.0	16.5	---	---	---	24.0	23.5	24.0
MONTH	18.5	10.0	14.5	20.0	11.0	15.5	22.0	15.5	18.5	24.5	20.0	22.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	24.0	24.0	24.0	31.0	28.5	29.5	31.5	28.5	30.0	32.5	29.5	31.0
2	24.5	24.0	24.0	32.0	28.5	30.5	31.5	28.0	30.0	31.0	28.5	29.5
3	25.0	24.5	24.5	32.5	29.0	30.5	30.5	28.0	29.5	31.0	28.0	29.5
4	25.5	24.5	25.0	32.0	29.0	30.5	31.0	28.0	29.5	31.0	27.0	29.5
5	26.5	25.0	26.0	31.0	29.0	30.0	31.0	28.0	29.5	32.0	26.5	29.5
6	27.0	26.0	26.5	30.5	28.5	29.5	---	---	---	32.0	29.0	30.5
7	26.5	25.5	26.0	30.0	28.0	29.0	29.5	27.0	28.5	31.5	28.5	30.0
8	25.5	24.0	24.5	31.0	28.0	29.5	30.5	24.5	27.5	31.5	28.5	30.0
9	26.0	24.5	25.0	31.5	28.0	30.0	30.0	27.0	28.5	29.5	27.0	28.0
10	26.0	25.5	26.0	32.0	29.0	30.5	31.0	27.5	29.5	27.0	26.0	26.5
11	25.5	25.0	25.5	32.5	29.0	30.5	31.0	27.5	29.5	27.5	25.5	26.0
12	25.5	25.0	25.5	31.0	29.0	30.0	31.5	27.0	29.5	27.5	25.0	26.0
13	25.5	25.5	25.5	30.0	27.5	28.5	31.0	28.0	29.5	28.0	26.0	27.0
14	25.5	25.5	25.5	29.0	25.5	27.0	32.0	26.5	29.5	30.0	26.0	28.0
15	26.0	25.5	25.5	27.5	25.5	26.0	31.5	28.5	30.0	30.5	27.5	29.5
16	26.0	25.5	26.0	25.5	24.5	25.0	31.5	29.0	30.0	30.5	28.5	29.5
17	26.0	26.0	26.0	26.5	24.0	25.0	31.5	28.5	30.0	30.5	27.5	29.0
18	26.5	26.0	26.5	30.0	23.5	25.5	32.0	28.5	30.0	31.0	27.5	29.5
19	27.0	26.5	27.0	31.0	24.5	27.5	32.0	28.5	30.5	30.5	28.0	29.5
20	27.5	27.0	27.0	34.5	24.5	27.0	32.5	29.0	31.0	---	---	---
21	27.5	27.5	27.5	33.5	25.5	28.0	34.0	27.0	30.0	31.0	28.0	29.5
22	29.0	27.5	28.0	34.5	24.0	28.0	32.5	27.0	30.0	29.5	27.5	28.5
23	30.5	28.5	29.5	30.0	25.5	28.0	32.5	29.5	31.0	27.5	25.0	26.5
24	29.5	27.5	28.5	29.5	27.5	28.5	32.5	29.5	31.0	25.0	22.5	24.0
25	29.5	27.0	28.5	30.0	27.0	28.5	32.5	29.0	30.5	27.0	22.5	24.5
26	30.5	27.5	29.0	31.0	27.0	29.0	33.0	29.5	31.0	27.5	23.5	25.5
27	30.5	28.0	29.5	31.5	28.0	30.0	32.5	29.5	31.5	28.0	24.5	26.5
28	30.5	28.0	29.0	32.5	28.5	30.5	32.5	30.0	31.0	29.0	25.0	27.0
29	31.0	28.0	29.5	34.0	29.0	32.0	33.0	29.0	31.0	28.5	25.0	27.0
30	31.5	28.0	29.5	33.0	30.0	31.5	33.5	30.0	31.5	28.5	25.0	27.0
31	---	---	---	32.5	28.0	30.0	33.5	30.0	31.5	---	---	---
MONTH	31.5	24.0	26.5	34.5	23.5	29.0	34.0	24.5	30.0	32.5	22.5	28.0

BRAZOS RIVER BASIN

281

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 mi².

PERIOD OF RECORD.--September 1960 to September 1985 (continuous-record station), October 1985 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. 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. Only daily discharges greater than 600 ft³/s are published. Flow is regulated by Leon Reservoir, capacity 40,200 acre-ft, about 17.5 mi upstream. Numerous diversions above station for municipal, steam powerplant operation, and other uses. Recording rain gage discontinued May 31, 1978.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s Apr. 26, 1990 (gage height, 19.00 ft, from floodmarks), from rating curve extended above 17,600 ft³/s; prior to Apr. 26, 1990, maximum discharge, 7,540 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 26	0900	*24,500	*19.00	May 2	1430	7,220	15.39

Minimum daily discharge not determined.

BRAZOS RIVER BASIN

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 mi².

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.--No estimated daily discharges. Records good. Only daily discharges greater than 250 ft³/s are published. Flow may be slightly affected by Nabors Lake 0.4 mi upstream on Spring Branch. One observation of water temperature was made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,500 ft³/s Apr. 26, 1990 (gage height, 23.65 ft), from floodmark, from rating curve extended above 17,000 ft³/s; prior to Apr. 26, 1990, maximum discharge, 10,400 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 26	1500	*19,500	a*23.65	Aug. 6	0100	2,500	18.31
May 2	1100	6,760	21.26				

a From floodmark.

Minimum daily discharge not determined.

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.

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 contents, 383,100 acre-ft May 2 at 2200 hours (elevation, 1,197.63 ft); minimum, 52,810 acre-ft Jan. 15 (elevation, 1,160.52 ft).

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

1,160.0	50,620	1,175.0	138,700	1,190.0	283,900
1,165.0	74,250	1,180.0	180,100	1,195.0	346,800
1,170.0	103,600	1,185.0	228,400	1,198.0	388,300

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60510	55730	53890	53110	54110	56350	61730	361800	238000	144300	86800	64210
2	60320	55600	53930	53070	54150	56400	61960	382900	235700	141000	86050	63820
3	60180	55470	53850	53200	54110	56440	62010	372200	234400	137700	85470	63440
4	59900	55380	53800	53160	54060	56490	61960	367300	233200	134400	85300	63010
5	59720	55380	53800	53200	54060	56440	62060	366000	230100	131100	90220	62630
6	59670	55330	53800	53110	54060	56670	61580	361100	226800	127800	95970	62200
7	59440	55290	53980	53110	54020	56760	61160	355800	223600	124400	94680	61820
8	59210	55160	53760	53070	54020	57390	60690	351500	220500	121000	92320	61680
9	59020	55110	53630	53070	54110	57520	60320	347500	217100	117600	89740	61730
10	58840	55020	53720	53070	54150	57700	60040	342800	213900	114300	87210	61630
11	58610	54980	53800	53070	54150	58020	59810	339200	210700	111200	84720	61490
12	58430	54890	53500	53030	54110	59900	59720	334900	207200	108200	82280	61260
13	58250	54800	53460	52900	54060	61020	59810	330100	203500	105100	79880	61020
14	58060	54850	53460	52900	54150	62060	59900	325100	200300	102000	77680	60880
15	57880	54760	53460	52900	54110	62290	59860	320100	196900	99580	76220	60690
16	57840	54590	53330	52940	53980	62440	60180	315400	193600	97210	75310	60970
17	57660	54460	53280	53330	53890	62340	60690	310400	190400	94740	74510	60970
18	57300	54410	53280	53540	53890	62150	60690	305500	187100	93220	73770	60970
19	57070	54410	53280	53760	53890	61960	60790	300400	183800	92320	73040	60970
20	56890	54370	53240	53930	54020	61680	63200	295400	180500	91410	72250	60830
21	56710	54370	53410	54020	54670	61400	68260	290400	177300	90640	71470	60740
22	56530	54460	53160	54060	55330	61160	70650	285300	174100	90280	70800	60740
23	56400	54320	53070	54060	55600	61070	71470	280300	170700	91290	69980	60460
24	56260	54190	53070	54060	55640	61070	71730	275500	167300	91650	69220	60320
25	56180	54190	53070	54020	55690	60830	82220	270700	164100	91050	68610	60270
26	56040	54150	53070	53890	55690	60690	279500	265800	160700	90460	67750	60230
27	55860	54150	53070	53980	55780	60740	335900	261600	157400	89860	67000	60130
28	55780	54020	53070	53930	56350	60690	346400	256900	154100	89330	66260	59990
29	55640	53930	53070	53890	---	60790	354200	252000	150800	88800	65480	59860
30	55910	53930	53160	53850	---	60930	358000	247600	147400	88090	64840	59720
31	55780	---	53160	53850	---	61160	---	242900	---	87440	64400	---
MAX	60510	55730	53980	54060	56350	62440	358000	382900	238000	144300	95970	64210
MIN	55640	53930	53070	52900	53890	59720	242900	147400	87440	64400	59720	59720
(↑)	1161.20	1160.78	1160.60	1160.76	1161.33	1162.38	1195.83	1186.37	1176.12	1167.37	1163.06	1162.07
(Φ)	-4820	-1850	-770	+690	+2500	+4810	+296840	-115100	-95500	-59960	-23040	-4680
CAL YR 1989	MAX	137900	MIN	46050	(Φ)	+6800						
WTR YR 1990	MAX	382900	MIN	52900	(Φ)	-880						

(↑) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.

BRAZOS RIVER BASIN

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.

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

Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982.

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); 27 years (water years 1964-90); 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, 21,900 ft³/s May 3 at 0300 hours (gage height, 18.19 ft) caused by emergency releases from Proctor Lake; minimum daily, 1.3 ft³/s Dec. 3, 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	24	1.4	4.3	5.7	5.3	60	1560	2780	1830	446	173
2	35	24	1.4	4.3	4.4	4.5	61	7900	2440	1810	454	186
3	56	23	1.3	4.6	3.8	4.8	90	20800	1990	1840	452	198
4	65	23	1.4	4.7	3.8	4.9	139	12100	2120	1840	466	200
5	65	23	1.4	4.7	3.6	4.9	141	7700	1930	1840	483	205
6	65	23	1.5	4.6	4.0	4.9	173	7540	1900	1850	708	204
7	66	23	1.5	4.7	3.8	5.1	261	6250	1860	1880	1410	152
8	67	22	1.7	4.7	4.1	5.2	264	4620	1860	1880	1530	76
9	67	20	1.8	4.6	3.9	5.0	266	4060	1920	1890	1590	66
10	64	18	1.9	4.6	4.3	5.3	260	3980	1890	1830	1550	65
11	59	17	1.8	4.7	4.0	7.3	142	3970	1870	1770	1510	67
12	58	17	1.8	4.2	3.9	7.7	10	3940	1870	1720	1490	66
13	57	16	2.3	4.7	4.0	6.6	7.8	3890	1900	1660	1450	67
14	57	15	3.2	5.0	4.0	6.3	8.4	3880	1890	1620	1370	68
15	56	14	2.9	4.9	4.0	5.5	8.5	3850	1920	1580	1070	69
16	57	14	2.4	4.9	3.9	4.7	8.2	3810	1870	1550	608	66
17	56	14	2.7	7.2	4.1	127	8.1	3720	1860	1510	491	64
18	52	13	2.4	4.9	4.2	129	7.2	3720	1840	1350	492	62
19	51	12	1.8	5.6	4.3	127	7.3	3670	1840	735	490	64
20	51	13	2.0	4.1	4.2	128	12	3640	1860	674	475	65
21	51	13	1.8	4.1	9.2	131	10	3580	1790	596	463	66
22	51	13	1.4	3.9	5.0	132	8.4	3470	1770	569	466	65
23	51	12	1.4	4.2	4.3	100	106	3390	1830	559	462	64
24	47	12	1.3	4.2	4.2	51	243	3310	1860	563	454	45
25	43	12	1.3	3.8	4.4	53	361	3270	1850	549	449	8.2
26	44	12	4.5	3.4	4.4	54	1890	3200	1840	491	447	8.1
27	43	12	5.1	3.5	4.6	54	1830	3130	1910	429	447	23
28	42	12	4.5	3.4	6.3	56	2000	3040	1860	421	450	54
29	42	10	4.6	3.7	---	56	1710	2990	1840	420	448	54
30	35	2.1	4.7	4.0	---	56	1570	2920	1870	416	366	54
31	25	---	4.8	3.9	---	58	---	2840	---	418	174	---
TOTAL	1606	478.1	74.0	138.1	124.4	1442.3	11662.9	149740	57830	38090	23161	2624.3
MEAN	51.8	15.9	2.39	4.45	4.44	46.5	389	4830	1928	1229	747	87.5
MAX	67	24	5.1	7.2	9.2	132	2000	20800	2780	1890	1590	205
MIN	25	2.1	1.3	3.4	3.6	4.5	7.2	1560	1770	416	174	8.1
AC-FT	3190	948	147	274	247	2860	23130	297000	114700	75550	45940	5210

CAL YR 1989 TOTAL 55941.94 MEAN 153 MAX 1150 MIN .87 AC-FT 111000
WTR YR 1990 TOTAL 286971.1 MEAN 786 MAX 20800 MIN 1.3 AC-FT 569200

BRAZOS RIVER BASIN

285

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. 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 except those for estimated daily discharges, which are fair. 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 at station.

AVERAGE DISCHARGE.--6 years (water years 1926-31) unregulated, 130 ft³/s (94,180 acre-ft/yr); 30 years (water years 1961-90) regulated, 166 ft³/s (120,300 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, 24,000 ft³/s May 4 at 0400 hours (gage height, 33.26 ft); minimum daily, 4.2 ft³/s Dec. 12, Jan. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	45	16	9.4	15	12	82	1570	2310	1660	296	155
2	32	31	17	9.2	12	12	345	1570	2310	1660	307	128
3	28	27	14	8.8	11	13	154	4530	2330	1630	311	128
4	28	27	11	9.6	14	13	89	20700	2050	1630	335	128
5	47	26	9.0	11	13	13	132	13500	2210	1630	365	126
6	56	26	7.2	10	12	12	151	10100	1890	1640	371	119
7	60	26	5.9	9.9	10	14	156	8010	1770	1630	429	115
8	59	25	5.0	10	10	13	230	7280	1720	1660	905	113
9	58	24	5.0	10	11	13	249	4800	1680	1660	1230	90
10	56	25	5.2	9.0	12	13	249	3370	1710	1670	1400	70
11	52	24	4.4	8.2	10	672	243	3030	1720	1650	1440	69
12	47	22	4.2	7.5	11	123	222	3060	1700	1620	1410	67
13	43	18	4.6	5.6	12	44	82	3080	1680	1590	1360	66
14	44	16	5.6	4.4	12	31	40	2940	1700	1560	1310	66
15	46	15	5.6	4.2	12	24	34	2910	1690	1530	1260	63
16	49	15	5.0	6.8	10	21	31	2890	1700	1540	1080	62
17	49	13	5.3	9.2	11	19	89	2840	1680	1550	644	65
18	49	13	5.6	13	11	71	129	2820	1650	1490	375	84
19	52	14	6.1	13	11	176	65	2880	1660	1430	348	79
20	51	15	7.0	19	10	178	43	2910	1650	912	341	78
21	51	16	7.0	18	14	181	35	2770	1680	606	332	77
22	e50	17	6.1	15	15	181	41	2700	1670	499	314	81
23	e50	16	5.6	13	26	179	47	2640	1630	473	323	80
24	e49	17	5.8	12	24	170	35	2600	1640	466	322	79
25	49	18	6.4	10	16	111	176	2560	1660	476	309	77
26	47	17	6.7	9.9	13	75	4790	2530	1660	431	301	61
27	41	19	7.0	9.8	12	76	6110	2490	1650	398	294	35
28	40	17	6.7	9.3	12	79	4720	2480	1680	330	289	25
29	41	17	6.4	9.3	---	80	1950	2470	1680	317	283	23
30	48	16	5.0	9.4	---	78	1750	2400	1650	310	282	59
31	49	---	7.9	9.2	---	77	---	2360	---	298	271	---
TOTAL	1472	617	219.3	312.7	362	2774	22469	132790	53410	35946	18837	2468
MEAN	47.5	20.6	7.07	10.1	12.9	89.5	749	4284	1780	1160	608	82.3
MAX	60	45	17	19	26	672	6110	20700	2330	1670	1440	155
MIN	28	13	4.2	4.2	10	12	31	1570	1630	298	271	23
AC-FT	2920	1220	435	620	718	5500	44570	263400	105900	71300	37360	4900
CAL YR 1989	TOTAL	87538.4	MEAN	240	MAX	6870	MIN	2.3	AC-FT	173600		
WTR YR 1990	TOTAL	271677.0	MEAN	744	MAX	20700	MIN	4.2	AC-FT	538900		

e Estimated

BRAZOS RIVER BASIN

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. 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 at station.

AVERAGE DISCHARGE.--40 years, 250 ft³/s (181,100 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, 17,900 ft³/s May 5 at 2200 hours (gage height, 28.63 ft); minimum daily, 14 ft³/s Dec. 14-19, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	183	46	23	17	100	26	142	2670	2750	1660	407	340
2	96	49	24	17	166	24	176	2140	2670	1650	414	292
3	64	48	24	17	59	22	435	8140	2620	1660	399	203
4	44	43	24	16	32	21	347	6230	2650	1630	408	179
5	35	34	24	15	25	21	193	9160	2380	1610	422	179
6	34	29	24	16	21	21	210	15000	2410	1620	516	174
7	42	29	23	16	20	283	231	11200	2170	1630	460	167
8	59	29	21	16	21	423	224	9140	1930	1620	437	156
9	62	27	19	17	23	152	233	7890	1870	1640	624	155
10	64	26	17	18	21	58	300	7240	1820	1660	978	147
11	61	25	16	18	21	976	301	5720	1820	1670	1200	110
12	61	26	15	18	22	1960	294	7220	1850	1670	1300	88
13	56	26	15	17	23	595	286	4110	1830	1600	1300	87
14	53	28	14	17	22	651	248	3650	1800	1540	1260	84
15	48	26	14	18	20	329	147	3480	1800	1500	1230	82
16	47	23	14	18	19	198	107	3310	1800	1490	1180	82
17	46	19	14	19	19	116	84	3220	1800	1510	1060	86
18	50	17	14	26	18	90	72	3220	1800	1490	763	83
19	50	18	14	27	18	75	132	3150	1760	1470	502	76
20	49	20	15	24	18	101	182	3100	1750	1400	428	100
21	51	21	15	22	24	190	118	3150	1720	1070	416	97
22	53	22	15	25	24	194	88	3060	1710	707	408	114
23	51	20	14	22	27	194	72	2980	1670	616	398	109
24	51	24	15	28	30	191	68	2920	1640	594	392	100
25	50	25	15	26	24	191	77	2870	1680	567	391	92
26	48	24	16	24	27	185	4780	2820	1690	571	380	92
27	48	23	15	22	32	146	10000	2870	1700	531	369	90
28	49	24	15	21	29	133	9380	3710	1690	511	364	79
29	48	24	16	20	---	230	8180	2940	1680	447	355	55
30	45	23	16	20	---	227	6630	2810	1710	420	346	43
31	42	---	17	22	---	165	---	2740	---	409	343	---
TOTAL	1740	818	537	619	905	8188	43737	151860	58170	38163	19450	3741
MEAN	56.1	27.3	17.3	20.0	32.3	264	1458	4899	1939	1231	627	125
MAX	183	49	24	28	166	1960	10000	15000	2750	1670	1300	340
MIN	34	17	14	15	18	21	68	2140	1640	409	343	43
AC-FT	3450	1620	1070	1230	1800	16240	86750	301200	115400	75700	38580	7420
CAL YR 1989	TOTAL	110144.3	MEAN	302	MAX	5790	MIN	6.4	AC-FT	218500		
WTR YR 1990	TOTAL	327928	MEAN	898	MAX	15000	MIN	14	AC-FT	650400		

BRAZOS RIVER BASIN

287

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.--40 years, 81.1 ft³/s (2.42 in/yr), 58,760 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 11	1730	9,340	18.19	May 3	0600	*22,200	*29.15
Apr. 26	2300	20,300	27.84	May 12	0800	19,700	27.37

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	.00	.00	.89	15	3.0	115	135	71	8.6	4.1	.35		
2	.00	.00	.00	.83	39	2.6	500	253	73	8.2	3.7	.34		
3	.00	.00	.00	.81	13	2.7	66	6710	61	7.7	4.6	.31		
4	.00	.00	.00	.81	7.3	2.4	41	621	42	7.2	5.2	.28		
5	.00	.00	.00	.81	4.0	2.4	34	292	39	6.6	11	.27		
6	.00	.00	.00	.83	2.9	2.4	232	206	41	6.6	6.7	.25		
7	.00	.00	.00	.94	2.2	349	47	160	34	6.5	6.1	.25		
8	.00	.00	.00	1.1	1.7	168	35	136	32	6.2	7.2	.25		
9	.00	.00	.00	1.1	1.5	38	33	129	30	5.8	5.2	.75		
10	.00	.00	.00	1.1	1.4	19	32	122	28	5.4	2.9	.60		
11	.00	.00	.00	.98	1.4	2370	27	120	27	5.0	2.1	.39		
12	.00	.00	.00	1.0	1.2	233	23	3630	26	4.9	1.9	.37		
13	.00	.00	.00	1.1	1.1	87	21	249	25	4.6	1.4	.44		
14	.00	.00	.00	.99	1.1	382	91	113	24	4.2	1.2	.45		
15	.00	.00	.00	.93	1.1	103	53	93.0	23	5.5	1.2	.45		
16	.00	.00	.00	1.1	1.1	49	45	81	22	21	1.2	.65		
17	.00	.00	.00	1.2	1.1	35	35	82	20	17	1.0	1.3		
18	.00	.00	.00	3.3	.99	28	66	155	19	16	.99	.90		
19	.00	.00	.00	4.8	1.0	23	45	79	18	13	.87	.66		
20	.00	.00	.00	2.7	1.1	18	35	65	16	9.5	.76	.55		
21	.00	.00	.00	1.9	2.4	16	29	59	15	15	.70	.83		
22	.00	.00	.00	1.3	2.4	15	26	51	14	10	.61	.99		
23	.00	.00	.05	1.2	2.3	14	23	47	14	7.7	.94	3.3		
24	.00	.00	.12	1.1	2.3	13	20	44	13	6.9	1.1	3.8		
25	.00	.00	.27	1.1	2.7	12	19	42	13	6.9	.89	2.2		
26	.00	.00	.62	.94	2.4	12	9250	39	12	7.7	.74	1.6		
27	.00	.00	.74	.81	2.2	12	2650	37	11	5.6	.65	1.2		
28	.00	.00	.74	.81	3.0	13	534	323	10	4.8	.55	.98		
29	.00	.00	.92	.84	---	22	291	65	9.7	4.1	.48	.83		
30	.00	.00	.99	.85	---	27	200	45	9.0	3.9	.41	.72		
31	.00	---	.97	1.1	---	21	---	40	---	4.1	.37	---		
TOTAL	0.00	0.00	5.42	39.27	118.89	4094.5	14618	14223.0	791.7	246.2	76.76	26.26		
MEAN	.000	.000	.17	1.27	4.25	132	487	459	26.4	7.94	2.48	.88		
MAX	.00	.00	.99	4.8	39	2370	9250	6710	73	21	11	3.8		
MIN	.00	.00	.00	.81	.99	2.4	19	37	9.0	3.9	.37	.25		
AC-FT	.00	.00	11	78	236	8120	28990	28210	1570	488	152	52		
CFSM	.00	.00	.00	.00	.01	.29	1.07	1.01	.06	.02	.01	.00		
IN.	.00	.00	.00	.00	.01	.33	1.20	1.16	.06	.02	.01	.00		
CAL YR 1989	TOTAL	20027.34	MEAN	54.9	MAX	4970	MIN	.00	AC-FT	39720	CFSM	.12	IN.	1.64
WTR YR 1990	TOTAL	34240.00	MEAN	93.8	MAX	9250	MIN	.00	AC-FT	67920	CFSM	.21	IN.	2.80

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.

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 contents, 646,100 acre-ft May 14 at 0600 hours (elevation, 608.56 ft); minimum, 421,300 acre-ft Jan. 14 (elevation, 592.31 ft).

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

592.0	417,600	600.0	520,500	606.0	606,100
595.0	454,500	602.0	548,100	608.0	637,200
598.0	493,600	604.0	576,500	609.0	653,100

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	442700	436700	430400	423100	422900	423300	446700	515500	589000	464500	452400	451900
2	442700	436000	430300	422900	423400	423100	448700	514000	584400	464000	452800	452600
3	442600	435700	429900	423000	423700	423000	448900	546200	578100	463600	452900	452600
4	442400	435300	429600	422800	423700	422800	449100	561800	575100	463100	453100	452500
5	442100	435300	429300	422800	423600	422700	450000	575500	570000	462400	453500	452400
6	442200	435200	429300	422800	423600	423000	450500	583600	564600	462100	453300	452100
7	442100	435200	429600	422700	423300	429800	449900	598800	559700	461300	452900	451900
8	441700	435100	429200	422500	423300	431800	449200	610500	554000	460800	452500	451900
9	441400	434700	428600	422500	423300	432700	449100	618200	548800	460400	452400	455900
10	441000	434500	428800	422300	423100	433100	448600	622700	548100	459900	452800	455700
11	440700	434200	428700	422200	423000	437700	447900	627600	541700	459200	453700	455000
12	440400	434000	427900	422100	422900	441000	447400	638800	534900	459100	454800	454400
13	440100	433700	427600	421600	422800	444000	447700	645600	528600	458400	455800	453800
14	440000	433600	427500	421700	423000	449900	448600	645000	522000	457600	456200	453100
15	439800	433300	427500	421600	422900	452300	449000	642900	515500	457500	456200	452300
16	439600	433000	427000	421800	422700	452300	449100	641300	508600	457500	455900	452800
17	439400	432600	426500	422100	422500	449900	448900	638100	502500	457300	456100	453300
18	438900	432400	426400	422800	422700	446300	448200	635800	496100	457200	455600	452900
19	438100	432200	426200	422900	422700	443400	447900	632800	489300	456700	454500	452800
20	437400	432100	425900	422800	422500	442600	447900	630400	482900	456400	454000	452400
21	437000	432000	425800	422800	423300	442400	448000	627400	476900	455700	453500	452100
22	436400	432400	425400	422700	423300	442900	447700	623800	473900	454900	453100	451600
23	436400	432000	424800	422500	423100	443400	447400	619900	472300	454800	452500	450500
24	436400	431500	424500	422500	423000	443700	447200	616000	470700	454200	451900	449900
25	436300	431500	424200	422300	422800	443800	447200	611700	468800	453500	451500	449500
26	436200	431400	424000	421800	422800	443800	446800	607600	467200	453100	451800	449200
27	435900	431400	423900	422200	422800	444100	446300	604700	466000	452900	451800	449000
28	435800	431300	423600	422300	423500	444500	444400	603500	465500	452900	451800	448900
29	435600	430800	423700	421800	---	445200	504500	600900	465000	452600	451900	448500
30	437200	430500	423700	421800	---	445700	511700	597300	464800	452300	451900	448200
31	436700	---	423400	422100	---	446000	---	593000	---	452100	451900	---
MAX	442700	436700	430400	423100	423700	452300	511700	645600	589000	464500	456200	455900
MIN	435600	430500	423400	421600	422500	422700	446700	514000	464800	452100	451500	448200
(+)	593.57	593.07	592.48	592.37	592.49	594.32	599.35	605.13	595.80	594.81	594.79	594.50
(Φ)	-6200	-6200	-7100	-1300	+1400	+22500	+65700	+81300	-128200	-12700	-200	-3700

CAL YR 1989 MAX 511500 MIN 369900 (Φ) +52100
WTR YR 1990 MAX 645600 MIN 421600 (Φ) +5300

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

BRAZOS RIVER BASIN

289

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 August 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 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	38	12	71	54	1.6	25	4490	5260	1450	120	109
2	40	37	21	55	51	1.5	149	4600	5250	1440	115	112
3	52	39	23	44	50	1.5	321	2690	5240	1440	118	110
4	47	36	18	31	50	2.8	305	56	5240	1440	116	104
5	48	40	15	13	50	2.0	288	49	5220	1440	114	107
6	56	36	6.0	8.7	51	.22	352	1750	5210	1450	284	109
7	58	37	4.1	7.7	52	.01	531	4480	5200	1450	379	104
8	61	33	4.8	9.3	51	.35	531	4780	5190	1450	385	107
9	60	40	7.3	7.5	51	5.6	523	5020	4900	1450	384	130
10	55	47	7.7	6.7	40	8.3	515	5020	1890	1450	386	194
11	54	46	6.1	5.4	20	11	515	5030	5220	1440	382	335
12	53	53	8.4	5.7	13	12	353	5040	5210	1440	383	333
13	60	47	5.2	6.5	4.0	12	280	5060	5190	1440	581	331
14	50	36	4.8	7.2	.65	38	288	5070	5160	1430	790	331
15	56	36	4.6	7.9	2.7	12	288	5070	5160	1440	935	330
16	49	45	6.2	4.1	4.3	344	288	5070	5140	1450	936	333
17	40	41	9.1	.06	6.2	1510	297	5070	5120	1440	942	331
18	44	16	8.8	.00	9.2	1710	297	5100	5100	1440	942	330
19	44	16	37	.02	11	1430	297	5150	5090	1440	940	338
20	46	21	79	11	11	363	297	5150	5080	1430	604	337
21	43	17	79	2.5	11	31	288	5170	4470	1410	401	332
22	44	17	59	4.7	10	19	305	5250	3030	1160	400	327
23	37	14	43	22	6.3	19	297	5240	2220	918	397	322
24	36	9.2	32	14	3.8	23	189	5240	2230	743	495	216
25	34	3.7	24	15	5.7	18	125	5230	2230	736	270	123
26	33	2.0	27	14	5.3	28	34	5220	2210	561	106	121
27	32	.21	31	5.9	1.2	25	883	5220	1810	435	102	124
28	38	.06	47	4.7	1.1	25	2360	5250	1440	431	103	125
29	34	.06	71	15	---	25	3200	5270	1440	429	102	123
30	44	4.1	69	50	---	24	4060	5270	1440	429	103	128
31	37	---	72	50	---	24	---	5270	---	213	101	---
TOTAL	1434	807.33	842.1	489.25	626.45	5726.88	18481	141375	122590	36315	12416	6456
MEAN	46.3	26.9	27.2	15.8	22.4	185	616	4560	4086	1171	401	215
MAX	61	53	79	71	54	1710	4060	5270	5260	1450	942	338
MIN	32	.06	4.1	.00	.65	.01	25	49	1440	213	101	104
AC-FT	2840	1600	1670	970	1240	11360	36660	280400	243200	72030	24630	12810
CAL YR 1989	TOTAL	117851.40	MEAN	323	MAX	3700	MIN	.00	AC-FT	233800		
WTR YR 1990	TOTAL	347559.01	MEAN	952	MAX	5270	MIN	.00	AC-FT	689400		

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.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. 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.--No estimated daily discharges. Records good. 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 at station.

AVERAGE DISCHARGE.--28 years, 124 ft³/s (89,840 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,000 ft³/s May 16, 1965 (gage height, 32.98 ft); 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 11	1500	12,600	12.96	May 12	1030	16,800	15.38
Apr. 2	0200	4,390	8.10	May 28	0600	8,150	10.34
Apr. 26	1730	15,800	14.83	June 1	1530	13,600	13.55
May 3	0730	*24,200	*19.71				

Minimum daily discharge, 6.4 ft³/s Nov. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	10	11	18	29	18	34	158	2650	27	107	9.9
2	12	17	11	19	52	13	1300	391	682	26	47	11
3	12	8.2	11	21	46	13	142	7940	285	25	42	16
4	11	6.4	11	23	27	13	80	859	497	24	34	12
5	11	8.9	13	23	20	13	62	442	270	22	53	11
6	13	9.3	13	23	16	13	261	333	178	25	52	11
7	12	9.9	14	22	14	250	120	272	144	23	52	12
8	12	9.9	16	21	15	161	69	237	122	21	41	10
9	12	10	18	22	15	50	59	211	109	21	35	316
10	13	11	18	21	13	31	56	182	96	18	30	155
11	14	12	16	21	12	3730	55	167	86	18	29	147
12	14	13	15	20	12	392	48	3960	79	18	25	121
13	12	12	15	19	12	113	46	447	72	18	23	88
14	12	13	16	21	13	314	104	248	66	14	16	60
15	13	18	19	23	13	142	135	203	61	19	16	46
16	14	15	19	23	13	58	74	181	56	64	14	35
17	13	12	16	23	11	41	59	188	50	50	14	41
18	14	12	15	23	11	35	50	210	46	48	14	33
19	15	12	17	23	11	30	49	222	43	40	12	32
20	20	11	18	24	9.9	27	49	182	41	38	12	39
21	10	11	21	21	22	27	49	172	39	38	11	33
22	9.9	8.7	16	18	22	27	47	142	34	34	12	31
23	9.9	7.9	15	18	14	27	43	126	33	33	13	25
24	9.9	9.3	16	18	14	26	41	122	33	35	11	26
25	8.5	9.9	19	16	15	24	39	116	33	25	7.5	32
26	7.9	10	20	16	15	24	6870	107	30	24	13	28
27	9.9	11	20	17	14	24	1640	95	30	24	12	22
28	10	10	18	15	17	25	436	2150	28	22	10	21
29	11	11	18	15	---	31	260	246	28	25	9.9	26
30	17	11	18	14	---	40	194	156	27	23	9.9	26
31	15	---	16	17	---	36	---	130	---	165	9.9	---
TOTAL	380.0	330.4	499	618	497.9	5768	12471	20595	5948	1007	787.2	1475.9
MEAN	12.3	11.0	16.1	19.9	17.8	186	416	664	198	32.5	25.4	49.2
MAX	20	18	21	24	52	3730	6870	7940	2650	165	107	316
MIN	7.9	6.4	11	14	9.9	13	34	95	27	14	7.5	9.9
AC-FT	754	655	990	1230	988	11440	24740	40850	11800	2000	1560	2930
CAL YR 1989	TOTAL	13379.8	MEAN	36.7	MAX	2020	MIN	6.4	AC-FT	26540		
WTR YR 1990	TOTAL	50377.4	MEAN	138	MAX	7940	MIN	6.4	AC-FT	99920		

BRAZOS RIVER BASIN

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08103800 LAMPASAS RIVER NEAR KEMPNER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March to June 1964, October 1980 to September 1982, October 1987 to August 1990 (discontinued). Biochemical analyses: October 1980 to September 1982, October 1987 to August 1990 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 02...	1140	27	2160	8.5	15.5	13	0.40	11.4	117	0.3	430	
DEC 20...	1027	14	2210	8.6	3.0	10	0.50	13.4	102	1.1	430	
FEB 08...	1020	14	1900	8.5	15.0	12	1.0	12.6	129	1.2	390	
MAY 16...	1115	195	603	8.4	25.5	12	3.5	10.5	133	0.4	260	
JUL 05...	0935	21	1600	8.3	27.5	5	3.0	7.9	103	1.7	340	
AUG 27...	0945	17	1970	8.3	26.5	8	2.8	8.4	108	0.5	380	
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 02...	150	100	43	260	5	10	280	26	520	0.20	6.0	
DEC 20...	170	100	44	280	6	10	270	29	530	0.30	2.8	
FEB 08...	150	91	40	230	5	10	240	28	440	0.30	2.9	
MAY 16...	51	65	24	25	0.7	3.4	210	33	47	<0.10	10	
JUL 05...	110	70	39	190	4	8.1	220	32	370	0.20	6.3	
AUG 27...	160	84	41	250	6	11	220	23	490	0.30	8.5	
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+N03 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 02...	1130	3	3	0	--	0.010	<0.100	0.010	0.29	0.30	0.220	
DEC 20...	1160	<1	<1	--	--	0.010	<0.100	0.030	0.17	0.20	0.170	
FEB 08...	986	6	6	0	0.180	0.020	0.200	0.030	0.17	0.20	0.170	
MAY 16...	337	12	12	0	--	<0.010	<0.100	<0.010	--	1.5	0.030	
JUL 05...	846	10	10	0	--	<0.010	<0.100	0.020	0.18	0.20	0.080	
AUG 27...	1040	5	1	4	--	<0.010	<0.100	0.020	--	<0.20	0.160	
DATE		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 02...	2.3	--	--	--	--	--	--	--	--	--	--	
DEC 20...	2.0	<1	75	<2	13	<20	<9	<30	26	<30		
FEB 08...	2.5	--	--	--	--	--	--	--	--	--	--	
MAY 16...	4.2	1	72	<0.5	<1.0	<5	<3	<10	<3	<10		
JUL 05...	3.1	--	--	--	--	--	--	--	--	--	--	
AUG 27...	3.6	2	78	<0.5	1.0	<5	<3	<10	7	<10		

BRAZOS RIVER BASIN

08103800 LAMPASAS RIVER NEAR KEMPNER, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 02...	--	--	--	--	--	--	--	--	--	--
DEC 20...	110	4	1.5	<30	<30	<1	<3.0	2100	<18	<9
FEB 08...	--	--	--	--	--	--	--	--	--	--
MAY 16...	19	3	<0.1	<10	<10	<1	<1.0	2100	<6	4
JUL 05...	--	--	--	--	--	--	--	--	--	--
AUG 27...	110	4	<0.1	<10	<10	<1	1.0	2100	<6	4

BRAZOS RIVER BASIN

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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.--27 years, 9.87 ft³/s (4.03 in/yr), 7,150 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 3	0315	*1,000	*5.21	No other peak greater than base discharge.			

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.5	.00		
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.22	.00		
3	.00	.00	.00	.00	.00	.00	.00	.89	.00	.00	.00	.00		
4	.00	.00	.00	.00	.00	.00	.00	4.0	.00	.00	.00	.00		
5	.00	.00	.00	.00	.00	.00	.00	1.4	.00	.00	.00	.00		
6	.00	.00	.00	.00	.00	.00	.00	.84	.00	.00	.00	.00		
7	.00	.00	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00		
8	.00	.00	.00	.00	.00	.00	.00	.49	.00	.00	.00	.00		
9	.00	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	17		
10	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	3.9		
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27		
12	.00	.00	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00		
14	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00		
15	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00	.00	.00		
16	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00		
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
26	.00	.00	.00	.00	.00	.00	.65	.00	.00	.00	.00	.00		
27	.00	.00	.00	.00	.00	.00	.90	.00	.00	.00	.00	.00		
28	.00	.00	.00	.00	.00	.00	.27	.22	.00	.00	.00	.00		
29	.00	.00	.00	.00	---	.00	.04	1.5	.00	.00	.00	.00		
30	.00	.00	.00	.00	---	.00	.00	.60	.00	.00	.00	.00		
31	.00	---	.00	.00	---	.00	---	.28	---	8.8	.00	---		
TOTAL	0.00	0.00	0.00	0.00	0.00	0.36	1.86	121.23	0.00	8.80	7.72	21.17		
MEAN	.000	.000	.000	.000	.000	.012	.062	3.91	.000	.28	.25	.71		
MAX	.00	.00	.00	.00	.00	.25	.90	89	.00	8.8	7.5	17		
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
AC-FT	.00	.00	.00	.00	.00	.7	3.7	240	.00	17	15	42		
CFSM	.00	.00	.00	.00	.00	.00	.00	.12	.00	.01	.01	.02		
IN.	.00	.00	.00	.00	.00	.00	.00	.14	.00	.01	.01	.02		
CAL YR 1989	TOTAL	1050.57	MEAN	2.88	MAX	376	MIN	.00	AC-FT	2080	CFSM	.09	IN.	1.17
WTR YR 1990	TOTAL	161.14	MEAN	.44	MAX	89	MIN	.00	AC-FT	320	CFSM	.01	IN.	.18

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 1989 TO SEPTEMBER 1990

		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, FECAI, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)
MAY 07...	1100	0.52	481	8.1	19.0	0.20	7.7	86	120	340	190
31...	0930	0.31	430	8.1	27.0	1.0	7.4	96	460	540	170
AUG 01...	1155	3.1	216	7.7	26.5	23	8.0	102	3600	8000	92
SEP 10...	1050	2.6	199	8.1	24.0	13	7.3	89	2900	K490	90
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 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)
MAY 07...	23	47	18	23	0.7	2.0	170	18	33	0.40	8.8
31...	7	43	16	20	0.7	2.3	167	17	29	0.30	9.2
AUG 01...	11	24	7.6	6.7	0.3	2.6	81	9.6	9.1	0.20	7.3
SEP 10...	8	24	7.2	5.5	0.3	2.4	82	6.8	6.6	0.20	7.2
DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (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 TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
MAY 07...	254	253	--	<0.010	<0.100	<0.010	<0.010	--	0.40	0.010	<0.010
31...	237	238	--	<0.010	<0.100	<0.010	<0.010	--	0.20	0.010	<0.010
AUG 01...	118	118	0.390	0.010	0.400	0.020	0.010	0.48	0.50	0.040	0.010
SEP 10...	112	111	--	<0.010	0.200	<0.010	<0.010	--	0.40	0.040	0.130
DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	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)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)
MAY 07...	<0.010	--	5	0.01	46	<10	<1	40	<0.5	<1.0	<1
31...	<0.010	--	4	0.00	56	<10	<1	40	<0.5	<1.0	<1
AUG 01...	<0.010	--	18	0.15	91	80	<1	24	<0.5	<1.0	<1
SEP 10...	0.010	0.03	9	0.06	86	80	<1	22	<0.5	<1.0	<1
DATE	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)	SILVER, DIS-SOLVED (UG/L AS AG)
MAY 07...	<3	1	<3	<1	9	1	<0.1	<10	<1	<1	<1.0
31...	<3	1	<3	<1	10	2	<0.1	<10	1	<1	<1.0
AUG 01...	<3	1	37	3	5	3	<0.1	<10	<1	<1	<1.0
SEP 10...	<3	1	50	<1	<4	3	<0.1	<10	1	<1	<1.0
DATE	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)
MAY 07...	1400	<6	<3	1.2	<0.4	3.4	0.7	2.6	0.5	0.12	0.63
31...	1300	<6	<3	--	--	--	--	--	--	--	--
AUG 01...	700	<6	<3	<0.4	0.7	3.6	0.8	2.7	0.8	0.08	0.22
SEP 10...	660	<6	<3	--	--	--	--	--	--	--	--

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 contents, 274,900 acre-ft June 5 at 1200 hours (elevation, 627.80 ft); minimum, 206,800 acre-ft Jan. 13 (elevation, 617.32 ft).

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

617.0	205,000	623.0	242,200	626.0	262,300
619.0	216,900	624.0	248,800	627.0	269,300
621.0	229,300	625.0	255,500	628.0	276,400

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	212500	210400	208800	207000	208000	208700	219300	243200	271300	247100	238000	234700
2	212400	210200	208700	207000	208000	208700	220500	243600	274100	246500	238200	234500
3	212300	210200	208700	207000	208100	208600	221200	259900	274700	246000	238100	234400
4	212200	210000	208600	207000	208100	208600	221500	262900	274600	245300	238000	234300
5	212100	210000	208600	207000	208100	208600	221600	264100	274800	244700	238000	234200
6	212100	210000	208500	207000	208100	208700	222100	264800	274200	244200	237800	234000
7	212100	210000	208500	207000	208100	209100	222400	265500	273600	243600	237700	233900
8	212000	210000	208400	207000	208300	209700	222600	266000	272800	243000	237600	233800
9	211900	210000	208300	207000	208300	210000	222700	266000	272100	242400	237600	236200
10	211800	209900	208300	207000	208300	210200	222800	265700	271300	241900	237600	237800
11	211600	209900	208100	207000	208300	212000	222800	265700	270400	241600	237500	238000
12	211500	209700	208000	206900	208200	216500	222800	270800	269600	241300	237400	238200
13	211500	209700	207900	206800	208200	217000	222900	272100	268700	240800	237300	238300
14	211400	209700	207800	206800	208300	218400	223300	272300	267800	240400	237200	238400
15	211400	209600	207700	206900	208300	219000	223400	272300	266900	240200	237100	238400
16	211200	209400	207600	207100	208100	219200	223700	272000	265800	240100	236900	238800
17	210900	209300	207600	207100	208100	219200	223700	271700	265000	240100	236800	238800
18	210900	209200	207500	207300	208200	219200	223700	271600	264100	239900	236700	238500
19	210700	209200	207400	207600	208100	219100	223900	271300	263100	239800	236500	238200
20	210500	209100	207400	207600	208100	219100	223900	271100	262200	239600	236400	237800
21	210300	209200	207300	207600	208600	219100	223900	270800	260800	239500	236200	237600
22	210300	209400	207100	207600	208600	219100	223900	270400	259200	239300	236100	237500
23	210200	209300	207000	207600	208500	219100	223900	269900	257500	239500	236000	237200
24	210200	209300	207000	207600	208500	219000	224600	269400	255900	239400	235800	237100
25	210100	209200	207000	207500	208400	219000	224700	268900	254300	239100	235600	236900
26	210100	209200	206900	207400	208400	218900	229600	268300	252700	238900	235500	236900
27	210000	209200	206900	207400	208400	218900	240200	267800	251100	238700	235300	236800
28	210000	209000	206900	207500	208700	219000	241600	270600	249300	238400	235200	236700
29	210000	208900	207000	207400	---	219200	242300	271100	248200	238200	235100	236700
30	210600	208900	207000	207400	---	219200	242800	270900	247700	238000	234900	236500
31	210500	---	207000	207500	---	219200	---	270400	---	238000	234700	---
MAX	212500	210400	208800	207600	208700	219200	242800	272300	274800	247100	238200	238800
MIN	210000	208900	206900	206800	208000	208600	219300	243200	247700	238000	234700	233800
(↑)	617.93	617.66	617.35	617.43	617.64	619.38	623.10	627.16	623.84	622.36	621.85	622.13
(Φ)	-2100	-1600	-1900	+500	+1200	+10500	+23600	+27600	-22700	-9700	-3300	+1800
CAL YR 1989	MAX	221800	MIN	169000	(Φ)	+37800						
WTR YR 1990	MAX	274800	MIN	206800	(Φ)	+23900						

(↑) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.

BRAZOS RIVER BASIN

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 1989 TO SEPTEMBER 1990

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 CAC03)
JAN											
08...	1350	1.00	616	8.5	10.0	3.70	9.7	88	<1	<1	190
08...	1352	10.0	616	8.5	10.0	--	9.7	88	--	--	--
08...	1354	20.0	616	8.5	9.5	--	9.7	87	--	--	--
08...	1356	30.0	616	8.5	9.5	--	9.7	87	--	--	--
08...	1358	40.0	616	8.5	9.5	--	9.7	87	--	--	--
08...	1400	50.0	616	8.5	9.5	--	9.7	87	--	--	--
08...	1402	60.0	622	8.4	9.0	--	9.3	82	--	--	--
08...	1404	70.0	630	8.4	8.5	--	9.1	80	--	--	--
08...	1406	80.0	640	8.4	8.0	--	9.0	78	--	--	--
08...	1408	90.0	770	8.2	7.5	--	8.5	73	--	--	--
08...	1410	100	787	8.2	7.5	--	8.4	72	--	--	--
08...	1412	115	787	8.1	7.5	--	8.3	71	--	--	220
APR											
17...	0940	1.00	659	8.4	18.0	3.90	10.4	112	K1	<1	190
17...	0942	10.0	659	8.4	17.5	--	10.3	110	--	--	--
17...	0944	20.0	659	8.4	17.0	--	10.6	112	--	--	--
17...	0946	30.0	659	8.4	16.5	--	10.4	109	--	--	--
17...	0948	40.0	660	8.4	16.0	--	10.1	104	--	--	--
17...	0950	50.0	663	8.3	14.5	--	9.2	92	--	--	--
17...	0952	60.0	663	8.2	13.5	--	8.6	84	--	--	--
17...	0954	70.0	663	7.9	11.5	--	5.9	55	--	--	--
17...	0956	80.0	663	7.8	11.0	--	5.2	48	--	--	--
17...	0958	90.0	663	7.8	11.0	--	4.9	45	--	--	--
17...	1000	100	659	7.8	11.0	--	4.7	44	--	--	--
17...	1002	114	659	7.8	11.0	--	4.7	44	--	--	200
JUL											
16...	0920	1.00	593	8.2	27.0	0.30	6.3	81	<1	K1	180
16...	0922	10.0	593	8.2	27.0	--	5.7	73	--	--	--
16...	0924	20.0	593	8.2	27.0	--	6.6	85	--	--	--
16...	0926	30.0	593	8.2	27.0	--	5.6	72	--	--	--
16...	0928	35.0	593	8.1	27.0	--	5.0	64	--	--	--
16...	0930	40.0	583	7.5	24.5	--	0.1	1	--	--	--
16...	0932	45.0	583	7.5	22.5	--	0.2	2	--	--	--
16...	0934	50.0	587	7.5	20.5	--	0.6	7	--	--	--
16...	0936	55.0	592	7.5	19.5	--	1.0	11	--	--	--
16...	0938	60.0	605	7.6	18.5	--	1.0	11	--	--	--
16...	0940	65.0	613	7.6	18.5	--	1.4	15	--	--	--
16...	0942	70.0	633	7.6	17.5	--	1.0	11	--	--	--
16...	0944	80.0	643	7.5	16.5	--	0	0	--	--	--
16...	0946	90.0	658	7.5	14.5	--	0	0	--	--	--
16...	0948	100	673	7.5	14.5	--	0	0	--	--	--
16...	0950	114	680	7.4	14.5	--	0	0	--	--	210

BRAZOS RIVER BASIN

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08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310129097315901 - STILLHOUSE HOLLOW LAKE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (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 CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
JAN										
08...	38	40	22	52	2	3.9	150	24	96	0.30
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	56	46	25	73	2	3.1	160	25	140	0.30
APR										
17...	44	40	23	54	2	4.1	150	26	110	0.20
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	45	42	23	53	2	4.2	150	27	100	0.20
JUL										
16...	43	40	20	47	2	4.1	140	23	86	0.20
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	41	45	23	52	2	3.9	170	21	100	0.20

BRAZOS RIVER BASIN

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310129097315901 - STILLHOUSE HOLLOW LAKE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
08...	7.0	337	<0.010	<0.100	0.020	0.48	0.50	0.020	5	<1
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	<0.010	<0.100	0.020	0.28	0.30	0.010	20	<10
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	7.0	417	<0.010	<0.100	0.100	0.20	0.30	0.010	7	8
APR										
17...	5.8	354	<0.010	<0.100	<0.010	--	0.30	<0.010	15	<1
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	<0.010	<0.100	<0.010	--	0.30	<0.010	20	<10
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	6.3	354	<0.010	0.200	<0.010	--	0.30	<0.010	12	17
JUL										
16...	6.1	310	<0.010	<0.100	0.020	0.38	0.40	<0.010	5	1
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	<0.010	<0.100	<0.010	--	0.30	<0.010	<10	<10
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	<0.010	0.100	<0.010	--	0.20	<0.010	10	10
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	9.5	355	<0.010	<0.100	0.420	0.28	0.70	0.040	450	560

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310033097333001 - STILLHOUSE HOLLOW LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
08...	1450	1.00	625	8.5	10.0	9.8	89
08...	1452	10.0	625	8.5	10.0	9.7	88
08...	1454	20.0	625	8.5	10.0	9.7	88
08...	1456	30.0	625	8.5	9.5	9.7	87
08...	1458	40.0	625	8.5	9.5	9.7	87
08...	1500	50.0	625	8.4	9.0	9.2	82
08...	1502	60.0	625	8.4	8.5	9.2	81
08...	1504	70.0	635	8.4	8.5	9.2	81
08...	1506	80.0	666	8.3	8.0	9.2	80
08...	1508	90.0	737	8.3	7.5	9.0	77
08...	1510	107	790	8.1	7.5	8.4	72
APR							
17...	1105	1.00	659	8.4	18.0	9.4	101
17...	1107	10.0	659	8.4	17.5	9.4	100
17...	1109	20.0	659	8.4	17.5	9.4	100
17...	1111	30.0	660	8.4	17.0	9.4	99
17...	1113	40.0	661	8.4	16.0	9.1	94
17...	1115	50.0	663	8.2	14.0	7.3	72
17...	1117	60.0	663	8.1	13.0	6.7	65
17...	1119	70.0	666	7.9	12.0	4.6	44
17...	1121	80.0	665	7.8	11.5	4.0	37
17...	1123	90.0	665	7.8	11.0	3.9	36
17...	1125	100	665	7.8	11.0	3.8	35
17...	1127	110	666	7.8	11.0	3.7	34
JUL							
16...	1105	1.00	590	8.2	27.0	5.8	74
16...	1107	10.0	590	8.2	27.0	5.8	74
16...	1109	20.0	590	8.2	27.0	5.9	75
16...	1111	30.0	591	8.2	27.0	5.8	74
16...	1113	40.0	585	7.6	25.5	1.0	12
16...	1115	50.0	580	7.5	21.0	0	0
16...	1117	60.0	590	7.5	19.0	0	0
16...	1119	70.0	610	7.5	17.5	0	0
16...	1121	80.0	627	7.5	16.5	0	0
16...	1123	90.0	656	7.5	15.5	0	0
16...	1125	100	671	7.5	15.0	0	0
16...	1127	110	678	7.4	14.5	0	0

310128097353601 - STILLHOUSE HOLLOW LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN											
08...	1540	1.00	625	8.5	9.5	3.00	10.0	90	<1	K1	190
08...	1542	10.0	625	8.5	9.5	--	10.0	90	--	--	--
08...	1544	20.0	625	8.5	9.0	--	10.0	89	--	--	--
08...	1546	30.0	625	8.5	9.0	--	9.9	88	--	--	--
08...	1548	40.0	630	8.5	9.0	--	9.8	87	--	--	--
08...	1550	50.0	630	8.4	9.0	--	9.6	85	--	--	--
08...	1552	60.0	672	8.4	8.0	--	9.3	80	--	--	--
08...	1554	70.0	725	8.3	7.5	--	9.3	80	--	--	--
08...	1556	85.0	814	8.1	7.5	--	8.2	70	--	--	220
APR											
17...	1210	1.00	662	8.4	20.0	2.00	10.0	112	K12	K2	200
17...	1212	10.0	662	8.4	19.0	--	10.0	110	--	--	--
17...	1214	20.0	662	8.4	18.0	--	9.8	106	--	--	--
17...	1216	30.0	664	8.3	16.5	--	9.1	95	--	--	--
17...	1218	40.0	666	8.2	15.0	--	8.2	83	--	--	--
17...	1220	50.0	669	8.0	14.0	--	5.8	57	--	--	--
17...	1222	60.0	671	7.8	13.0	--	3.8	37	--	--	--
17...	1224	70.0	671	7.7	12.0	--	2.1	20	--	--	--
17...	1226	80.0	671	7.7	12.0	--	2.0	19	--	--	--
17...	1228	87.0	671	7.7	12.0	--	1.9	18	--	--	200
JUL											
16...	1205	1.00	581	8.1	27.0	1.40	5.7	73	<1	<1	180
16...	1207	10.0	581	8.1	26.5	--	5.7	72	--	--	--
16...	1209	20.0	582	8.1	26.5	--	6.0	76	--	--	--
16...	1211	30.0	582	8.1	26.5	--	5.7	72	--	--	--
16...	1213	40.0	583	8.1	26.0	--	5.3	67	--	--	--
16...	1215	45.0	574	7.8	25.5	--	3.6	45	--	--	--
16...	1217	50.0	551	7.4	20.5	--	0	0	--	--	--
16...	1219	60.0	558	7.4	20.0	--	0	0	--	--	--
16...	1221	70.0	584	7.4	18.0	--	0	0	--	--	--
16...	1223	80.0	621	7.4	17.0	--	0	0	--	--	--
16...	1225	88.0	623	7.4	16.5	--	0	0	--	--	190

BRAZOS RIVER BASIN

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310128097353601 - STILLHOUSE HOLLOW LAKE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (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- LITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN											
08...	40	40	22	52	2	3.9	150	25	98	0.30	6.8
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	56	47	25	77	2	4.6	160	25	150	0.30	7.0
APR											
17...	48	41	23	55	2	4.3	150	16	110	0.10	5.7
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	45	43	23	54	2	4.3	160	15	110	<0.10	7.3
JUL											
16...	35	40	19	43	1	4.0	140	22	84	0.20	6.2
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	26	43	20	46	1	3.8	160	16	92	0.10	9.5
DATE	SOLIDS, SUM OF CONSTIT- UENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	
JAN											
08...	339	--	<0.010	<0.100	0.030	0.37	0.40	<0.010	4	<1	
08...	--	--	--	--	--	--	--	--	--	--	
08...	--	--	--	--	--	--	--	--	--	--	
08...	--	--	<0.010	<0.100	0.030	0.27	0.30	0.020	10	<10	
08...	--	--	--	--	--	--	--	--	--	--	
08...	--	--	--	--	--	--	--	--	--	--	
08...	434	--	<0.010	<0.100	0.160	0.34	0.50	0.030	7	10	
APR											
17...	344	--	<0.010	<0.100	<0.010	--	0.30	<0.010	12	<1	
17...	--	--	--	--	--	--	--	--	--	--	
17...	--	--	--	--	--	--	--	--	--	--	
17...	--	--	<0.010	<0.100	<0.010	--	0.40	0.010	40	<10	
17...	--	--	--	--	--	--	--	--	--	--	
17...	--	--	--	--	--	--	--	--	--	--	
17...	--	--	--	--	--	--	--	--	--	--	
17...	351	0.190	0.010	0.200	0.020	0.38	0.40	0.010	17	140	
JUL											
16...	304	--	0.020	<0.100	0.010	0.29	0.30	0.010	3	2	
16...	--	--	--	--	--	--	--	--	--	--	
16...	--	--	--	--	--	--	--	--	--	--	
16...	--	--	<0.010	<0.100	0.020	0.18	0.20	<0.010	<10	20	
16...	--	--	<0.010	<0.100	0.300	0.20	0.50	0.020	150	240	
16...	--	--	--	--	--	--	--	--	--	--	
16...	--	--	--	--	--	--	--	--	--	--	
16...	330	--	<0.010	<0.100	0.560	0.34	0.90	0.040	490	400	

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310130097371701 - STILLHOUSE HOLLOW LAKE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
08...	1640	1.00	636	8.5	9.0	10.3	91
08...	1642	10.0	636	8.5	9.0	10.1	90
08...	1644	20.0	636	8.5	9.0	10.1	90
08...	1646	30.0	636	8.5	9.0	10.1	90
08...	1648	40.0	646	8.4	8.5	9.8	86
08...	1650	50.0	693	8.3	8.0	9.5	82
08...	1652	60.0	730	8.3	8.0	9.5	82
08...	1654	71.0	730	8.2	8.0	9.1	79
APR							
17...	1315	1.00	665	8.4	19.5	9.0	100
17...	1317	10.0	665	8.4	19.5	9.0	100
17...	1319	20.0	665	8.4	18.0	9.0	97
17...	1321	30.0	665	8.3	17.0	8.2	87
17...	1323	40.0	668	8.1	15.5	6.0	61
17...	1325	50.0	671	7.9	14.5	4.3	43
17...	1327	60.0	674	7.7	13.0	1.7	16
17...	1329	72.0	674	7.7	12.5	3.6	34
JUL							
16...	1300	1.00	567	8.0	27.0	5.0	64
16...	1302	10.0	567	8.0	27.0	5.2	67
16...	1304	20.0	567	8.0	27.0	5.3	68
16...	1306	30.0	565	8.0	27.0	5.2	67
16...	1308	40.0	565	7.9	26.5	4.5	57
16...	1310	50.0	539	7.4	21.5	0	0
16...	1312	60.0	574	7.4	19.0	0	0
16...	1314	73.0	597	7.4	18.0	0	0

310037097383201 - STILLHOUSE HOLLOW LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRAN- SPAR- 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)
JAN											
08...	1700	1.00	690	8.5	9.0	1.40	10.5	93	<1	<1	210
08...	1702	10.0	690	8.5	9.0	--	10.5	93	--	--	--
08...	1704	20.0	690	8.5	8.5	--	10.4	91	--	--	--
08...	1706	35.0	1160	8.0	8.5	--	8.6	75	--	--	260
APR											
17...	1350	1.00	630	8.2	20.0	0.90	8.6	96	K13	K3	190
17...	1352	10.0	630	8.2	19.5	--	8.4	93	--	--	--
17...	1354	20.0	660	8.0	17.0	--	6.6	70	--	--	--
17...	1356	30.0	661	7.9	16.5	--	3.2	33	--	--	--
17...	1358	36.0	663	7.6	15.5	--	1.2	12	--	--	200
JUL											
16...	1345	1.00	557	7.9	27.0	0.50	5.0	64	K7	K11	190
16...	1347	10.0	557	7.9	27.0	--	5.1	65	--	--	--
16...	1349	20.0	557	7.9	27.0	--	5.2	67	--	--	--
16...	1351	30.0	557	7.9	27.0	--	5.3	68	--	--	--
16...	1353	37.0	557	7.9	27.0	--	5.0	64	--	--	190
JAN											
08...	50	43	24	62	2	4.0	160	25	110	0.30	6.6
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	75	55	29	110	3	5.0	180	26	210	0.20	6.1
APR											
17...	40	43	19	50	2	4.6	150	23	100	0.10	6.9
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	44	44	21	54	2	4.4	150	14	110	<0.10	7.2
JUL											
16...	30	45	18	35	1	4.0	160	21	68	0.20	8.1
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	36	45	18	35	1	4.0	150	21	67	0.20	7.9

BRAZOS RIVER BASIN

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310037097383201 - STILLHOUSE HOLLOW LAKE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
08...	368	--	<0.010	<0.100	0.020	0.68	0.70	0.010	8	<1
08...	--	--	<0.010	<0.100	0.020	0.18	0.20	0.010	10	<10
08...	--	--	--	--	--	--	--	--	--	--
08...	550	--	<0.010	<0.100	0.200	0.40	0.60	0.020	7	12
APR										
17...	334	0.080	0.020	0.100	0.020	0.38	0.40	0.030	6	<1
17...	--	--	--	--	--	--	--	--	--	--
17...	--	0.070	0.030	0.100	0.040	0.36	0.40	0.020	<10	<10
17...	--	--	--	--	--	--	--	--	--	--
17...	346	0.170	0.030	0.200	0.100	0.40	0.50	0.020	11	72
JUL										
16...	293	--	<0.010	<0.100	0.020	0.58	0.60	0.030	6	2
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	<0.010	<0.100	0.020	0.38	0.40	0.020	<10	<10
16...	--	--	--	--	--	--	--	--	--	--
16...	289	--	<0.010	<0.100	0.020	0.68	0.70	0.030	<3	1

08104050 STILLHOUSE LAKE NEAR BELTON, TX—Continued

Stillhouse Hollow Lake AC (310129097315901)

Phytoplankton Analyses September 1989 to October 1990

Date	1-08-90
Time	1351

TOTAL CELLS/mL	1,527
NUMBER OF SPECIES	21
DEPTH COLLECTED (ft.)	6.0

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	54
Order Pennales	
<i>Fragilaria crotonensis</i>	14
CHLOROPHYTA (green algae)	
<i>Chlorella ellipsoidea</i>	40
<i>Chlorococcum humicola</i>	40
<i>Chodatella subsalsa</i>	14
<i>Elakatothrix viridis</i>	27
<i>Oocystis pusilla</i>	54
<i>Oocystis</i> sp.	14
<i>Scenedesmus abundans</i>	54
<i>Scenedesmus bijuga</i>	27
<i>Tetraedron caudatum</i> var. <i>longispinum</i>	14
<i>Tetraedron minimum</i>	40
CHRYSTOPHYTA (golden-brown algae)	
<i>Kephyrion</i> sp.	40
<i>Mallomonas</i> sp.	14
Unknown flagellate	27
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	446
<i>Aphanothece saxicola</i>	68
<i>Chroococcus dispersus</i>	378
<i>Chroococcus multicoloratus</i>	54
<i>Dactylococcopsis fascicularis</i>	40
<i>Synechococcus</i> sp.	68

BRAZOS RIVER BASIN

08104050 STILLHOUSE LAKE NEAR BELTON, TX—Continued

Stillhouse Hollow Lake EC (310037097383201)

Phytoplankton Analyses September 1989 to October 1990

Date	1-08-90
Time	1701

TOTAL CELLS/mL	2,512
NUMBER OF SPECIES	16
DEPTH COLLECTED (ft.)	2.2

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	68
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	14
<i>Chlamydomonas</i> sp.	14
<i>Chlorococcum humicola</i>	122
<i>Scenedesmus bijuga</i>	40
<i>Tetraedron muticum</i>	14
<i>Tetrastrum staurogeniaeforme</i>	54
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	1,512
<i>Aphanothece saxicola</i>	108
<i>Chroococcus dispersus</i>	270
<i>Chroococcus multicoloratus</i>	108
<i>Dactylococcopsis fascicularis</i>	54
<i>Synechococcus</i> sp.	40
CHRYSTOPHYTA (golden-brown algae)	
<i>Dinobryon divergens</i>	27
<i>Kephyrion</i> sp.	40
Unknown flagellate	27

BRAZOS RIVER BASIN

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08104050 STILLHOUSE LAKE NEAR BELTON, TX—Continued

Stillhouse Hollow Lake AC (310129097315901)

Phytoplankton Analyses October 1989 to September 1990

Date	4-17-90
Time	0941

TOTAL CELLS/mL	4,965
NUMBER OF SPECIES	18
DEPTH COLLECTED (ft.)	6.4

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	145
<i>Cyclotella stelligera</i>	145
<i>Stephanodiscus astraea</i> var. <i>minutula</i>	436
Order Pennales	
<i>Synedra radians</i>	61
CHLOROPHYTA (green algae)	
<i>Chlamydomonas</i> sp.	121
<i>Chlorococcum humicola</i>	182
<i>Crucigenia tetrapedia</i>	242
<i>Scenedesmus abundans</i>	121
<i>Scenedesmus bijuga</i>	484
<i>Sphaerocystis Schroeteri</i>	242
CHRYSTOPHYTA (golden-brown algae)	
<i>Dinobryon divergens</i>	61
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	605
<i>Aphanothece saxicola</i>	363
<i>Chroococcus multicoloratus</i>	908
<i>Chroococcus</i> sp.	61
<i>Oscillatoria</i> sp.	61
<i>Synechococcus</i> sp.	666
<i>Synechocystis</i> sp.	61

08104050 STILLHOUSE LAKE NEAR BELTON, TX—Continued

Stillhouse Hollow Lake EC (310037097383201)

Phytoplankton Analyses October 1989 to September 1990

Date	4-17-90
Time	1351

TOTAL CELLS/mL	17,226
NUMBER OF SPECIES	31
DEPTH COLLECTED (ft.)	1.5

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella kutziana</i>	24
<i>Cyclotella stelligera</i>	236
<i>Stephanodiscus astraea</i> var. <i>minutula</i>	94
<i>Stephanodiscus</i> sp.	24
Order Pennales	
<i>Achnanthes lanceolata</i>	11
<i>Achnanthes minutissima</i>	21
<i>Amphora sabiniana</i>	11
<i>Cocconeis placentula</i> var. <i>euglypta</i>	11
<i>Fragilaria construens</i>	42
<i>Navicula</i> sp.	11
<i>Nitzschia palea</i>	11
<i>Synedra</i> sp.	11
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus nannoselene</i>	126
<i>Chlorococcum humicola</i>	377
<i>Crucigenia tetrapedia</i>	2,514
<i>Gloeocystis gigas</i>	126
<i>Kirchneriella lunaris</i>	377
<i>Oocystis solitaria</i>	126
<i>Phacotus lenticularis</i>	126
<i>Scenedesmus bijuga</i>	251
<i>Scenedesmus quadricauda</i>	126
<i>Selenastrum minutum</i>	126
<i>Sphaerocystis Schroeteri</i>	251
<i>Tetraedron minimum</i>	126
CHRYSTOPHYTA (golden-brown algae)	
<i>Unknown flagellate</i>	126
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	2,011
<i>Aphanothece saxicola</i>	503
<i>Chroococcus dispersus</i>	2,765
<i>Chroococcus multicoloratus</i>	1,760
<i>Chroococcus</i> sp.	2,514
<i>Synechococcus</i> sp.	2,388

08104050 STILLHOUSE LAKE NEAR BELTON, TX—Continued

Stillhouse Hollow Lake AC (310129097315901)

Phytoplankton Analyses October 1989 to September 1990

Date	7-16-90
Time	0921

TOTAL CELLS/mL	7,300
NUMBER OF SPECIES	35
DEPTH COLLECTED (ft.)	0.5

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella kutziana</i>	23
<i>Cyclotella ocellata</i>	103
<i>Cyclotella stelligera</i>	34
<i>Melosira distans</i>	69
<i>Melosira granulata</i>	34
<i>Stephanodiscus astraea</i> var. <i>minutula</i>	344
<i>Stephanodiscus hantzschii</i>	69
Order Pennales	
<i>Anomoeoneis vitrea</i>	1,182
<i>Synedra filiformis</i> var. <i>exilis</i>	440
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus convolutus</i>	34
<i>Chlamydomonas</i> sp.	34
<i>Chlorococcum humicola</i>	236
<i>Dictyosphaerium pulchellum</i>	34
<i>Elakatothrix viridis</i>	34
<i>Golenkinia paucispina</i>	68
<i>Oocystis pusilla</i>	135
<i>Oocystis solitaria</i>	34
<i>Phacotus lenticularis</i>	34
<i>Selenastrum minutum</i>	34
<i>Staurastrum paradoxum</i>	34
<i>Tetraedron caudatum</i>	68
<i>Tetraedron minimum</i>	68
<i>Tetraedron</i> sp.	34
CHRYSOPHYTA (golden-brown algae)	
<i>Dinobryon divergens</i>	34
<i>Dinobryon sertularia</i>	34
CYANOPHYTA (blue-green algae)	
<i>Anabaena levanderi</i>	68
<i>Aphanocapsa delicatissima</i>	1,925
<i>Aphanothece saxicola</i>	169
<i>Chroococcus dispersus</i>	371
<i>Oscillatoria angustissima</i>	304
<i>Oscillatoria limnetica</i>	101
<i>Pseudanabaena catenata</i>	1,013
<i>Spirulina</i> sp.	34
<i>Synechococcus</i> sp.	34
CRYPTOPHYTA (Cryptomonads)	
<i>Chroomonas</i> sp.	34

Stillhouse Hollow Lake EC (310037097383201)

Phytoplankton Analyses October 1989 to September 1990

Date	7-16-90
Time	1346

TOTAL CELLS/mL	55,214
NUMBER OF SPECIES	39
DEPTH COLLECTED (ft.)	0.8

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella kutzingiana</i>	65
<i>Cyclotella ocellata</i>	588
<i>Cyclotella stelligera</i>	131
<i>Melosira distans</i>	196
<i>Melosira granulata</i>	131
<i>Melosira italica</i>	131
<i>Stephanodiscus astraea</i> var. <i>minutula</i>	719
<i>Stephanodiscus</i> sp.	327
Order Pennales	
<i>Anomoeoneis vitrea</i>	817
<i>Diploneis</i> sp.	18
<i>Navicula</i> sp.	18
<i>Nitzschia</i> sp.	36
<i>Synedra delicatissima</i>	18
<i>Synedra filiformis</i> var. <i>exilis</i>	236
CHLOROPHYTA (green algae)	
<i>Chlorella ellipsoidea</i>	490
<i>Chlorococcum humicola</i>	653
<i>Crucigenia tetrapedia</i>	1,307
<i>Crucigenia</i> sp.	1,307
<i>Kirchneriella subsolitaria</i>	653
<i>Pediastrum simplex</i>	980
<i>Scenedesmus bijuga</i>	653
<i>Scenedesmus hystrix</i>	327
<i>Selenastrum minutum</i>	163
<i>Tetraedron minimum</i>	327
CHRYSTOPHYTA (golden-brown algae)	
<i>Dinobryon divergens</i>	163
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	8,985
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	1,960
<i>Aphanothece saxicola</i>	1,960
<i>Chroococcus dispersus</i>	490
<i>Chroococcus limneticus</i>	327
<i>Chroococcus multicoloratus</i>	6,535
<i>Chroococcus</i> sp.	980
<i>Dactylococcopsis fascicularis</i>	15,683
<i>Lyngbya nana</i>	980
<i>Oscillatoria limnetica</i>	3,267
<i>Oscillatoria</i> sp.	490
<i>Raphidiopsis curvata</i>	2,777
<i>Synechococcus</i> sp.	163
EUGLENOPHYTA (Euglenoids)	
<i>Euglena acus</i>	163

BRAZOS RIVER BASIN

309

08104100 LAMPASAS RIVER NEAR BELTON, TX

LOCATION.--Lat 31°00'06", long 97°29'32", Bell County, Hydrologic Unit 12070203, on left bank 22 ft upstream from upstream bridge of two bridges on Interstate Highway 35 and U.S. Highway 81, 3.5 mi downstream from Stillhouse Hollow Dam, 4.1 mi southwest of Belton, and 12.7 mi upstream from mouth.

DRAINAGE AREA.--1,321 mi².

PERIOD OF RECORD.--Chemical analyses: April 1943 to June 1944, April 1963 to August 1964. Chemical and biochemical analyses: January 1981 to August 1982, January 1988 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)
JAN 09...	0820	0.24	631	8.2	13.0	5	--	9.7	94	0.5	210
APR 17...	1520	84	663	8.1	12.5	13	3.0	10.4	99	1.4	200
JUL 16...	1600	97	653	7.7	15.5	2	2.2	9.8	99	0.4	200
DATE	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (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 CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
JAN 09...	33	50	20	42	1	7.7	180	23	84	0.30	7.5
APR 17...	47	42	23	52	2	4.3	150	34	100	0.10	6.5
JUL 16...	45	43	22	52	2	3.9	150	25	99	0.30	7.6
DATE	SOLIDS, SUM OF CONSTITUENTS, 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, 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)	
JAN 09...	341	5	3	2	<0.010	0.300	0.010	--	<0.20	<0.010	
APR 17...	356	25	25	0	<0.010	0.100	0.020	0.48	0.50	<0.010	
JUL 16...	347	9	8	1	<0.010	0.100	0.050	0.15	0.20	0.010	
DATE	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)	
JAN 09...	1.6	<1	51	<0.5	<1.0	<5	<3	<10	<3	<10	
APR 17...	3.3	1	56	<0.5	<1.0	<5	<3	<10	12	<10	
JUL 16...	2.8	2	55	<0.5	<1.0	<5	<3	<10	<3	<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)	
JAN 09...	16	2	<0.1	<10	<10	<1	<1.0	1100	<6	10	
APR 17...	21	7	<0.1	<10	<10	<1	<1.0	1300	<6	18	
JUL 16...	23	180	<0.1	<10	<10	<1	<1.0	1300	<6	8	

BRAZOS RIVER BASIN

08104500 LITTLE RIVER NEAR LITTLE RIVER, TX

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. 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.--No estimated daily discharges. Records good. 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 satellite telemeter at station.

AVERAGE DISCHARGE.--5 years (water years 1924-28) unregulated, 709 ft³/s (513,700 acre-ft/yr); 28 years (water years 1963-90) regulated, 851 ft³/s (616,500 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, 8,520 ft³/s May 3 at 1700 hours (gage height, 23.49 ft); minimum daily, 36 ft³/s Nov. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	75	43	88	188	115	119	4030	5240	1870	241	145
2	78	67	51	86	253	73	145	4210	5220	1840	193	150
3	75	64	57	79	101	63	341	6240	5190	1840	206	174
4	77	68	57	75	82	58	323	1110	5170	1840	185	153
5	71	65	54	70	79	60	318	385	5190	1840	179	149
6	75	69	51	66	78	58	425	799	5280	1840	203	146
7	87	66	44	62	79	327	569	4320	5240	1850	438	146
8	92	64	43	59	83	181	541	4670	5230	1840	436	143
9	87	58	41	58	84	90	541	5050	5240	1830	434	702
10	82	62	42	58	84	77	534	5140	2340	1830	440	504
11	81	64	43	56	65	71	528	5160	5070	1710	455	433
12	77	64	44	55	56	74	483	5270	5390	1690	448	415
13	79	65	44	52	51	70	324	5170	5380	1690	527	405
14	83	62	44	52	47	1610	392	5170	5300	1680	773	406
15	84	57	43	52	46	436	364	5170	5280	1690	1060	406
16	82	52	41	56	46	172	328	5170	5260	1750	1070	403
17	68	63	44	55	46	1380	373	5160	5250	1730	1070	581
18	68	60	49	89	56	1730	356	5150	5230	1730	1090	631
19	71	50	50	87	74	1680	319	5240	5210	1710	1080	647
20	72	53	76	66	60	678	316	5210	5190	1700	924	753
21	68	54	87	60	107	127	314	5170	5020	1710	451	770
22	67	63	84	54	161	113	310	5230	4200	1540	445	447
23	68	72	68	54	76	106	316	5230	3050	1230	445	427
24	64	52	70	62	61	106	553	5220	3060	1050	497	377
25	60	45	72	55	59	106	696	5210	3060	967	472	182
26	60	43	68	56	59	110	1330	5190	3050	833	160	172
27	59	42	67	55	58	115	1220	5190	2880	565	152	171
28	58	40	68	53	72	119	2490	5470	2370	559	149	169
29	64	36	81	61	---	122	2790	5330	2350	554	147	167
30	136	39	87	68	---	156	3610	5300	1910	559	147	161
31	170	---	87	78	---	126	---	5260	---	456	146	---
TOTAL	2435	1734	1800	1977	2311	10309	21268	145624	132850	45523	14663	10535
MEAN	78.5	57.8	58.1	63.8	82.5	333	709	4698	4428	1468	473	351
MAX	170	75	87	89	253	1730	3610	6240	5390	1870	1090	770
MIN	58	36	41	52	46	58	119	385	1910	456	146	143
AC-FT	4830	3440	3570	3920	4580	20450	42190	288800	263500	90290	29080	20900
CAL YR 1989	TOTAL	154424	MEAN	423	MAX	5140	MIN	36	AC-FT	306300		
WTR YR 1990	TOTAL	391029	MEAN	1071	MAX	6240	MIN	36	AC-FT	775600		

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.

WATER-DISCHARGE RECORDS

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

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 contents, 33,760 acre-ft Oct. 1 at 0100 hours (elevation, 788.36 ft); minimum, 27,470 acre-ft Sept. 30 (elevation, 782.73 ft).

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

782.0	26,720	786.0	31,000	789.0	34,540
784.0	28,800	788.0	33,330		

FROM DCP
RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33710	32630	31750	30840	30530	30180	30510	30580	31700	30530	29440	28200
2	33680	32580	31730	30810	30510	30170	30480	30590	31670	30470	29410	28180
3	33640	32540	31710	30800	30500	30150	30470	31550	31640	30440	29360	28160
4	33590	32500	31670	30800	30470	30130	30460	31670	31710	30370	29320	28100
5	33560	32480	31640	30760	30450	30120	30440	31720	31670	30310	29280	28070
6	33530	32460	31630	30780	30440	30120	30480	31730	31640	30260	29210	28030
7	33530	32450	31580	30750	30420	30160	30470	31730	31600	30220	29170	27980
8	33500	32400	31550	30730	30420	30150	30440	31740	31570	30160	29120	27940
9	33450	32360	31520	30710	30430	30150	30440	31730	31520	30110	29110	27960
10	33410	32330	31480	30690	30410	30130	30430	31720	31500	30050	29230	27940
11	33360	32300	31430	30660	30400	30140	30410	31700	31470	30000	29210	27910
12	33330	32260	31400	30630	30370	30140	30400	31700	31430	29950	29170	27880
13	33280	32240	31380	30620	30350	30160	30400	31670	31380	29880	29120	27850
14	33260	32220	31340	30590	30350	30730	30400	31660	31330	29820	29090	27810
15	33220	32180	31300	30590	30340	30740	30380	31640	31300	29860	29050	27790
16	33170	32120	31250	30590	30300	30730	30370	31630	31240	29840	29000	27890
17	33110	32080	31230	30600	30270	30710	30350	31600	31210	29820	28950	27870
18	33040	32040	31210	30620	30270	30700	30340	31600	31160	29800	28890	27840
19	32980	32010	31180	30620	30260	30660	30320	31590	31120	29790	28840	27830
20	32920	31980	31160	30610	30240	30640	30310	31570	31070	29770	28800	27810
21	32870	31980	31120	30590	30310	30620	30300	31560	31020	29730	28760	27780
22	32830	32040	31080	30560	30280	30620	30260	31540	30980	29700	28720	27760
23	32800	32010	31040	30530	30260	30600	30240	31510	30930	29690	28660	27700
24	32780	31970	31000	30530	30230	30580	30220	31480	30890	29680	28620	27650
25	32740	31950	30980	30500	30220	30540	30220	31460	30830	29650	28570	27610
26	32720	31930	30960	30460	30200	30530	30610	31420	30790	29600	28500	27590
27	32700	31900	30930	30440	30170	30510	30610	31390	30730	29570	28450	27560
28	32680	31850	30910	30440	30210	30500	30600	31680	30680	29540	28400	27520
29	32660	31810	30900	30440	---	30530	30590	31720	30630	29520	28360	27500
30	32710	31790	30890	30420	---	30530	30580	31730	30590	29490	28300	27470
31	32680	---	30870	30420	---	30520	---	31720	---	29470	28230	---
MAX	33710	32630	31750	30840	30530	30740	30610	31740	31710	30530	29440	28200
MIN	32660	31790	30870	30420	30170	30120	30220	30580	30590	29470	28230	27470
(+)	787.46	786.69	785.88	785.48	785.29	785.57	785.62	786.63	785.63	784.62	783.46	782.73
(Φ)	-1080	-890	-920	-450	-210	+310	+60	+1140	-1130	-1120	-1240	-760

CAL YR 1989 MAX 45080 MIN 30870 (Φ) -380
WTR YR 1990 MAX 33710 MIN 27470 (Φ) -6290

(+) 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 mi².

PERIOD OF RECORD.--June 1968 to current year.

Water-quality records.--Chemical and biochemical analysis: June 1968 to August 1989.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. 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) about 1.0 mi upstream from gage. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--11 years (water years 1969-79) unregulated, 88.1 ft³/s (63,830 acre-ft/yr); 11 years (water years 1980-90) regulated, 62.0 ft³/s (44,920 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/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, 92.0 ft³/s Mar. 14 at 0600 hours (gage height, 5.41 ft); minimum daily, 3.20 ft³/s Nov. 1-5, Sept. 28-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	3.2	4.2	4.1	4.7	3.9	4.6	6.1	5.8	5.1	4.2	4.0
2	3.8	3.2	4.1	4.2	4.4	3.9	4.6	6.2	5.8	5.0	4.2	4.0
3	3.8	3.2	3.8	4.2	4.1	4.0	4.6	11	5.8	4.8	4.2	4.1
4	3.8	3.2	3.9	4.2	4.0	4.0	4.6	7.6	6.4	4.6	4.2	4.2
5	3.8	3.2	4.0	4.2	4.0	4.0	4.6	7.2	5.8	4.4	4.5	4.2
6	3.8	3.3	4.1	4.4	4.0	4.0	5.3	6.8	5.8	4.4	4.4	4.1
7	4.1	3.4	4.2	4.4	4.0	4.1	4.8	6.5	5.8	4.4	4.2	3.8
8	3.8	7.5	3.8	4.3	4.0	4.1	4.8	6.4	5.8	4.4	4.2	3.8
9	3.8	14	3.8	4.2	4.0	4.0	4.8	6.6	5.8	4.4	4.2	4.2
10	3.8	3.4	3.8	4.3	4.0	3.9	4.8	6.3	5.7	4.5	5.6	4.0
11	3.8	3.4	3.8	4.4	4.0	3.8	4.8	6.3	5.3	4.6	4.4	4.0
12	3.9	3.4	3.8	4.2	4.0	3.8	4.6	6.3	4.8	4.6	4.2	4.0
13	4.0	3.4	3.8	4.2	4.0	3.8	4.8	5.8	4.2	4.6	4.2	3.9
14	4.0	3.5	3.8	4.3	4.0	20	4.6	5.8	4.7	4.6	4.2	3.8
15	3.9	3.6	3.8	4.4	4.0	6.7	4.6	6.1	5.0	5.1	4.2	3.8
16	3.8	3.6	3.8	4.4	4.0	5.6	4.6	6.3	5.1	5.2	4.2	5.3
17	3.8	3.6	3.8	4.6	4.0	5.1	4.6	7.2	5.1	4.7	4.1	4.3
18	3.8	3.6	3.8	4.9	4.1	4.8	4.4	6.3	5.1	4.6	4.9	4.0
19	3.8	3.6	3.8	4.6	4.0	4.7	4.6	6.6	5.1	4.7	4.8	4.0
20	3.8	3.6	4.0	4.5	4.0	4.7	5.7	6.8	4.9	4.6	4.8	3.8
21	4.0	3.9	4.0	4.2	4.5	4.6	5.8	6.5	4.8	4.4	4.7	3.6
22	3.8	4.4	4.0	4.2	4.0	4.6	5.8	5.9	4.9	4.4	4.4	3.5
23	3.8	3.8	4.0	4.2	3.9	4.6	5.7	5.7	5.1	4.4	4.4	3.4
24	3.8	3.8	4.0	4.1	4.0	4.6	6.2	5.8	5.1	4.8	4.4	3.4
25	3.9	3.8	4.0	4.0	4.0	4.6	6.8	5.8	5.1	4.8	4.3	3.4
26	4.2	3.8	4.0	4.0	4.0	4.6	13	5.8	5.1	4.8	4.0	3.4
27	4.4	3.9	4.0	4.0	4.0	4.6	8.4	5.8	5.1	4.6	4.1	3.3
28	4.4	4.2	4.0	4.1	4.1	4.6	7.6	7.3	5.1	4.4	4.3	3.2
29	3.9	4.2	4.0	4.2	---	4.7	7.1	5.8	5.1	4.4	4.1	3.2
30	3.5	4.2	4.0	4.2	---	4.6	6.7	5.8	5.1	4.3	4.0	3.2
31	3.4	---	4.0	4.2	---	4.6	---	5.8	---	4.2	4.0	---
TOTAL	119.9	122.9	121.9	132.4	113.8	153.6	167.9	200.2	158.3	142.8	134.6	114.9
MEAN	3.87	4.10	3.93	4.27	4.06	4.95	5.60	6.46	5.28	4.61	4.34	3.83
MAX	4.4	14	4.2	4.9	4.7	20	13	11	6.4	5.2	5.6	5.3
MIN	3.4	3.2	3.8	4.0	3.9	3.8	4.4	5.7	4.2	4.2	4.0	3.2
AC-FT	238	244	242	263	226	305	333	397	314	283	267	228

CAL YR 1989 TOTAL 7585.32 MEAN 20.8 MAX 631 MIN 3.2 AC-FT 15050
WTR YR 1990 TOTAL 1683.2 MEAN 4.61 MAX 20 MIN 3.2 AC-FT 3340

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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.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 3	1000	*2,600	*6.93	No other peak greater than base discharge.			
Minimum daily discharge, 0.02 ft ³ /s Oct. 2-4.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

BRAZOS RIVER BASIN

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 and crest-stage gage. Datum of gage is 659.97 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Feb. 2-11. Records fair. No regulation or diversions. Several observations of water temperature were made during the year. A U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--23 years, 24.4 ft³/s (3.99 in/yr), 17,680 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 3	1130	*1,600	*6.97	No other peak greater than base discharge.			

Minimum daily discharge, no flow on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	45	.10	2.3	2.3	2.4	.00	.00	.00
2	.00	.00	.00	.00	e.67	.09	2.1	2.9	2.0	.00	.00	.00
3	.00	.00	.00	.00	e.00	.09	1.4	344	2.0	.00	.00	.00
4	.00	.00	.00	.00	e.00	.10	1.2	48	2.7	.00	.00	.00
5	.00	.00	.00	.00	e.00	.11	1.2	13	1.8	.00	.00	.00
6	.00	.00	.00	.00	e.00	.09	1.9	11	1.7	.00	.00	.00
7	.00	.00	.00	.00	e.00	.17	1.1	10	1.5	.00	.00	.00
8	.00	.00	.00	.00	e.00	.11	1.1	9.6	1.5	.00	.00	.00
9	.00	.00	.00	.00	e.00	.08	1.1	9.3	1.4	.00	.00	.00
10	.00	.00	.00	.00	e.00	.06	1.4	8.0	1.2	.00	.00	.00
11	.00	.00	.00	.00	e.00	.06	1.2	7.5	1.2	.00	.00	.00
12	.00	.00	.00	.00	.01	.06	.79	7.4	1.1	.00	.00	.00
13	.00	.00	.00	.00	.00	.06	.63	5.8	.98	.00	.00	.00
14	.00	.00	.00	.00	.00	109	.55	5.2	.93	.00	.00	.00
15	.00	.00	.00	.00	.00	14	.55	5.2	.83	.00	.00	.00
16	.00	.00	.00	.00	.00	1.6	.60	4.9	.71	.00	.00	.00
17	.00	.00	.00	.00	.00	1.5	.73	4.9	.63	.00	.00	.00
18	.00	.00	.00	.00	.05	1.9	.71	4.6	.62	.00	.00	.00
19	.00	.00	.00	.00	.04	2.0	.56	5.1	.68	.00	.00	.00
20	.00	.00	.00	.00	.06	1.8	.46	5.2	.76	.00	.00	.00
21	.00	.00	.00	.00	.22	2.1	.41	4.7	.48	.00	.00	.00
22	.00	.00	.00	.00	.00	2.0	.18	4.5	.27	.00	.00	.00
23	.00	.00	.00	.00	.00	1.8	.18	4.4	.14	.00	.00	.00
24	.00	.00	.00	.00	.00	1.8	.24	4.0	.06	.00	.00	.00
25	.00	.00	.00	.00	.00	2.0	.26	3.7	.03	.00	.00	.00
26	.00	.00	.00	.00	.00	2.0	61	3.4	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	2.0	53	3.2	.00	.00	.00	.00
28	.00	.00	.00	.00	.13	2.0	6.1	3.8	.00	.00	.00	.00
29	.00	.00	.00	.00	---	2.1	3.6	3.5	.00	.00	.00	.00
30	.00	.00	.00	.00	---	2.3	2.7	3.1	.00	.00	.00	.00
31	.00	---	.00	.00	---	2.3	---	2.6	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	46.18	155.38	149.25	554.8	27.62	0.00	0.00	0.00
MEAN	.00	.00	.00	.00	1.65	5.01	4.97	17.9	.92	.00	.00	.00
MAX	.00	.00	.00	.00	45	109	61	344	2.7	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.06	.18	2.3	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.92	308	296	1100	55	.00	.00	.00
CFSM	.00	.00	.00	.00	.02	.06	.06	.22	.01	.00	.00	.00
IN.	.00	.00	.00	.00	.02	.07	.07	.25	.01	.00	.00	.00
CAL YR 1989	TOTAL	1561.21	MEAN	4.28	MAX	372	MIN	.00	AC-FT	3100	CFSM	.05
WTR YR 1990	TOTAL	933.23	MEAN	2.56	MAX	344	MIN	.00	AC-FT	1850	CFSM	.03
											IN.	.70
												.42

e Estimated

BRAZOS RIVER BASIN

315

08105300 SAN GABRIEL RIVER NEAR WEIR, TX

LOCATION.--Lat 30°38'45", long 97°35'06", Williamson County, Hydrologic Unit 12070205, 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.

DRAINAGE AREA.--563 mi².

PERIOD OF RECORD.--December 1976 to September 1990 (discontinued).

Water-quality records.--Chemical and biochemical analyses: October 1976 to August 1989. Continuous daily water temperature records: December 1976 to September 1982.

GAGE.--Water-stage recorder. Datum of gage is 582.04 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Apr. 28-29, Sept. 29-30. Records good. Since March 1980, flow has been partially regulated by Lake Georgetown (station 08104650) 12 mi upstream. The city of Georgetown releases sewage effluent into the river 6.5 mi upstream from this station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--2 years (water years 1978-79) prior to regulation by Lake Georgetown, 165 ft³/s (119,500 acre-ft/yr); 11 years (water years 1980-90) regulated, 175 ft³/s (126,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,500 ft³/s Feb. 3, 1986 (gage height, 23.23 ft); minimum daily, 0.45 ft³/s Aug. 22, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1852, about 37 ft Sept. 10, 1921, from information by local residents. The second highest flood since 1852, about 32 ft, occurred Apr. 24, 1957, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,830 ft³/s May 3 at 1300 hours (gage height, 9.27 ft); minimum daily, 9.4 ft³/s Nov. 3, 4, Dec. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	26	10	10	31	19	29	52	41	15	16	12
2	11	15	10	10	35	17	27	218	35	15	13	13
3	11	9.4	10	10	18	16	19	1990	32	16	13	15
4	11	9.4	10	11	15	16	21	430	94	17	12	16
5	11	9.8	10	12	14	16	22	178	64	16	13	16
6	13	9.7	12	12	15	16	67	134	40	16	12	15
7	93	9.7	13	13	15	23	34	120	34	17	11	15
8	15	9.8	14	13	15	25	28	107	30	14	11	15
9	11	19	15	11	15	18	29	97	29	15	11	22
10	11	12	14	10	15	16	28	88	26	14	11	21
11	11	9.6	15	11	13	16	23	85	25	14	23	18
12	11	9.9	14	10	13	16	21	80	27	14	15	18
13	11	10	14	10	13	16	25	74	26	14	13	18
14	11	10	14	10	13	1530	27	74	23	14	13	17
15	11	9.8	14	12	12	336	23	67	22	16	13	17
16	11	9.6	13	13	12	92	21	65	22	28	13	18
17	10	9.8	13	14	12	54	22	61	20	23	12	71
18	10	9.9	14	24	16	45	21	57	21	22	12	18
19	10	9.9	15	23	16	38	20	59	24	27	13	16
20	11	10	15	17	13	32	20	58	22	25	12	21
21	11	11	15	15	47	31	20	56	20	19	12	17
22	11	25	13	13	27	35	19	50	19	18	12	15
23	11	14	13	13	16	33	20	44	15	21	13	14
24	11	10	11	13	16	29	20	47	16	31	11	14
25	11	10	9.9	13	16	27	26	39	17	30	11	14
26	11	10	9.4	12	15	28	598	36	17	18	11	13
27	11	11	9.9	13	16	28	449	41	17	16	11	13
28	12	10	10	13	19	32	e194	76	19	16	12	13
29	13	10	13	16	---	33	e121	68	17	15	11	e12
30	19	9.9	13	14	---	36	67	47	16	14	11	e12
31	18	---	12	14	---	31	---	39	---	15	12	---
TOTAL	444	349.2	388.2	405	493	2700	2061	4637	830	565	389	529
MEAN	14.3	11.6	12.5	13.1	17.6	87.1	68.7	150	27.7	18.2	12.5	17.6
MAX	93	26	15	24	47	1530	598	1990	94	31	23	71
MIN	10	9.4	9.4	10	12	16	19	36	15	14	11	12
AC-FT	881	693	770	803	978	5360	4090	9200	1650	1120	772	1050

CAL YR 1989 TOTAL 21066.4 MEAN 57.7 MAX 3450 MIN 9.4 AC-FT 41790
WTR YR 1990 TOTAL 13790.4 MEAN 37.8 MAX 1990 MIN 9.4 AC-FT 27350

e Estimated

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.

WATER-DISCHARGE RECORDS

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

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 contents, 95,150 acre-ft May 8 at 1400 hours (elevation, 509.91 ft); minimum, 60,450 acre-ft Dec. 25 (elevation, 502.80 ft).

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

502.0	57,280	506.0	74,610	509.0	90,030
504.0	65,510	508.0	84,650	510.0	95,670

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61880	61470	61180	60650	61710	62840	66170	70510	67230	65420	64160	61670
2	61800	61380	61220	60650	61800	62840	66040	80970	67230	65330	64160	61550
3	61710	61340	61140	60690	61840	62840	66040	92870	67230	65240	64070	61510
4	61710	61340	61140	60690	61800	62840	66080	94120	67230	65110	63990	61470
5	61710	61340	61140	60730	61800	62840	66170	94520	67320	65020	63900	61470
6	61670	61380	61140	60810	61800	62880	66390	94810	67280	64940	63820	61380
7	62090	61380	61140	60850	61800	63130	66430	95040	67230	64890	63690	61340
8	62130	61340	61060	60900	61880	63220	66480	95090	67140	64810	63600	61260
9	62090	61300	61020	60850	62090	63220	66570	92590	67050	64760	63520	61260
10	62040	61260	60980	60850	62040	63350	66660	88710	67050	64680	63470	61300
11	62000	61220	60900	60850	62040	63390	66660	85330	67010	64590	63390	61430
12	61920	61220	60850	60810	62040	63470	66660	81480	66970	64500	63300	61380
13	61880	61220	60810	60770	62040	63600	66700	78260	66880	64330	63220	61340
14	61880	61300	60810	60770	62090	67410	67100	74660	66830	64200	63130	61300
15	61840	61220	60730	60810	62090	68210	67190	71980	66740	64330	63090	61220
16	61800	61060	60650	60900	62000	68080	67230	70280	66660	64370	63050	61590
17	61590	61020	60650	61020	61960	67590	67230	68840	66610	64370	63010	61630
18	61470	61020	60650	61260	62210	66920	67230	68210	66520	64370	62960	61710
19	61340	61020	60650	61340	62210	66430	67190	68030	66480	64420	62880	62040
20	61300	61060	60650	61340	62210	66260	67100	67810	66340	64420	62800	62040
21	61180	61100	60530	61340	62590	66300	67050	67590	66260	64370	62710	62040
22	61140	61380	60530	61340	62630	66340	66970	67230	66170	64290	62590	62000
23	61100	61380	60490	61340	62630	66340	66880	67100	66080	64330	62540	61840
24	61060	61340	60490	61380	62540	66390	66880	67140	66080	64500	62460	61710
25	61060	61380	60490	61300	62590	66340	66880	67140	65950	64500	62340	61630
26	61060	61380	60490	61220	62540	66390	70010	67140	65860	64420	62250	61590
27	61020	61380	60490	61220	62540	66480	71100	67140	65730	64370	62130	61550
28	61020	61260	60570	61300	62840	66610	71380	67140	65640	64330	62040	61510
29	61020	61180	60570	61260	---	66700	71380	67230	65550	64290	61960	61470
30	61510	61180	60650	61220	---	66660	71150	67280	65460	64240	61880	61380
31	61470	---	60650	61340	---	66430	---	67230	---	64160	61800	---
MAX	62130	61470	61220	61380	62840	68210	71380	95090	67320	65420	64160	62040
MIN	61020	61020	60490	60650	61710	62840	66040	67100	65460	64160	61800	61220
(↑)	503.05	502.98	502.85	503.02	503.38	504.21	505.26	504.39	503.99	503.69	503.13	503.03
(Φ)	-450	-290	-530	+690	+1500	+3590	+4720	-3920	-1770	-1300	-2360	-420
CAL YR 1989	MAX	100400	MIN	59800	(Φ)	+810						
WTR YR 1990	MAX	95090	MIN	60490	(Φ)	-540						

(↑) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.

BRAZOS RIVER BASIN

317

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 mi².

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. Datum of gage is 412.60 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow partly regulated by Granger Lake (station 08105600) since Jan. 21, 1980. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years (water years 1966-79) unregulated, 289 ft³/s (209,400 acre-ft/yr); 11 years (water years 1980-90) regulated, 205 ft³/s (148,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft³/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, 2,290 ft³/s May 9 at 2030 hours (gage height, 12.08 ft); minimum daily, 1.8 ft³/s Aug. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	5.2	5.7	7.8	9.0	6.6	173	490	17	3.8	5.6	3.8
2	4.7	4.7	6.3	7.1	8.5	5.8	120	507	17	3.7	3.9	4.9
3	3.0	4.6	6.4	7.0	7.9	6.3	8.6	161	17	3.6	4.5	5.0
4	4.1	5.0	6.2	7.2	6.9	6.4	7.3	12	18	3.8	3.8	4.7
5	3.8	5.2	6.5	7.6	6.3	6.1	7.7	7.1	18	4.2	4.3	4.5
6	3.7	4.8	6.5	8.5	6.2	5.7	7.9	6.5	18	4.5	3.8	3.6
7	6.6	5.1	6.3	8.2	5.8	7.1	7.8	6.0	18	3.7	1.9	3.4
8	4.9	4.8	6.5	7.2	5.8	6.2	7.8	71	17	3.4	4.0	3.8
9	3.9	4.6	6.6	6.7	8.3	5.5	7.8	1160	18	3.1	3.9	5.5
10	3.5	4.7	6.7	6.4	10	5.6	7.3	2120	17	2.7	6.2	5.8
11	4.2	5.1	6.8	7.1	6.4	5.8	6.8	2000	14	3.0	4.2	5.7
12	3.9	5.5	6.6	6.4	6.4	5.6	6.4	2000	8.2	2.3	4.3	5.4
13	3.8	5.8	6.4	6.8	6.1	6.1	7.3	2050	8.4	2.5	3.5	4.4
14	4.7	6.0	6.2	7.1	5.9	14	10	1960	7.7	2.2	1.8	6.3
15	4.7	5.5	6.5	6.6	5.3	8.6	8.0	1670	8.3	3.3	2.3	7.3
16	3.9	4.9	7.3	6.8	5.6	172	7.4	1230	8.1	4.8	2.6	8.6
17	3.6	2.8	8.1	6.3	5.8	412	10	1050	8.3	4.2	3.8	7.8
18	3.2	3.8	8.1	7.2	7.3	413	26	800	7.6	3.8	5.5	6.7
19	4.5	6.0	7.2	6.8	6.2	283	51	187	7.2	3.0	6.2	50
20	4.7	6.1	6.8	6.3	5.9	149	52	178	7.2	3.5	5.6	10
21	5.2	5.7	7.6	7.2	8.5	9.1	52	164	7.3	4.5	4.4	4.6
22	5.5	10	8.0	6.5	6.6	8.2	52	215	5.3	4.2	5.4	4.4
23	5.5	6.1	8.0	6.2	6.2	8.1	52	124	5.8	5.6	3.9	4.4
24	5.2	5.9	7.4	5.7	8.5	7.9	52	19	5.6	5.9	3.6	4.3
25	4.5	6.0	7.4	5.8	7.7	7.8	51	19	5.0	4.6	4.5	4.2
26	4.1	6.2	7.4	7.5	6.8	7.8	79	19	5.4	2.6	5.5	4.2
27	4.3	6.0	6.7	7.4	6.0	7.2	55	19	5.2	3.4	5.0	4.2
28	5.7	5.8	6.9	8.0	7.4	7.9	53	18	3.6	4.0	2.9	4.3
29	5.8	5.6	7.2	8.1	---	7.8	51	17	3.2	4.6	3.9	4.2
30	11	5.7	9.2	7.7	---	50	155	17	3.7	4.2	3.5	4.2
31	5.3	---	8.2	6.3	---	173	---	18	---	3.7	3.9	---
TOTAL	146.8	163.2	217.7	217.5	193.3	1825.2	1192.1	18314.6	310.1	116.4	128.2	200.2
MEAN	4.74	5.44	7.02	7.02	6.90	58.9	39.7	591	10.3	3.75	4.14	6.67
MAX	11	10	9.2	8.5	10	413	173	2120	18	5.9	6.2	50
MIN	3.0	2.8	5.7	5.7	5.3	5.5	6.4	6.0	3.2	2.2	1.8	3.4
AC-FT	291	324	432	431	383	3620	2360	36330	615	231	254	397
CAL YR 1989	TOTAL	27640.2	MEAN	75.7	MAX	1350	MIN	1.5	AC-FT	54820		
WTR YR 1990	TOTAL	23025.3	MEAN	63.1	MAX	2120	MIN	1.8	AC-FT	45670		

BRAZOS RIVER BASIN

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. Datum of gage is 311.59 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period May to July, those of backwater from Little River, and those for periods of estimated daily discharges, which are poor. Flow largely regulated by Granger Lake (station 08105600). Flow is also 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 at this station. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--10 years, 419 ft³/s (303,600 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, 7,740 ft³/s May 4 at 0200 hours (gage height, 27.19 ft) Aug. 29-31; minimum daily, 2.0 ft³/s Sept. 3-6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	17	10	15	25	26	187	351	81	7.5	7.3	2.8
2	2.6	17	11	15	27	43	181	2080	74	6.6	7.8	2.1
3	2.7	15	12	14	73	39	91	4650	70	7.0	8.0	2.0
4	2.6	9.9	12	14	62	30	47	6300	69	6.4	7.2	2.0
5	2.5	7.9	13	14	39	26	38	3170	573	6.4	6.3	2.0
6	2.6	7.3	11	14	30	25	37	620	186	7.9	5.5	2.0
7	2.8	7.4	8.8	15	26	25	44	359	103	7.6	5.2	4.0
8	2.8	7.8	9.8	15	24	26	52	293	86	6.8	5.2	3.6
9	3.3	7.2	9.9	17	23	39	40	459	80	7.0	4.9	5.0
10	12	7.1	8.8	16	21	43	34	1980	75	6.9	5.5	4.1
11	10	7.0	8.8	15	26	31	33	2050	57	6.6	5.4	3.9
12	5.8	6.2	9.4	14	38	28	33	2020	60	6.0	6.0	5.8
13	4.8	6.1	11	14	24	27	31	1990	51	6.0	7.1	6.5
14	4.1	6.4	11	14	21	84	33	1950	52	5.8	14	6.8
15	3.9	7.6	11	14	20	842	40	1900	49	5.4	9.1	5.8
16	3.6	7.9	11	15	18	512	37	1240	45	7.0	7.0	5.4
17	2.8	8.7	e11	15	17	433	32	879	40	7.8	6.1	4.9
18	2.8	8.8	e12	17	18	390	31	827	35	12	6.7	21
19	3.1	7.9	13	18	19	344	47	430	29	13	4.6	32
20	3.1	7.4	13	19	27	206	63	353	28	12	5.2	150
21	2.8	7.9	13	20	33	123	62	276	29	13	5.0	45
22	2.8	14	12	18	36	56	62	265	30	13	3.8	36
23	2.8	16	11	17	83	50	60	268	19	12	3.1	17
24	4.2	23	12	17	43	47	66	164	12	12	2.7	10
25	4.5	27	13	15	32	42	278	134	12	33	3.0	7.6
26	4.5	19	15	14	29	39	378	121	12	30	2.9	6.7
27	4.5	14	17	14	26	38	2160	107	12	22	2.4	6.0
28	4.5	12	17	15	24	38	627	98	11	17	2.3	5.9
29	4.2	10	17	18	---	37	215	191	11	11	2.0	5.5
30	5.8	10	16	18	---	37	144	139	9.1	9.0	2.0	5.2
31	14	---	14	22	---	115	---	93	---	8.1	2.0	---
TOTAL	135.2	330.5	374.5	492	884	3841	5183	35757	2000.1	331.8	165.3	416.6
MEAN	4.36	11.0	12.1	15.9	31.6	124	173	1153	66.7	10.7	5.33	13.9
MAX	14	27	17	22	83	842	2160	6300	573	33	14	150
MIN	2.5	6.1	8.8	14	17	25	31	93	9.1	5.4	2.0	2.0
AC-FT	268	656	743	976	1750	7620	10280	70920	3970	658	328	826
CAL YR 1989	TOTAL	64250.0	MEAN	176	MAX	7670	MIN	1.9	AC-FT	127400		
WTR YR 1990	TOTAL	49911.0	MEAN	137	MAX	6300	MIN	2.0	AC-FT	99000		

e Estimated

BRAZOS RIVER BASIN

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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 mi².

PERIOD OF RECORD.--February 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 299.12 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Daily discharges are not published above 1,000 ft³/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 stations 08104500 and 08106310. The Aluminum Company 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 ft³/s May 9, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 32.13 ft May 4 at 1100 hours (maximum discharge not determined); minimum daily discharge, 49 ft³/s Nov. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	200	60	69	87	86	259	---	---	---	520	136
2	82	96	64	88	150	140	239	---	---	---	310	124
3	82	83	66	100	331	123	185	---	---	---	246	126
4	66	92	74	97	170	100	329	---	---	---	240	135
5	54	76	78	88	111	89	336	---	---	---	218	137
6	54	58	81	86	95	81	346	---	---	---	196	125
7	55	58	76	83	88	84	460	---	---	---	177	123
8	62	59	71	76	85	---	622	---	---	---	378	121
9	70	53	66	75	81	282	595	---	---	---	403	123
10	70	50	64	74	87	153	590	---	---	---	409	---
11	70	49	62	73	83	119	589	---	---	---	403	520
12	60	56	62	69	108	108	583	---	---	---	412	380
13	56	54	64	67	97	103	528	---	---	---	399	376
14	66	70	65	67	87	---	364	---	---	---	490	367
15	82	85	65	67	80	---	433	---	---	---	748	364
16	79	76	64	67	73	---	408	---	---	---	966	369
17	76	73	63	70	68	---	348	---	---	---	987	400
18	75	76	62	80	69	---	392	---	---	---	---	540
19	70	88	65	87	76	---	397	---	---	---	---	606
20	72	79	68	121	96	---	377	---	---	---	---	779
21	75	71	66	107	109	---	369	---	---	---	850	776
22	75	86	87	85	106	218	366	---	---	---	445	744
23	72	92	72	80	268	162	357	---	---	---	422	440
24	71	102	101	75	139	131	408	---	---	---	410	396
25	71	104	95	73	107	128	---	---	---	---	451	361
26	70	86	88	78	93	113	---	---	---	---	456	217
27	69	74	87	73	83	110	---	---	---	869	184	180
28	69	67	84	74	82	111	---	---	---	655	143	163
29	69	63	67	78	---	118	---	---	---	627	132	150
30	75	60	58	75	---	117	---	---	---	613	129	146
31	95	---	70	70	---	179	---	---	---	629	134	---
TOTAL	2205	2336	2215	2472	3109	---	---	---	---	---	---	---
MEAN	71.1	77.9	71.5	79.7	111	---	---	---	---	---	---	---
MAX	95	200	101	121	331	---	---	---	---	---	---	---
MIN	54	49	58	67	68	---	---	---	---	---	---	---
AC-FT	4370	4630	4390	4900	6170	---	---	---	---	---	---	---
CAL YR 1989	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---	---	---
WTR YR 1990	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---	---	---

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. 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.--No estimated daily discharges. Records good. 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 Company of America 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 at station.

AVERAGE DISCHARGE.--36 years (water years 1918-53) unregulated, 1,807 ft³/s (1,309,000 acre-ft/yr); 37 years (water years 1954-90) regulated, 1,535 ft³/s (1,112,000 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, 13,400 ft³/s May 4 at 1700 hours (gage height, 27.09 ft); minimum daily, 34 ft³/s Nov. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	195	56	79	75	90	271	4450	5460	2210	582	143
2	92	117	61	88	118	122	249	6680	5450	2130	326	126
3	88	81	63	114	302	136	208	9880	5430	2090	227	129
4	80	99	68	110	199	108	301	13100	5440	2080	217	134
5	44	91	76	103	125	99	361	8410	5740	2070	202	148
6	45	55	82	99	102	88	370	2050	5580	2110	186	134
7	42	50	81	96	96	90	448	1790	5520	2080	159	131
8	57	52	79	88	93	133	703	4790	5510	2090	322	130
9	70	47	72	82	89	334	681	5260	5510	2100	396	134
10	73	41	69	80	94	170	674	6480	5410	2080	405	486
11	75	34	66	77	87	132	667	6830	3230	2080	398	743
12	61	47	68	73	104	117	664	6810	5050	1990	405	400
13	54	48	71	70	108	109	632	6850	5480	1960	396	418
14	56	53	72	68	94	337	406	6800	5500	1950	441	411
15	90	82	69	67	90	4500	440	6730	5530	1940	762	408
16	90	76	71	68	78	2360	480	6340	5540	1970	1060	410
17	82	71	71	68	71	912	379	6030	5530	2010	1110	453
18	83	72	72	83	72	1920	409	5940	5520	1990	1110	586
19	78	85	76	89	79	2330	440	5710	5520	1980	1130	668
20	78	85	82	120	90	2100	411	5660	5500	1940	1120	855
21	84	73	84	119	120	1170	400	5580	5470	1930	1020	874
22	85	86	94	95	111	284	392	5570	5340	1930	474	921
23	83	97	81	82	227	165	387	5610	4690	1790	413	512
24	81	99	110	79	160	143	713	5530	3570	1500	397	423
25	82	113	108	71	116	127	3210	5460	3470	1320	416	399
26	80	95	108	78	101	110	5200	5440	3470	1200	501	249
27	80	78	109	73	89	106	6860	5410	3490	1070	212	183
28	81	68	99	75	86	107	4510	5400	3270	751	144	167
29	80	60	89	80	---	110	3330	5630	2710	692	133	150
30	91	57	63	75	---	122	3480	5600	2600	693	130	146
31	100	---	72	75	---	138	---	5500	---	680	129	---
TOTAL	2369	2307	2442	2624	3176	18769	37676	187320	145530	54406	14923	11071
MEAN	76.4	76.9	78.8	84.6	113	605	1256	6043	4851	1755	481	369
MAX	104	195	110	120	302	4500	6860	13100	5740	2210	1130	921
MIN	42	34	56	67	71	88	208	1790	2600	680	129	126
AC-FT	4700	4580	4840	5200	6300	37230	74730	371500	288700	107900	29600	21960

CAL YR 1989	TOTAL	218895	MEAN	600	MAX	12100	MIN	32	AC-FT	434200
WTR YR 1990	TOTAL	482613	MEAN	1322	MAX	13100	MIN	34	AC-FT	957300

BRAZOS RIVER BASIN

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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, 908 microsiemens Feb. 6; minimum daily, 191 microsiemens Apr. 25.

WATER TEMPERATURE: Maximum daily, 30.0°C Aug. 3; minimum daily, 0.5°C Dec. 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI, FECAL, KF AGAR (COLS./100 ML)
NOV 01...	1200	230	679	8.3	18.0	18	7.9	84	1.6	180	240
DEC 19...	1110	77	812	8.3	4.5	1.6	12.5	97	1.8	24	160
FEB 06...	0935	99	870	8.2	12.0	25	12.6	118	1.4	360	130
MAY 22...	1100	4920	406	8.2	21.0	110	10.8	122	0.4	180	860
JUL 10...	0820	2180	405	8.2	27.0	85	8.1	102	1.3	K96	700
AUG 22...	0930	590	403	8.2	28.5	40	7.8	101	0.5	190	420

DATE	HARDNESS TOTAL (MG/L AS CaCO3)	HARDNESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY, WAT DIS TOT IT FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)
NOV 01...	220	18	63	14	60	2	5.9	197	51	61	0.40
DEC 19...	240	11	72	15	72	2	6.2	230	62	72	0.60
FEB 06...	190	10	59	11	93	3	6.7	183	84	87	0.70
MAY 22...	160	33	46	10	21	0.7	4.9	123	22	35	<0.10
JUL 10...	150	22	44	9.5	20	0.7	4.6	127	17	38	0.30
AUG 22...	150	25	46	7.6	23	0.8	5.2	122	19	35	0.20

DATE	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DIS-SOLVED (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)
NOV 01...	6.1	383	392	1.97	1.97	0.030	0.030	2.00	2.00	0.040
DEC 19...	5.1	452	464	3.75	3.66	0.050	0.040	3.80	3.70	0.050
FEB 06...	5.3	497	471	2.84	2.95	0.060	0.050	2.90	3.00	0.150
MAY 22...	6.9	232	222	0.370	--	0.030	<0.010	0.400	0.400	<0.010
JUL 10...	5.6	232	217	0.360	0.380	0.040	0.020	0.400	0.400	0.040
AUG 22...	5.9	216	217	0.280	--	0.020	<0.010	0.300	0.400	0.030

08106500 LITTLE RIVER AT CAMERON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 01...	<0.010	0.66	0.70	0.930	0.870	0.820	2.5	45	28	93
DEC 19...	0.050	0.65	0.70	2.00	1.80	1.40	4.3	9	1.9	68
FEB 06...	0.110	1.0	1.2	0.070	--	--	--	53	14	91
MAY 22...	<0.010	--	0.80	0.100	0.040	0.020	0.06	552	7330	74
JUL 10...	0.010	0.16	0.20	0.160	0.070	0.070	0.21	211	1240	89
AUG 22...	<0.010	0.17	0.20	0.140	0.110	0.090	0.28	61	97	98
DATE	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)	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 01...	20	5	67	<0.5	<1.0	2	<3	2	18	<1
DEC 19...	--	--	--	--	--	--	--	--	--	--
FEB 06...	10	4	56	<0.5	<1.0	<5	<3	<10	9	<10
MAY 22...	20	2	58	<0.5	<1.0	<1	<3	<1	11	<1
JUL 10...	--	--	--	--	--	--	--	--	--	--
AUG 22...	10	5	68	<0.5	2.0	<1	<3	1	10	<1
DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 01...	13	3	<0.1	<10	3	1	<1.0	570	7	6
DEC 19...	--	--	--	--	--	--	--	--	--	--
FEB 06...	22	5	<0.1	<10	<10	<1	<1.0	660	<6	7
MAY 22...	9	1	<0.1	<10	2	<1	<1.0	370	<6	4
JUL 10...	--	--	--	--	--	--	--	--	--	--
AUG 22...	7	<1	<0.1	<10	2	<1	<1.0	310	<6	<3

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	2369	657	367	2350	53	337	49	313	230
NOV. 1989	2307	706	395	2460	58	362	55	343	240
DEC. 1989	2442	785	439	2900	68	445	66	432	250
JAN. 1990	2624	752	421	2980	64	451	61	433	240
FEB. 1990	3176	684	382	3280	56	479	53	451	230
MAR. 1990	18769	430	238	12100	30	1520	25	1290	170
APR. 1990	37676	369	205	20800	25	2540	21	2090	150
MAY 1990	187320	399	221	112000	27	13600	22	11200	160
JUNE 1990	145530	400	222	87100	27	10600	22	8710	160
JULY 1990	54406	401	223	32700	27	3990	22	3270	160
AUG. 1990	14923	407	226	9100	28	1120	23	920	170
SEPT 1990	11071	438	243	7260	30	911	26	767	170
TOTAL	482613	**	**	295000	**	36400	**	30200	**
WTD.AVG.	1322	408	226	**	28	**	23	**	160

BRAZOS RIVER BASIN

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08106500 LITTLE RIVER AT CAMERON, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	592	702	762	800	744	686	729	440	392	459	435	470
2	598	675	794	741	706	650	588	403	391	402	442	485
3	595	672	793	713	667	624	566	351	391	407	460	528
4	597	665	768	719	692	657	579	302	390	407	460	540
5	603	765	758	731	734	646	637	291	403	406	462	547
6	607	757	756	735	908	699	577	398	390	405	491	542
7	607	740	751	731	735	664	520	434	396	404	493	543
8	620	724	735	736	698	644	487	432	394	404	518	538
9	614	705	755	743	649	648	544	432	394	409	494	542
10	624	684	755	735	517	609	489	408	396	404	423	524
11	607	720	753	724	486	691	467	411	419	402	415	424
12	641	628	762	731	505	743	472	411	389	403	418	318
13	784	589	767	757	540	637	477	410	387	381	420	296
14	765	611	782	743	608	515	479	406	390	382	421	342
15	710	633	794	747	627	333	483	406	389	380	409	404
16	688	654	822	750	634	351	487	413	388	379	382	416
17	666	683	828	748	671	419	510	416	388	384	373	413
18	668	701	811	748	652	396	571	416	388	392	374	418
19	685	716	798	763	672	443	489	416	387	388	375	478
20	668	716	784	739	697	443	531	432	386	384	373	388
21	659	701	791	737	704	451	535	416	388	379	375	455
22	670	693	795	737	647	471	510	415	387	384	399	445
23	667	687	790	753	702	500	504	413	391	390	391	456
24	668	725	784	787	793	531	503	409	440	387	415	438
25	666	724	792	789	776	548	191	409	438	396	418	472
26	667	694	795	802	756	567	284	408	437	455	410	460
27	684	796	799	790	766	590	285	434	436	419	422	459
28	684	830	790	785	744	604	272	434	435	447	423	461
29	693	810	808	778	---	622	414	432	460	442	438	466
30	690	785	811	802	---	655	430	404	459	442	457	470
31	683	---	820	808	---	682	---	405	---	437	461	---
MEAN	657	706	784	755	680	572	487	407	405	405	427	458

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	17.0	11.5	7.5	14.0	13.5	17.5	18.0	22.5	25.0	27.5	29.0
2	22.0	15.0	11.5	8.0	13.5	12.5	18.0	19.5	23.5	25.0	27.5	28.0
3	22.5	15.0	10.0	10.0	14.0	12.0	17.0	20.0	23.5	25.5	30.0	28.0
4	23.5	15.0	9.5	9.5	13.0	13.0	17.5	18.0	23.0	27.0	28.0	28.0
5	24.0	17.0	12.0	10.0	12.0	14.5	17.5	19.5	24.0	27.0	28.0	28.0
6	25.0	18.5	11.5	10.0	12.5	16.0	17.0	19.5	24.0	27.0	27.0	28.0
7	25.0	20.0	11.0	10.0	12.5	17.5	16.0	20.0	24.0	26.5	27.0	28.0
8	22.0	21.0	10.0	9.0	15.0	18.0	16.0	18.0	24.0	25.0	27.0	28.0
9	21.0	18.5	9.0	9.5	16.5	19.0	16.5	18.5	24.0	26.5	27.0	28.5
10	20.0	18.0	10.0	9.0	15.0	20.0	18.0	19.5	24.0	27.0	27.0	27.0
11	20.0	18.0	9.0	11.5	14.5	21.0	16.0	19.0	24.0	27.0	27.0	25.5
12	20.5	17.5	7.0	10.0	15.0	21.0	16.0	20.0	24.0	27.0	27.0	25.5
13	21.0	19.0	6.0	9.5	16.0	21.0	17.5	20.0	24.0	25.5	27.0	25.0
14	22.0	20.0	6.0	11.0	17.5	21.5	17.0	21.5	24.0	25.0	28.0	26.0
15	22.0	19.0	7.0	13.0	16.0	17.5	18.5	24.0	24.0	25.5	28.0	27.0
16	23.0	16.0	4.0	14.0	15.0	16.5	19.0	22.0	26.0	25.0	28.0	27.0
17	21.0	15.0	4.0	16.5	13.0	16.5	20.5	21.0	25.0	26.0	28.0	27.0
18	19.0	18.0	4.0	16.5	13.0	17.0	20.0	21.0	25.0	26.0	28.0	27.0
19	16.5	14.5	4.0	18.0	13.0	15.0	20.0	21.0	25.0	26.5	29.0	27.0
20	15.0	14.5	4.0	16.5	12.0	14.0	21.0	21.5	25.0	26.5	28.0	27.0
21	15.0	16.0	4.0	14.5	13.0	15.0	22.0	21.5	25.0	27.0	28.0	26.5
22	16.0	16.5	2.0	13.5	12.5	16.0	22.5	21.0	25.5	27.0	28.0	26.5
23	18.0	13.5	2.0	13.0	12.0	17.0	23.5	21.0	25.0	27.5	28.0	24.0
24	19.0	13.0	.5	14.5	14.5	17.0	23.5	21.5	25.0	27.0	28.0	22.0
25	21.5	14.5	5.0	12.0	14.0	14.0	23.0	22.0	25.0	27.0	28.0	22.0
26	20.0	15.5	2.0	11.5	15.0	12.5	20.0	22.0	26.0	27.0	28.0	25.0
27	20.5	16.0	3.0	13.0	16.0	12.0	19.0	22.5	25.0	28.0	28.0	24.0
28	21.0	14.0	4.0	12.5	7.0	14.0	18.0	22.5	25.0	28.0	29.0	24.5
29	21.0	12.0	7.5	11.0	---	17.0	20.0	22.0	25.5	29.0	29.0	25.0
30	20.5	12.0	8.0	11.0	---	16.5	20.0	23.0	26.0	29.0	29.0	24.0
31	17.5	---	6.5	11.5	---	17.0	---	23.0	---	27.0	29.0	---
MEAN	20.5	16.5	6.5	12.0	14.0	16.5	19.0	21.0	24.5	26.5	28.0	26.5

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. 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 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 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); 50 years (water years 1941-90) regulated, 4,850 ft³/s (3,514,000 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, 60,600 ft³/s May 5 (gage height, 29.70 ft); minimum daily, 280 ft³/s Nov. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1020	853	339	373	669	1120	9320	33000	32100	4140	1270	1020
2	1010	892	377	346	730	1080	7370	36200	32700	4390	1260	1020
3	1920	898	391	352	1780	1200	6730	42800	32100	3590	1730	1060
4	2290	810	373	338	3930	1240	5120	53200	31300	3290	1560	988
5	1610	758	373	328	2230	1000	6310	59700	30400	3420	1500	677
6	1390	918	363	330	1510	899	6420	50100	30900	3250	1510	593
7	1190	922	370	344	1310	872	6200	36800	31400	3310	1350	1360
8	1170	739	488	320	1170	1560	6160	36800	29500	3440	910	1270
9	1230	882	546	310	1090	13600	3920	38500	17700	3410	811	1400
10	1130	702	487	305	1040	10900	3170	38900	13700	3220	1410	1630
11	999	492	436	296	1040	7470	3050	40200	24900	3150	1510	1960
12	952	416	490	294	1070	5850	3620	40500	28400	3120	1450	2350
13	900	372	512	426	1070	5050	3920	40400	30900	3020	1050	2140
14	657	385	536	516	1030	5430	3600	38300	30900	2900	1250	1540
15	512	379	547	444	1040	24500	3370	33800	26900	2870	1020	1130
16	444	357	606	401	1430	34900	3170	37600	20800	3190	1520	968
17	647	380	853	416	1240	23300	2430	38800	15600	3090	1960	892
18	802	374	931	434	1040	14800	2220	38300	12100	2980	2080	938
19	821	324	955	404	986	12500	5530	37700	12500	2620	2090	1060
20	811	289	898	650	844	10300	4740	37000	11100	2550	2100	1100
21	671	280	912	1520	767	8760	6570	37400	11100	2580	1970	2510
22	543	393	886	1650	1950	7090	4810	36400	10900	2470	1630	2210
23	493	441	1220	1120	2110	6030	8400	34900	10400	2410	1150	1990
24	495	458	1440	860	1940	5820	8800	34600	7550	3070	1390	1440
25	568	434	3340	772	1720	5670	17800	34300	5130	3830	1510	1170
26	544	411	2660	775	1440	4490	26300	34100	7390	2450	1500	1100
27	531	448	2020	766	1310	3690	34800	33300	6010	2280	1560	959
28	691	437	1080	690	1100	3130	35700	32700	5560	1930	1360	812
29	729	369	710	662	---	4260	26200	31700	5270	1370	1040	743
30	771	324	549	646	---	3890	29900	31400	4330	1150	748	790
31	821	---	465	639	---	8080	---	31700	---	1280	973	---
TOTAL	28362	16137	26153	17727	38586	238481	295650	1181100	569540	89770	44172	38820
MEAN	915	538	844	572	1378	7693	9855	38100	18980	2896	1425	1294
MAX	2290	922	3340	1650	3930	34900	35700	59700	32700	4390	2100	2510
MIN	444	280	339	294	669	872	2220	31400	4330	1150	748	593
AC-FT	56260	32010	51870	35160	76540	473000	586400	2343000	1130000	178100	87620	77000
CAL YR 1989	TOTAL	1565623	MEAN	4289	MAX	46600	MIN	190	AC-FT	3105000		
WTR YR 1990	TOTAL	2584498	MEAN	7081	MAX	59700	MIN	280	AC-FT	5126000		

BRAZOS RIVER BASIN

325

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 mi².

PERIOD OF RECORD.--August 1962 to current year.

GAGE.--Water-stage recorder. 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 discharge. Records fair. Several observations of water temperature were made during the year. A U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--28 years, 50.0 ft³/s (2.88 in/yr), 36,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 24	2300	*540	*9.17	No other peak greater than base discharge.			
Minimum daily discharge, no flow for many days.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	.00	.00	.00	6.4	6.2	4.8	16	1.7	.00	.03	.00		
2	.00	.00	.00	.00	8.3	12	4.9	11	1.0	.00	.01	.00		
3	.00	.00	.00	.00	9.6	14	4.7	72	.35	.00	.01	.00		
4	.00	.00	.00	.00	9.5	12	3.8	27	.13	.00	.01	.00		
5	.00	.00	.00	.00	8.5	9.0	3.3	32	.08	.00	.00	.00		
6	.00	.00	.00	.00	6.9	7.1	3.4	33	.04	.00	.00	.00		
7	.00	.00	.00	.00	5.7	5.9	3.8	20	.02	.00	.00	.00		
8	.00	.00	.00	.00	4.2	5.6	4.2	13	.01	.00	.00	.00		
9	.00	.00	.00	.00	2.7	5.7	4.4	9.1	.01	.00	.00	.00		
10	.00	.00	.00	.00	2.5	5.8	4.9	7.0	.00	.00	.00	.00		
11	.00	.00	.00	.00	2.5	5.8	5.1	7.0	.00	.00	.00	.00		
12	.00	.00	.00	.00	2.6	5.8	5.1	7.1	.00	.00	.00	.00		
13	.00	.00	.00	.00	4.1	5.8	5.8	8.1	.00	.00	.00	.00		
14	.00	.00	.00	.00	4.8	6.0	7.8	8.8	.00	.00	.00	.00		
15	.00	.00	.00	.00	4.8	7.1	11	9.4	.00	.00	.00	.00		
16	.00	.00	.00	.00	4.9	8.2	9.8	8.8	.00	.00	.00	.00		
17	.00	.00	.00	.00	5.6	8.9	9.3	8.8	.00	.00	.00	.00		
18	.00	.00	.00	.00	7.6	9.4	8.2	9.3	.00	.00	.00	.00		
19	.00	.00	.00	.00	8.3	9.4	7.7	8.8	.00	.36	.00	.00		
20	.00	.00	.00	.00	8.4	8.5	7.8	7.8	.00	.70	.00	.00		
21	.00	.00	.00	.00	10	7.3	7.3	7.3	.00	.07	.00	.00		
22	.00	.00	.00	.00	15	6.2	8.3	8.8	.00	.03	.00	.00		
23	.00	.00	.00	.00	12	5.6	7.6	9.4	.00	5.5	.00	.00		
24	.00	.00	.00	.00	10	5.4	69	9.8	.00	4.9	.00	.00		
25	.00	.00	.00	.00	7.3	4.5	151	8.8	.00	2.1	.00	.00		
26	.00	.00	.00	2.1	4.9	4.6	123	6.4	.00	1.2	.00	.00		
27	.00	.00	.00	3.4	3.9	5.3	124	5.2	.00	.85	.00	.00		
28	.00	.00	.00	4.0	4.0	6.5	87	4.6	.00	.31	.00	.00		
29	.00	.00	.00	4.6	---	8.8	51	3.6	.00	.14	.00	.00		
30	.00	.00	.00	5.2	---	12	26	4.3	.00	.08	.00	.00		
31	.00	---	.00	6.0	---	8.0	---	2.4	---	.04	.00	---		
TOTAL	0.00	0.00	0.00	25.30	185.0	232.4	774.0	394.6	3.34	16.28	0.06	0.00		
MEAN	.000	.000	.000	.82	6.61	7.50	25.8	12.7	.11	.53	.002	.000		
MAX	.00	.00	.00	6.0	15	14	151	72	1.7	5.5	.03	.00		
MIN	.00	.00	.00	.00	2.5	4.5	3.3	2.4	.00	.00	.00	.00		
AC-FT	.00	.00	.00	50	367	461	1540	783	6.6	32	.1	.00		
CFSM	.00	.00	.00	.00	.03	.03	.11	.05	.00	.00	.00	.00		
IN.	.00	.00	.00	.00	.03	.04	.12	.06	.00	.00	.00	.00		
CAL YR 1989	TOTAL	3731.06	MEAN	10.2	MAX	250	MIN	.00	AC-FT	7400	CFSM	.04	IN.	.59
WTR YR 1990	TOTAL	1630.98	MEAN	4.47	MAX	151	MIN	.00	AC-FT	3240	CFSM	.02	IN.	.26

BRAZOS RIVER BASIN

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. 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 good. Diversions above station for irrigation. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--28 years, 56.2 ft³/s (40,720 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 25	0400	*4,460	*11.60	No other peak greater than base discharge.			
Minimum daily discharge, no flow for several days.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	.70	.70	3.1	2.3	5.8	3.4	19	1.7	.05	1.7	15
2	2.2	.70	.68	2.9	2.9	8.0	3.1	16	1.7	.03	1.1	13
3	1.9	.60	.57	2.8	2.3	7.0	2.8	169	1.8	.01	.57	15
4	2.3	.47	.51	2.9	3.3	6.4	2.5	111	1.8	.00	.24	18
5	3.0	.40	.47	2.7	2.9	5.4	2.2	103	1.8	.00	.12	19
6	4.0	.39	.47	2.8	2.3	4.1	3.0	37	1.8	.00	.06	17
7	4.9	.53	.58	3.3	1.6	3.7	2.9	22	1.5	.00	.02	6.3
8	4.7	.38	.59	4.0	1.3	3.7	3.3	17	1.2	.00	.00	1.3
9	7.3	.35	.51	3.5	1.3	3.4	4.4	14	.92	.00	.00	.35
10	7.6	.35	.50	3.0	1.5	3.4	3.9	12	.80	1.5	.00	1.3
11	4.2	.38	.83	2.7	1.3	3.6	3.4	9.6	1.4	4.3	.00	.93
12	2.2	.40	1.3	2.7	1.4	4.0	3.0	9.5	4.8	4.8	.00	.51
13	1.0	.40	1.2	2.6	1.4	4.0	2.9	9.1	2.9	4.7	.00	.51
14	.44	.40	2.0	2.3	1.5	4.1	7.3	7.4	1.2	4.1	.00	.62
15	.23	.39	4.6	2.5	2.1	4.6	8.8	6.1	.70	3.9	.00	.73
16	.09	.30	6.0	2.5	2.0	4.4	4.9	7.0	.48	5.9	3.7	.62
17	.03	.30	5.9	2.6	1.5	6.3	4.2	11	.32	9.1	14	1.0
18	.01	.32	5.8	5.2	2.0	4.7	3.8	9.6	.21	11	13	.21
19	.00	.38	6.9	4.6	2.7	3.5	3.1	8.8	.17	10	10	.14
20	.00	.41	4.4	3.0	2.1	2.8	2.8	8.7	.12	9.0	16	.18
21	.00	.57	3.5	2.3	7.0	2.6	2.5	9.4	.11	5.6	16	.08
22	.01	1.7	3.6	1.7	12	2.4	2.2	8.3	.12	3.9	18	.06
23	.03	2.4	2.7	1.5	16	2.5	1.8	6.5	.10	3.7	17	.04
24	.08	1.6	3.2	1.4	10	2.5	115	4.7	.10	5.9	19	.04
25	.06	1.9	6.8	1.3	6.2	2.6	2340	3.2	.09	4.7	18	.03
26	.23	4.0	6.0	1.1	4.0	2.6	690	2.4	.06	8.5	17	1.4
27	1.0	2.6	5.4	1.4	3.3	2.9	718	2.1	.04	11	18	9.4
28	.29	1.9	5.3	1.7	3.9	3.0	279	2.1	.04	6.1	17	12
29	.38	1.0	7.6	1.7	---	4.0	60	2.1	.03	3.5	17	6.3
30	.94	.70	9.7	1.6	---	5.6	29	2.0	.03	2.4	16	1.6
31	.71	---	3.7	1.6	---	4.0	---	2.0	---	2.1	16	---
TOTAL	52.43	26.92	102.01	79.0	102.1	127.6	4313.2	651.6	28.04	125.79	249.51	142.65
MEAN	1.69	.90	3.29	2.55	3.65	4.12	144	21.0	.93	4.06	8.05	4.75
MAX	7.6	4.0	9.7	5.2	16	8.0	2340	169	4.8	11	19	19
MIN	.00	.30	.47	1.1	1.3	2.4	1.8	2.0	.03	.00	.00	.03
AC-FT	104	53	202	157	203	253	8560	1290	56	250	495	283

CAL YR 1989 TOTAL 5372.23 MEAN 14.7 MAX 320 MIN .00 AC-FT 10660
WTR YR 1990 TOTAL 6000.85 MEAN 16.4 MAX 2340 MIN .00 AC-FT 11900

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 Vegua 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 contents, 172,000 acre-ft May 9 at 0600 hours (elevation, 239.02 ft); minimum, 138,800 acre-ft Sept. 29 (elevation, 236.06 ft).

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

236.0	138,200	237.5	154,400	239.0	171,800
236.5	143,500	238.0	160,100	239.5	177,900
237.0	148,900	238.5	165,900		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	150600	147300	145200	142500	144100	146800	147400	166600	158500	151100	146900	140100
2	150300	146900	145100	142400	144100	146800	147400	165900	158300	150900	146700	140100
3	150200	146700	144900	142700	144200	146800	147300	167500	158200	150700	146500	140400
4	150100	146700	144900	142700	144000	146800	147200	169400	158100	150200	146400	140200
5	150000	146700	144800	143100	143900	146600	147200	171200	157700	150100	146000	140000
6	150100	146700	144700	143500	143900	146700	147400	171700	157500	149900	145700	139700
7	150400	146800	145000	143400	143800	146900	147300	171800	157100	149600	145400	139500
8	150200	146600	144400	143400	144000	147000	147000	171800	156800	149300	145100	139300
9	150000	146500	144200	143400	144100	147000	147200	171100	156600	149000	144900	139700
10	149900	146400	144200	143400	143900	147000	147200	169400	156400	148900	144900	140000
11	149700	146200	144000	143300	143900	147200	146900	167800	156100	148700	145000	139800
12	149400	146100	143700	143200	143900	147200	146800	166700	155900	148500	144700	139500
13	149400	146300	143600	143100	143800	147200	146700	165300	155600	147900	144300	139400
14	149300	146400	143500	143100	143900	147500	147200	163900	155300	147400	144100	139300
15	149200	146100	143300	143100	144000	147200	147200	162600	155100	147400	143900	139200
16	149300	145500	142900	143300	143800	147000	147200	162100	154900	147500	143700	140300
17	148800	145300	142800	143600	143600	147000	147000	161600	154700	147800	143500	140500
18	148200	145300	142800	143700	144200	146800	146800	161500	154300	148200	143300	140500
19	147800	145400	142700	144000	144100	146500	146700	161300	154100	148100	143100	140800
20	147700	145600	142700	143900	144100	146400	146700	161000	153800	148100	142800	140700
21	147300	145500	142600	143800	145700	146300	146700	160600	153400	148000	142600	140600
22	147200	146300	142500	143800	146000	146100	146600	160300	153300	147900	142500	140400
23	147000	146100	142200	143700	145800	146100	146400	160200	153000	148200	142300	140000
24	146900	146100	142200	143900	145700	146000	147000	160100	152800	148200	142100	139500
25	146900	146100	142100	143700	145700	145700	148700	159800	152400	148000	141900	139400
26	146800	146100	142100	143500	145700	145500	155300	159500	152400	147800	141700	139200
27	146700	146000	142100	143400	145700	145400	160600	159500	152200	147700	141500	139100
28	146600	145700	142100	143800	146600	145700	164700	159100	151900	147600	141100	139000
29	146700	145400	142200	143500	---	146500	166600	159000	151500	147400	141000	138800
30	147600	145300	142700	143400	---	147200	167100	159000	151300	147200	140800	138700
31	147400	---	142600	143400	---	147300	---	158700	---	146900	140500	---
MAX	150600	147300	145200	144000	146600	147500	167100	171800	158500	151100	146900	140800
MIN	146600	145300	142100	142400	143600	145400	146400	158700	151300	146900	140500	138700
(↑)	236.86	236.67	236.42	236.49	236.79	236.85	238.60	237.88	237.22	236.82	236.22	236.05
(Φ)	-3300	-2100	-2700	+800	+3200	+700	+19800	-8400	-7400	-4400	-6400	-1800
CAL YR 1989	MAX	172300	MIN	117600	(Φ)	+24700						
WTR YR 1990	MAX	171800	MIN	138700	(Φ)	-12000						

(↑) Elevation, in feet, at end of month.
(Φ) Change in contents, in acre-feet.

BRAZOS RIVER BASIN

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

WATER-QUALITY RECORDS

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

301908096313101 - SOMERVILLE LAKE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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, 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 CAC03)
JAN											
10...	0850	1.00	486	8.3	9.5	0.80	11.3	99	--	K12	140
10...	0852	10.0	486	8.2	9.0	--	11.2	96	--	--	--
10...	0854	20.0	486	8.0	8.0	--	10.7	90	--	--	--
10...	0856	28.0	486	8.0	8.0	--	10.6	89	--	--	140
APR											
18...	1040	1.00	504	8.0	20.5	0.60	7.6	84	K2	48	140
18...	1042	10.0	504	7.9	20.5	--	7.5	83	--	--	--
18...	1044	20.0	504	7.7	20.0	--	6.4	70	--	--	--
18...	1046	27.0	510	7.3	19.5	--	3.6	39	--	--	140
JUL											
18...	0830	1.00	490	7.7	26.5	0.60	5.1	64	K12	K4	140
18...	0832	10.0	490	7.7	26.5	--	5.1	64	--	--	--
18...	0834	20.0	490	7.7	26.5	--	5.1	64	--	--	--
18...	0836	28.0	490	7.6	26.5	--	5.1	64	--	--	130

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (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- LITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
JAN										
10...	60	39	9.4	38	1	7.9	76	68	62	0.30
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	63	39	9.5	38	1	8.2	74	68	61	0.30
APR										
18...	62	39	9.6	39	1	8.6	75	62	57	0.20
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	56	39	9.7	39	1	8.6	81	63	57	0.30
JUL										
18...	60	39	9.2	37	1	8.4	75	65	63	0.30
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	56	38	9.1	37	1	8.1	76	59	58	0.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
10...	8.4	279	<0.010	<0.100	0.030	0.87	0.90	0.040	9	1
10...	--	--	<0.010	<0.100	0.040	0.76	0.80	0.050	10	<10
10...	--	--	--	--	--	--	--	--	--	--
10...	8.5	277	0.010	<0.100	0.080	0.92	1.0	0.070	8	67
APR										
18...	8.8	269	0.010	<0.100	0.070	1.0	1.1	0.040	4	3
18...	--	--	0.010	<0.100	0.080	0.82	0.90	0.030	<10	10
18...	--	--	--	--	--	--	--	--	--	--
18...	10	275	0.020	<0.100	0.480	0.92	1.4	0.040	4	240
JUL										
18...	9.1	276	<0.010	<0.100	0.030	1.1	1.1	0.060	23	11
18...	--	--	0.010	<0.100	0.110	1.1	1.2	0.070	10	20
18...	--	--	--	--	--	--	--	--	--	--
18...	8.7	264	<0.010	<0.100	0.110	1.1	1.2	0.070	6	15

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

301940096315801 - SOMERVILLE LAKE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
10...	0910	1.00	486	8.4	9.0	11.6	100
10...	0912	10.0	486	8.3	8.5	11.3	96
10...	0914	20.0	486	8.1	8.0	10.8	91
10...	0916	25.0	486	8.1	8.0	10.8	91
APR							
18...	1105	1.00	500	8.1	20.5	7.8	87
18...	1107	10.0	504	8.0	20.5	7.6	84
18...	1109	22.0	504	7.8	20.0	6.8	75
JUL							
18...	0850	1.00	490	7.7	26.5	5.1	64
18...	0852	10.0	490	7.6	26.5	5.0	62
18...	0854	23.0	490	7.6	26.5	4.8	60

302026096341501 - SOMERVILLE LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
10...	0925	1.00	486	8.4	9.0	11.7	101
10...	0927	12.0	486	8.1	8.0	10.7	90
APR							
18...	1120	1.00	504	8.2	21.5	7.4	84
18...	1122	12.0	504	8.1	21.0	7.1	80
JUL							
18...	0905	1.00	490	7.9	26.0	6.0	74
18...	0907	12.0	490	7.9	26.0	5.9	73

301805096332501 - SOMERVILLE LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
10...	1005	1.00	486	8.3	9.5	11.1	97
10...	1007	15.0	486	8.0	8.5	10.0	85
APR							
18...	1155	1.00	500	8.1	20.5	7.9	88
18...	1157	14.0	500	8.0	20.5	7.5	83
JUL							
18...	0920	1.00	490	7.8	26.5	5.5	69
18...	0922	15.0	490	7.7	26.0	5.0	62

301847096334601 - SOMERVILLE LAKE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
10...	0955	1.00	486	8.3	10.0	10.9	96
10...	0957	10.0	486	8.2	9.0	10.8	93
10...	0959	21.0	486	8.0	8.0	10.3	87
APR							
18...	1145	1.00	504	8.0	20.5	7.3	81
18...	1147	10.0	504	8.0	20.5	7.2	80
18...	1149	21.0	504	7.7	20.5	6.1	68
JUL							
18...	1040	1.00	490	7.8	26.5	5.8	72
18...	1042	10.0	490	7.8	26.5	5.5	69
18...	1044	20.0	490	7.7	26.5	4.9	61

BRAZOS RIVER BASIN

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

301904096335601 - SOMERVILLE LAKE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 CAC03)
JAN											
10...	0935	1.00	486	8.5	9.0	0.80	12.0	103	<1	K2	140
10...	0937	10.0	486	8.4	8.5	--	11.6	99	--	--	--
10...	0939	20.0	486	8.2	8.0	--	10.9	92	--	--	--
10...	0941	26.0	486	8.2	8.0	--	10.7	90	--	--	140
APR											
18...	1130	1.00	504	8.1	21.0	0.70	7.4	83	<1	K4	140
18...	1132	10.0	504	8.0	21.0	--	7.2	81	--	--	--
18...	1134	20.0	504	7.8	20.5	--	6.6	73	--	--	--
18...	1136	25.0	504	7.7	20.5	--	5.9	66	--	--	140
JUL											
18...	1015	1.00	490	7.8	26.5	--	5.8	72	K2	<2	140
18...	1017	10.0	490	7.8	26.5	--	5.5	69	--	--	--
18...	1019	20.0	490	7.7	26.5	--	5.4	67	--	--	--
18...	1021	25.0	490	7.7	26.5	--	5.1	64	--	--	130

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (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 CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
JAN										
10...	61	39	9.5	38	1	8.1	76	68	61	0.30
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	61	39	9.5	38	1	8.2	76	67	62	0.30
APR										
18...	60	39	9.7	40	1	8.3	77	59	64	0.30
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	59	39	9.7	39	1	8.6	78	58	63	0.20
JUL										
18...	61	40	9.4	37	1	8.3	78	64	63	0.30
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	54	38	9.1	37	1	8.2	78	57	57	0.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
10...	8.4	278	<0.010	<0.100	0.020	0.88	0.90	0.050	5	<1
10...	--	--	<0.010	<0.100	0.030	0.97	1.0	0.040	30	<10
10...	--	--	--	--	--	--	--	--	--	--
10...	8.5	278	0.010	<0.100	0.060	0.84	0.90	0.050	5	11
APR										
18...	7.8	274	<0.010	<0.100	0.020	0.98	1.0	0.020	16	5
18...	--	--	<0.010	<0.100	0.060	1.0	1.1	0.020	<10	<10
18...	--	--	--	--	--	--	--	--	--	--
18...	7.9	272	0.010	<0.100	0.170	0.93	1.1	0.030	<3	29
JUL										
18...	8.8	278	<0.010	<0.100	0.110	1.1	1.2	0.070	4	1
18...	--	--	0.010	<0.100	0.130	0.97	1.1	0.070	10	<10
18...	--	--	--	--	--	--	--	--	--	--
18...	8.4	262	0.010	<0.100	0.140	1.1	1.2	0.080	7	33

301817096364101 - SOMERVILLE LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
10...	1020	1.00	486	8.3	10.5	10.8	96
10...	1022	10.0	486	8.1	8.5	10.6	90
10...	1024	18.0	486	8.0	8.5	10.1	86
APR							
18...	1207	1.00	505	7.9	21.0	7.4	83
18...	1209	10.0	505	7.9	20.5	7.3	81
18...	1211	17.0	505	7.8	20.5	6.9	76
JUL							
18...	0931	1.00	487	7.9	26.5	6.1	76
18...	0933	10.0	487	7.9	26.5	5.9	74
18...	0935	17.0	487	7.8	26.5	5.6	70

BRAZOS RIVER BASIN

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08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

301754096380801 - SOMERVILLE LAKE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 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 CAC03)
JAN											
10...	1030	1.00	490	8.3	11.0	0.30	10.4	94	--	K28	140
10...	1032	9.00	490	8.0	10.5	--	9.5	85	--	--	140
APR											
18...	1220	1.00	514	8.0	22.0	0.30	7.3	84	K2	K10	140
18...	1222	9.00	514	7.8	21.5	--	7.0	79	--	--	140
JUL											
18...	0950	1.00	500	7.6	25.0	0.30	5.3	64	K6	K8	140
18...	0952	9.00	500	7.6	25.0	--	4.9	60	--	--	140

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (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 CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
JAN										
10...	62	39	9.5	38	1	7.7	75	68	62	0.30
10...	61	39	9.6	38	1	7.8	76	67	62	0.30
APR										
18...	62	39	9.7	41	2	8.8	75	67	60	0.20
18...	63	39	9.8	41	2	8.8	75	60	65	0.20
JUL										
18...	61	39	9.4	39	1	8.7	75	66	66	0.40
18...	60	39	9.2	38	1	8.8	75	66	67	0.40

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
10...	7.6	277	0.010	<0.100	0.020	1.1	1.1	0.060	12	2
10...	8.2	277	0.020	<0.100	0.070	1.1	1.2	0.070	6	10
APR										
18...	7.8	278	0.020	<0.100	<0.010	--	1.2	0.040	4	<1
18...	7.0	276	0.020	<0.100	0.020	1.2	1.2	0.040	10	4
JUL										
18...	7.8	281	0.020	<0.100	0.140	1.6	1.7	0.140	20	7
18...	7.8	281	0.020	<0.100	0.150	1.7	1.9	0.150	<3	27

BRAZOS RIVER BASIN

06109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX—Continued

Somerville Lake AC (301908096313101)

Phytoplankton Analyses September 1989 to October 1990

Date	1-10-90
Time	0851

TOTAL CELLS/mL	383,897
NUMBER OF SPECIES	32
DEPTH COLLECTED (ft.)	1.2

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Melosira granulata</i> var. <i>angustissima</i>	568
<i>Stephanodiscus</i> sp.	5,966
Order Pennales	
<i>Navicula</i> sp.	817
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	817
<i>Chlamydomonas globosa</i>	2,450
<i>Chlorella ellipsoidea</i>	1,634
<i>Chlorococcum</i> sp.	3,267
<i>Chodatella quadriseta</i>	3,267
<i>Chodatella</i> sp.	1,634
<i>Crucigenia tetrapedia</i>	817
<i>Kirchneriella lunaris</i>	9,802
<i>Oocystis pusilla</i>	3,267
<i>Scenedesmus abundans</i>	1,634
<i>Scenedesmus bijuga</i>	3,267
<i>Scenedesmus dimorphus</i>	1,634
<i>Scenedesmus hystrix</i>	817
<i>Tetraedron minimum</i>	817
<i>Tetrastrum staurogeniaeforme</i>	4,084
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	4,901
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	118,436
<i>Aphanothece saxicola</i>	7,351
<i>Chroococcus dispersus</i>	22,870
<i>Chroococcus multicoloratus</i>	115,986
<i>Chroococcus pallidus</i>	2,450
<i>Chroococcus varius</i>	26,138
<i>Dactylococcopsis fascicularis</i>	10,618
<i>Gloeotheca linearis</i>	3,267
<i>Merismopedia tenuissima</i>	4,901
<i>Oscillatoria limnetica</i>	5,718
<i>Pseudanabaena catenata</i>	817
<i>Synechococcus lineare</i>	10,618
CHRYSOPHYTA (golden-brown algae)	
<i>Unknown flagellate</i>	3,267

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX—Continued

Somerville Lake FC (301754096380801)

Phytoplankton Analyses September 1989 to October 1990

Date	1-10-90
Time	1031

TOTAL CELLS/mL	365,935
NUMBER OF SPECIES	33
DEPTH COLLECTED (ft.)	0.5

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Melosira granulata</i> var. <i>angustissima</i>	223
<i>Stephanodiscus</i> sp.	594
Order Pennales	
<i>Anomoeoneis</i> sp.	136
<i>Fragilaria construens</i> var. <i>venter</i>	272
<i>Navicula</i> sp.	136
<i>Nitzschia</i> sp.	272
CHLOROPHYTA (green algae)	
<i>Chlamydomonas</i> sp.	817
<i>Chlorella ellipsoidea</i>	1,637
<i>Chlorococcum</i> sp.	4,901
<i>Chodatella subsalsa</i>	817
<i>Chodatella</i> sp.	817
<i>Cosmarium</i> sp.	817
<i>Gloeocystis vesiculosa</i>	4,084
<i>Kirchneriella lunaris</i>	8,985
<i>Oocystis solitaria</i>	817
<i>Scenedesmus abundans</i>	1,637
<i>Schroederia setigera</i>	817
<i>Tetraedron minimum</i>	817
<i>Tetrastrum staurogeniaeforme</i>	3,267
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	17,153
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	75,146
<i>Aphanocapsa saxicola</i>	3,267
<i>Chroococcus dispersus</i>	14,702
<i>Chroococcus multicoloratus</i>	152,742
<i>Chroococcus pallidus</i>	817
<i>Chroococcus varius</i>	17,970
<i>Dactylococcopsis fascicularis</i>	15,519
<i>Gloeotheca linearis</i>	9,802
<i>Merismopedia tenuissima</i>	6,534
<i>Microcystis</i> sp.	10,618
<i>Oscillatoria limnetica</i>	4,901
<i>Spirulina subsalsa</i>	817
<i>Synechococcus lineare</i>	4,084

BRAZOS RIVER BASIN

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX—Continued

Stillhouse Hollow Lake AC (310129097315901)

Phytoplankton Analyses October 1989 to September 1990

Date	4-17-90
Time	0941

TOTAL CELLS/mL	4,965
NUMBER OF SPECIES	18
DEPTH COLLECTED (ft.)	6.4

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	145
<i>Cyclotella stelligera</i>	145
<i>Stephanodiscus astraea</i> var. <i>minutula</i>	436
Order Pennales	
<i>Synedra radians</i>	61
CHLOROPHYTA (green algae)	
<i>Chlamydomonas</i> sp.	121
<i>Chlorococcum humicola</i>	182
<i>Crucigenia tetrapedia</i>	242
<i>Scenedesmus abundans</i>	121
<i>Scenedesmus bijuga</i>	484
<i>Sphaerocystis Schroeteri</i>	242
CHRYSTOPHYTA (golden-brown algae)	
<i>Dinobryon divergens</i>	61
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	605
<i>Aphanothece saxicola</i>	363
<i>Chroococcus multicoloratus</i>	908
<i>Chroococcus</i> sp.	61
<i>Oscillatoria</i> sp.	61
<i>Synechococcus</i> sp.	666
<i>Synechocystis</i> sp.	61

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX—Continued

Stillhouse Hollow Lake EC (310037097383201)

Phytoplankton Analyses October 1989 to September 1990

Date	4-17-90
Time	1351

TOTAL CELLS/mL	17,226
NUMBER OF SPECIES	31
DEPTH COLLECTED (ft.)	1.5

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella kutziana</i>	24
<i>Cyclotella stelligera</i>	236
<i>Stephanodiscus astraea</i> var. <i>minutula</i>	94
<i>Stephanodiscus</i> sp.	24
Order Pennales	
<i>Achnanthes lanceolata</i>	11
<i>Achnanthes minutissima</i>	21
<i>Amphora sabiniana</i>	11
<i>Cocconeis placentula</i> var. <i>euglypta</i>	11
<i>Fragilaria construens</i>	42
<i>Navicula</i> sp.	11
<i>Nitzschia palea</i>	11
<i>Synedra</i> sp.	11
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus nannoselene</i>	126
<i>Chlorococcum humicola</i>	377
<i>Crucigenia tetrapedia</i>	2,514
<i>Gloeocystis gigas</i>	126
<i>Kirchneriella lunaris</i>	377
<i>Oocystis solitaria</i>	126
<i>Phacotus lenticularis</i>	126
<i>Scenedesmus bijuga</i>	251
<i>Scenedesmus quadricauda</i>	126
<i>Selenastrum minutum</i>	126
<i>Sphaerocystis Schroeteri</i>	251
<i>Tetraedron minimum</i>	126
CHRYSTOPHYTA (golden-brown algae)	
<i>Unknown flagellate</i>	126
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	2,011
<i>Aphanothece saxicola</i>	503
<i>Chroococcus dispersus</i>	2,765
<i>Chroococcus multicoloratus</i>	1,760
<i>Chroococcus</i> sp.	2,514
<i>Synechococcus</i> sp.	2,388

BRAZOS RIVER BASIN

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX—Continued

Somerville Lake AC (301908096313101)

Phytoplankton Analyses October 1989 to September 1990

Date	7-18-90
Time	0831

TOTAL CELLS/mL	134,614
NUMBER OF SPECIES	34
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella kutziana</i>	52
<i>Cyclotella ocellata</i>	627
<i>Melosira distans</i>	157
<i>Melosira granulata</i>	261
<i>Melosira granulata</i> var. <i>angustissima</i>	157
<i>Stephanodiscus astraia</i> var. <i>minutula</i>	1,098
<i>Stephanodiscus hantzschii</i>	52
<i>Stephanodiscus</i> sp.	209
Order Pennales	
<i>Diploneis puella</i>	207
<i>Navicula pupula</i> var. <i>minutula</i>	69
<i>Nitzschia acicularis</i>	17
<i>Nitzschia palea</i>	17
<i>Nitzschia</i> sp.	17
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus convolutus</i>	327
<i>Ankistrodesmus falcatus</i>	3,921
<i>Ankistrodesmus tumidus</i>	327
<i>Chlorella</i> sp.	327
<i>Kirchneriella lunaris</i>	327
<i>Scenedesmus abundans</i>	653
<i>Scenedesmus bijuga</i>	1,960
CYANOPHYTA (blue-green algae)	
<i>Anabaena levanderi</i>	2,941
<i>Aphanocapsa delicatissima</i>	5,881
<i>Chroococcus dispersus</i>	1,960
<i>Chroococcus limneticus</i>	653
<i>Chroococcus multicoloratus</i>	45,090
<i>Chroococcus varius</i>	3,267
<i>Dactylococcopsis fascicularis</i>	3,594
<i>Lyngbya nana</i>	2,287
<i>Oscillatoria limnetica</i>	5,881
<i>Oscillatoria</i> sp.	1,634
<i>Pseudanabaena catenata</i>	43,129
<i>Raphidiopsis curvata</i>	6,208
<i>Spirulina subsalsa</i>	980
<i>Synechococcus</i> sp.	327

06109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX—Continued

Somerville Lake FC (301754096380801)

Phytoplankton Analyses October 1989 to September 1990

Date	7-18-90
Time	0951

TOTAL CELLS/mL	472,133
NUMBER OF SPECIES	37
DEPTH COLLECTED (ft.)	0.5

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	379
<i>Melosira distans</i>	758
<i>Melosira granulata</i>	379
<i>Melosira granulata</i> var. <i>angustissima</i>	2,844
<i>Stephanodiscus astraea</i> var. <i>minutula</i>	6,257
Order Pennales	
<i>Anomoeoneis vitrea</i>	62
<i>Diploneis puella</i>	880
<i>Navicula</i> sp.	126
<i>Nitzschia acicularis</i>	126
<i>Nitzschia palea</i>	62
<i>Nitzschia</i> sp. 1	251
<i>Nitzschia</i> sp. 2	62
<i>Synedra</i> sp.	62
CHLOROPHYTA (green algae)	
<i>Chlorococcum humicola</i>	817
<i>Golenkinia radiata</i>	1,634
<i>Kirchneriella contorta</i>	1,634
<i>Oocystis</i> sp.	1,634
<i>Schroederia setigera</i>	817
<i>Selenastrum minutum</i>	817
<i>Tetraedron muticum</i>	817
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	34,307
<i>Chroococcus dispersus</i>	31,857
<i>Chroococcus limneticus</i>	10,619
<i>Chroococcus multicoloratus</i>	182,973
<i>Chroococcus varius</i>	12,253
<i>Dactylococcopsis fascicularis</i>	1,634
<i>Lyngbya aerugineo-caerulea</i>	23,688
<i>Lyngbya nana</i>	3,267
<i>Microcystis incerta</i>	33,491
<i>Oscillatoria limnetica</i>	4,084
<i>Pseudanabaena catenata</i>	84,952
<i>Raphidiopsis curvata</i>	18,787
<i>Spirulina subsalsa</i>	1,634
<i>Synechococcus lineare</i>	4,901
<i>Synechocystis</i> sp.	1,634
EUGLENOPHYTA (Euglenoids)	
<i>Euglena acus</i>	817
CRYPTOPHYTA	
<i>Chroomonas</i> sp.	817

BRAZOS RIVER BASIN

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 current year.

REVISED RECORDS.--WSP 1512: 1926(M), 1929, 1935. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. 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.--No estimated daily discharges. Records good above 1.0 ft³/s and fair below. Flow regulated by Somerville Lake (station 08109900) since Feb. 3, 1965. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--41 years (water years 1925-65) unregulated, 290 ft³/s (210,100 acre-ft/yr); 25 years (water years 1966-90) regulated, 269 ft³/s (194,900 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, 833 ft³/s May 13 at 1500 hours (gage height, 6.84 ft); no flow on several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	1.6	2.0	.36	.00	.83	.19	239	.79	1.6	2.0	1.6
2	1.3	1.6	2.0	.26	.02	1.3	.08	400	.86	1.7	2.0	1.7
3	1.3	1.6	2.0	.21	.03	1.2	.03	425	.91	1.7	1.9	1.6
4	1.3	1.6	2.0	.21	.03	.97	.01	319	1.1	1.8	1.8	1.6
5	1.3	1.9	2.0	.18	.02	.81	.00	6.4	1.2	1.9	1.6	1.7
6	1.4	2.1	2.1	.22	.02	.64	.00	.03	1.2	1.8	1.6	1.6
7	1.4	2.0	2.0	.27	.01	.51	.01	.00	1.4	1.5	1.7	1.6
8	1.3	2.0	2.0	.23	.00	.44	.01	.00	1.5	1.5	1.8	1.6
9	1.3	2.0	2.0	.18	.00	.68	.01	191	1.5	1.3	1.9	1.6
10	1.3	2.1	2.1	.12	.01	.99	.01	745	1.3	1.3	2.1	1.8
11	1.3	2.2	2.0	.08	.06	.92	.00	802	1.4	1.5	1.9	1.6
12	1.3	2.2	2.0	.06	.09	.78	.00	812	1.5	1.6	1.7	1.5
13	1.3	2.3	1.9	.03	.08	.65	.00	823	1.4	1.6	1.7	1.5
14	1.2	2.2	1.9	.02	.06	.58	.00	821	1.3	1.4	1.6	1.5
15	1.2	2.3	1.8	.02	.10	.52	.00	709	1.3	1.4	1.6	1.4
16	1.2	2.3	1.7	.00	.08	.38	.00	458	1.3	1.7	1.6	1.6
17	1.3	2.3	1.5	.01	.03	.31	.63	198	1.4	1.9	1.6	1.9
18	1.3	2.3	1.4	.02	.03	.16	9.7	77	1.6	2.2	1.7	1.5
19	1.3	2.3	1.3	.02	.07	.09	.77	73	1.7	2.0	1.7	1.5
20	1.3	2.2	1.1	.02	.07	.08	.11	74	1.7	1.9	1.8	1.5
21	1.3	2.2	1.0	.02	.50	.04	.21	57	1.8	1.9	1.8	1.5
22	1.3	2.5	.94	.01	1.5	.03	.28	2.9	1.9	1.8	1.8	1.5
23	1.3	2.3	.78	.00	1.3	.01	.31	.30	1.7	1.9	1.8	1.5
24	1.4	2.3	.53	.00	1.0	.00	.47	.22	1.7	2.0	1.8	1.4
25	1.5	2.2	.64	.00	.69	.00	.63	.22	1.7	2.0	1.8	1.2
26	1.5	2.1	.56	.00	.46	.00	24	.36	1.8	1.9	1.7	.83
27	1.7	2.1	.52	.00	.33	.00	14	.43	1.4	1.9	1.6	.76
28	1.7	2.1	.47	.00	.32	.00	3.9	.55	1.3	1.8	1.6	.68
29	1.8	2.0	.45	.00	---	.00	.33	.58	1.3	1.9	1.5	.72
30	2.0	2.0	.45	.00	---	.06	28	.62	1.4	1.9	1.5	.81
31	1.8	---	.46	.00	---	.23	---	.70	---	2.0	1.5	---
TOTAL	43.1	62.9	43.60	2.55	6.91	13.21	83.69	7236.31	42.36	54.3	53.7	42.80
MEAN	1.39	2.10	1.41	.082	.25	.43	2.79	233	1.41	1.75	1.73	1.43
MAX	2.0	2.5	2.1	.36	1.5	1.3	28	823	1.9	2.2	2.1	1.9
MIN	1.2	1.6	.45	.00	.00	.00	.00	.00	.79	1.3	1.5	.68
AC-FT	85	125	86	5.1	14	26	166	14350	84	108	107	85
CAL YR 1989	TOTAL	5488.18	MEAN	15.0	MAX	379	MIN	.00	AC-FT	10890		
WTR YR 1990	TOTAL	7685.43	MEAN	21.1	MAX	823	MIN	.00	AC-FT	15240		

BRAZOS RIVER BASIN

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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 1989 TO SEPTEMBER 1990

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS TOTAL (MG/L AS CaCO3)
JAN 10...	1200	0.03	557	7.4	12.0	20	--	9.3	86	2.3	150
APR 18...	0900	8.6	1420	7.7	22.0	14	28	8.4	96	1.6	410
JUL 18...	1210	1.8	538	6.8	26.0	4	8.5	5.0	--	1.6	130
DATE	HARDNESS NONCARBONATE, DIS-SOLVED (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY, WATER DIS-FIX END FIELD CaCO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
JAN 10...	85	43	10	43	2	8.3	64	91	71	0.30	5.9
APR 18...	120	120	21	120	3	12	45	340	230	0.10	13
JUL 18...	85	37	9.2	47	2	8.2	46	82	76	0.30	11
DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	RESIDUE VOLATILE, SUSPENDED (MG/L)	RESIDUE FIXED NON-FILTERABLE (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)	
JAN 10...	312	25	3	22	<0.010	<0.100	0.020	0.68	0.70	0.040	
APR 18...	895	87	43	44	0.010	<0.100	0.030	0.77	0.80	0.020	
JUL 18...	299	32	8	24	<0.010	<0.100	0.070	0.63	0.70	0.040	
DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS Ba)	BERYLLIUM, DIS-SOLVED (UG/L AS Be)	CADMIUM DIS-SOLVED (UG/L AS Cd)	CHROMIUM, DIS-SOLVED (UG/L AS Cr)	COBALT, DIS-SOLVED (UG/L AS Co)	COPPER, DIS-SOLVED (UG/L AS Cu)	IRON, DIS-SOLVED (UG/L AS Fe)	LEAD, DIS-SOLVED (UG/L AS Pb)	
JAN 10...	7.1	<1	100	<0.5	<1.0	<5	<3	<10	6	<10	
APR 18...	10	<1	200	<0.5	2.0	<5	<3	<10	7	<10	
JUL 18...	10	1	99	<0.5	<1.0	<5	<3	<10	11	<10	
DATE	LITHIUM DIS-SOLVED (UG/L AS Li)	MANGANESE, DIS-SOLVED (UG/L AS Mn)	MERCURY DIS-SOLVED (UG/L AS Hg)	MOLYBDENUM, DIS-SOLVED (UG/L AS Mo)	NICKEL, DIS-SOLVED (UG/L AS Ni)	SELENIUM, DIS-SOLVED (UG/L AS Se)	SILVER, DIS-SOLVED (UG/L AS Ag)	STRONTIUM, DIS-SOLVED (UG/L AS Sr)	VANADIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS Zn)	
JAN 10...	18	110	0.1	<10	<10	<1	<1.0	400	<6	28	
APR 18...	55	150	<0.1	<10	<10	<1	2.0	1100	<6	4	
JUL 18...	19	110	<0.1	<10	<10	<1	<1.0	370	<6	7	

BRAZOS RIVER BASIN

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. 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 at station.

AVERAGE DISCHARGE.--28 years, 63.5 ft³/s (4.42 in/yr), 46,010 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 25	1000	*16,000	*17.89	May 4	2400	1,950	14.53

Minimum daily discharge, no flow on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	.00	.31	.37	.47	1.1	4.3	39	1.2	.06	.40	.00		
2	.00	.00	.26	.28	.70	6.5	2.5	24	1.5	.05	.41	.00		
3	.00	.00	.20	.33	1.4	6.9	1.7	351	1.0	.07	.37	.00		
4	.00	.00	.17	.61	2.4	5.1	1.7	1570	.98	.03	.27	.00		
5	.00	.00	.23	.41	1.1	2.7	1.3	1040	.72	.00	.20	.00		
6	.00	.00	.56	.59	.62	1.5	1.2	79	.55	.06	.14	.00		
7	.00	.00	.60	.55	.39	1.0	.96	35	.48	.00	.09	.00		
8	.00	.00	.48	.42	.31	.86	.92	19	.42	.00	.03	.00		
9	.00	.00	.43	.44	.28	.87	.98	14	.36	.00	.00	.00		
10	.00	.00	.68	.69	.26	.88	1.6	11	.34	.00	.00	.00		
11	.00	.00	.74	.57	.21	.82	1.5	9.3	.31	.00	.00	.00		
12	.00	.00	1.3	.38	.21	.79	1.4	7.5	.30	.00	.00	.00		
13	.00	.00	2.0	.30	.21	.84	1.9	6.5	.28	.00	.00	.00		
14	.00	.00	1.9	.28	.23	.84	2.0	5.9	1.2	.00	.11	.00		
15	.00	.00	1.3	.26	.22	.72	2.6	5.4	1.6	.00	.16	.00		
16	.00	.00	.99	.27	.19	.67	2.3	5.1	.96	.00	.11	.00		
17	.00	.00	1.0	.31	.19	1.4	4.1	4.3	.59	.00	.05	.00		
18	.00	.00	.88	.43	.24	1.6	2.7	3.3	.66	.00	.02	.00		
19	.00	.00	.80	.77	.26	1.1	2.0	2.7	.59	.00	.00	4.0		
20	.00	.00	2.0	.78	1.7	.90	1.8	3.0	.46	.00	.00	2.4		
21	.00	.00	1.9	3.1	9.5	.87	2.4	3.3	.30	.76	.00	2.7		
22	.00	.00	.58	1.1	8.1	.81	2.7	3.1	.25	1.7	.00	.77		
23	.00	.64	.27	.44	11	.75	2.7	2.6	.18	.71	.00	.41		
24	.00	.28	.21	.28	4.3	.63	3.1	2.4	.11	.47	.00	.34		
25	.00	.36	.27	.30	2.0	.50	6350	2.1	.05	.70	.00	.31		
26	.00	.53	.36	.34	1.2	.63	3740	1.7	.06	2.3	.00	.27		
27	.00	.57	.37	.30	.94	.76	2880	1.3	.05	1.9	.00	.33		
28	.00	.59	.37	.29	.79	.84	1920	1.2	.19	1.2	.00	.30		
29	.00	.39	.37	.30	---	2.0	599	1.2	.15	.76	.00	.26		
30	.00	.45	.50	.29	---	2.5	92	1.0	.09	.52	.00	.19		
31	.00	---	.51	.26	---	5.0	---	.91	---	.38	.00	---		
TOTAL	0.00	3.81	22.54	16.04	49.42	52.38	15631.36	3255.81	15.93	11.61	2.36	12.28		
MEAN	.000	.13	.73	.52	1.76	1.69	521	105	.53	.37	.076	.41		
MAX	.00	.64	2.0	3.1	11	6.9	6350	1570	1.6	2.3	.41	4.0		
MIN	.00	.00	.17	.26	.19	.50	.92	.91	.05	.00	.00	.00		
AC-FT	.00	7.6	45	32	98	104	31000	6460	32	23	4.7	24		
CFSM	.00	.00	.00	.00	.01	.01	2.67	.54	.00	.00	.00	.00		
IN.	.00	.00	.00	.00	.01	.01	2.98	.62	.00	.00	.00	.00		
CAL YR 1989	TOTAL	6782.58	MEAN	18.6	1000	MIN	.00	AC-FT	13450	CFSM	.10	IN.	1.29	
WTR YR 1990	TOTAL	19073.54	MEAN	52.3	MAX	6350	MIN	.00	AC-FT	37830	CFSM	.27	IN.	3.64

BRAZOS RIVER MAIN STEM

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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.--Records good except those for estimated gage heights, which are poor. Backwater at times from the Navasota River. There are many diversions above station for irrigation, municipal, industrial, and oil field operations. At times, flow is 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, 31.85 ft May 6 at 1200 hours; minimum, 1.77 ft Jan. 12.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.71	2.90	1.88	2.32	2.69	3.95	12.74	22.71	e22.56	8.10	4.56	3.97
2	2.85	2.93	1.93	2.11	2.87	4.03	11.26	23.76	e21.56	8.06	4.38	3.98
3	3.59	2.98	2.00	2.12	2.99	4.01	10.37	26.17	e21.16	7.76	4.73	4.04
4	5.14	2.93	1.99	2.07	6.55	4.19	9.37	28.99	e20.76	7.20	5.00	4.00
5	4.24	2.79	1.96	2.04	5.83	3.96	9.18	31.37	e21.06	7.14	4.78	3.80
6	3.92	2.86	1.95	2.09	4.60	3.50	10.08	31.06	e21.66	7.16	4.76	3.42
7	3.54	3.02	1.93	2.05	4.02	3.23	9.91	26.34	e21.56	7.04	4.77	3.56
8	3.36	2.92	1.97	2.02	3.83	3.09	10.23	26.06	21.06	7.16	4.20	4.59
9	3.40	2.57	2.23	1.93	3.65	12.02	8.94	e24.96	17.10	7.20	3.78	4.46
10	3.35	2.96	2.29	1.90	3.47	12.22	7.57	e25.46	e13.26	6.97	4.04	4.98
11	3.15	2.52	2.19	1.86	3.41	9.89	6.95	26.58	17.68	6.95	4.68	5.68
12	2.99	2.26	2.11	1.85	3.37	8.81	7.09	e27.26	18.97	6.85	4.71	5.84
13	2.96	2.15	2.23	1.82	3.42	8.09	7.55	e28.16	20.06	6.72	4.33	6.19
14	2.74	2.10	2.27	2.19	3.36	8.33	7.52	e27.46	e21.06	6.73	4.03	5.36
15	2.39	2.07	2.32	2.29	3.34	17.40	7.11	25.36	19.80	6.52	4.18	4.65
16	2.15	2.03	2.34	2.16	3.46	22.14	6.92	e24.26	17.40	6.78	4.01	4.24
17	2.02	2.00	2.59	2.23	3.94	18.72	6.07	e27.16	15.53	7.04	5.08	4.07
18	2.55	2.09	3.02	2.85	3.61	15.29	5.59	e27.06	13.20	6.85	5.49	3.89
19	2.66	2.07	3.08	2.44	3.50	14.23	7.74	e26.96	13.64	6.50	5.57	4.06
20	2.67	1.98	3.04	2.34	3.23	13.12	8.50	e26.96	12.58	6.31	5.57	4.19
21	2.64	1.88	3.02	3.53	4.75	13.80	9.12	e26.86	12.47	6.32	5.64	4.93
22	2.35	1.99	3.01	4.58	3.99	13.24	8.36	e26.16	12.35	6.12	5.15	6.04
23	2.16	2.19	2.98	4.14	5.80	12.34	9.99	e24.66	12.12	6.14	4.62	5.53
24	2.07	2.20	3.32	3.50	5.29	11.35	11.91	24.16	11.14	6.09	4.21	5.04
25	2.09	2.22	5.31	3.04	5.35	11.11	15.98	23.76	9.21	7.81	4.65	4.36
26	2.23	2.13	5.80	2.85	4.73	9.57	21.14	e23.26	10.27	6.65	4.68	4.13
27	2.27	2.09	5.14	2.86	4.28	7.98	24.36	23.06	9.78	5.93	4.72	3.98
28	2.39	2.15	4.07	2.89	4.07	7.48	25.23	22.66	9.20	5.77	4.76	3.71
29	2.78	2.11	3.20	2.68	---	9.97	21.50	22.06	9.13	5.05	4.24	3.47
30	2.85	1.98	2.77	2.63	---	9.47	21.68	20.76	8.42	4.55	3.87	3.39
31	2.87	---	2.53	2.61	---	10.38	---	e20.56	---	4.30	3.62	---
MAX	5.14	3.02	5.80	4.58	6.55	22.14	25.23	31.37	22.56	8.10	5.64	6.19
MIN	2.02	1.88	1.88	1.82	2.69	3.09	5.59	20.56	8.42	4.30	3.62	3.39

CAL YR 1989 MAX 28.16 MIN 1.59
WTR YR 1990 MAX 31.37 MIN 1.82

e Estimated

BRAZOS RIVER BASIN

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 mi².

PERIOD OF RECORD.--July 1975 to May 1978 (periodic gage-height and low-flow measurements only), June 1978 to current year.

Water-quality records.--Specific conductance: November 1967 to September 1989. Water temperature: November 1967 to September 1989.

GAGE.--Water-stage recorder 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 at station.

AVERAGE DISCHARGE.--12 years, 104 ft³/s (75,350 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,200 ft³/s May 11, 1979 (gage height, 15.06 ft); no flow at times.

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, 12,400 ft³/s Mar. 14 at 1800 hours (gage height, 11.60 ft); no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.54	.40	.35	.01	17	26	504	62	17	.66	1.1	.00
2	.48	.29	.25	.03	332	17	163	47	21	.52	.46	.00
3	.44	.25	.22	.05	349	12	80	2570	22	.26	.43	.00
4	.35	.15	.38	.09	118	8.4	57	6090	20	.17	.33	.00
5	.19	.16	.31	.16	61	5.3	43	2190	19	.26	.41	.00
6	.12	.08	.20	.17	46	3.7	447	379	15	.49	.53	.00
7	.34	.01	.12	.23	32	1210	533	120	13	.47	.51	.00
8	.75	.09	.06	.30	22	7180	193	73	9.4	.53	.40	.00
9	.83	.18	.00	.21	18	3020	91	59	6.7	.46	.22	.00
10	.72	.24	.00	.09	16	550	75	40	5.1	.30	.19	.13
11	.50	.23	.00	.05	10	168	48	26	3.7	.18	.19	.64
12	.57	.21	.01	.03	6.5	91	32	1340	2.5	.23	.26	.47
13	.28	.22	.03	.01	3.7	63	23	3100	1.7	.13	.30	.38
14	.20	.25	.05	.04	3.8	6730	44	1130	1.3	.09	.15	.38
15	.23	.26	.08	.11	5.8	6850	103	248	1.2	.09	.11	.34
16	.24	.25	.07	.20	3.9	1640	91	100	1.0	.07	.14	.41
17	.27	.23	.04	.31	1.8	357	68	72	.83	.40	.21	.55
18	.32	.27	.01	5.4	2.8	132	46	72	1.2	.39	.08	.50
19	.38	.25	.03	8.5	5.2	84	32	782	1.2	.22	.18	.41
20	.37	.24	.02	197	5.0	58	23	1950	.94	.11	.31	.44
21	.37	.25	.04	119	17	41	19	569	1.1	.21	.11	.37
22	.36	.52	.04	64	452	30	15	157	.92	.14	.11	.39
23	.29	.42	.00	44	318	23	12	75	.98	.15	.03	.40
24	.22	.35	.00	34	118	22	10	53	1.1	.40	.02	.37
25	.17	.27	.00	27	66	16	11	40	1.1	.50	.00	.34
26	.18	.29	.00	13	42	13	30	27	.97	.15	.00	.39
27	.12	.28	.00	9.6	29	10	489	19	.81	.02	.00	.31
28	.18	.30	.00	9.6	30	11	633	14	.57	.03	.00	.24
29	.24	.32	.00	7.4	---	117	233	8.4	.59	.01	.00	.24
30	.59	.30	.00	5.6	---	3260	105	6.3	.39	3.2	.00	.24
31	.51	---	.00	4.1	---	2620	---	14	---	2.1	.00	---
TOTAL	11.35	7.56	2.31	550.29	2131.5	34368.4	4253	21432.7	172.30	12.94	6.78	7.94
MEAN	.37	.25	.075	17.8	76.1	1109	142	691	5.74	.42	.22	.26
MAX	.83	.52	.38	197	452	7180	633	6090	22	3.2	1.1	.64
MIN	.12	.01	.00	.01	1.8	3.7	10	6.3	.39	.01	.00	.00
AC-FT	23	15	4.6	1090	4230	68170	8440	42510	342	26	13	16
CAL YR 1989	TOTAL	46560.66	MEAN	128	MAX	12400	MIN	.00	AC-FT	92350		
WTR YR 1990	TOTAL	62957.07	MEAN	172	MAX	7180	MIN	.00	AC-FT	124900		

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 mi².

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. 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 at station.

AVERAGE DISCHARGE.--12 years, 39.2 ft³/s (9.32 in/yr), 28,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,950 ft³/s May 17, 1989 gage height, 15.37 ft (from rating curve extended above 2,200 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 8	1100	1,370	12.86	May 3	2300	*4,020	*14.50
Mar. 15	0030	3,290	14.27	May 12	2400	1,750	13.00
Apr. 28	0230	914	12.11	May 21	2100	1,110	a12.37

a From floodmark.

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	4.0	4.2	8.8	45	37	83	.10	.11	.00
2	.00	.00	.00	3.9	39	7.8	25	849	36	.08	.09	.00
3	.00	.00	.00	3.9	46	4.1	18	1670	22	.05	.07	.00
4	.00	.00	.00	3.9	11	2.8	14	2380	22	.05	.05	.00
5	.00	.00	.01	4.0	3.6	2.3	12	945	15	.03	.01	.00
6	.00	.00	.04	4.3	2.2	1.9	26	225	9.0	.03	.00	.00
7	.00	.00	.06	4.5	1.6	250	86	58	4.8	.04	.00	.00
8	.00	.00	.10	4.7	1.2	1120	31	36	3.3	.03	.00	.00
9	.00	.00	.21	4.9	57	683	17	26	3.1	.03	.00	.00
10	.00	.00	.31	5.0	121	209	13	20	2.7	.04	.00	14
11	.00	.00	.29	5.0	9.9	56	11	15	2.4	.03	.00	11
12	.00	.00	.31	4.9	3.4	35	9.1	952	2.0	.03	.00	12
13	.00	.00	.39	5.0	2.1	26	8.3	1530	1.8	.01	.00	1.9
14	.00	.00	.47	5.1	1.5	367	60	634	1.6	.00	.00	.77
15	.00	.00	.54	5.4	1.7	1940	211	133	1.5	.00	.00	.43
16	.00	.00	.51	5.7	2.3	696	95	47	1.4	.00	.00	.25
17	.00	.00	.59	6.9	1.7	217	33	34	1.1	.02	.00	.11
18	.00	.00	.71	52	1.6	56	17	28	.99	.04	.00	.07
19	.00	.00	.79	160	7.4	33	12	26	.90	.06	.00	.03
20	.00	.00	.92	52	7.4	23	9.1	44	.79	.15	.00	.00
21	.00	.00	1.2	10	59	18	7.9	e500	.63	.10	.00	.00
22	.00	.01	1.2	4.6	251	16	7.1	e105	.46	.06	.00	.06
23	.00	1.1	1.1	2.8	117	14	6.3	13	.43	.09	.00	.14
24	.00	.02	1.0	2.5	21	13	6.5	9.5	.41	1.7	.00	.13
25	.00	.00	1.1	2.7	8.6	11	6.7	9.2	.31	1.0	.00	.04
26	.00	.00	1.2	2.4	4.2	11	135	10	.20	.89	.00	.03
27	.00	.00	1.8	2.3	2.8	10	561	8.6	.19	.43	.00	.01
28	.00	.00	2.2	2.9	2.6	11	748	8.0	.16	.26	.00	.00
29	.00	.00	2.4	3.8	---	74	541	7.0	.14	.22	.00	.00
30	.00	.00	3.1	3.9	---	349	118	6.5	.13	.17	.00	.00
31	.00	---	3.8	3.2	---	200	---	26	---	.12	.00	---
TOTAL	0.00	1.13	26.35	386.2	792.0	6465.7	2890.0	10391.8	218.44	5.86	0.33	40.97
MEAN	.000	.038	.85	12.5	28.3	209	96.3	335	7.28	.19	.011	1.37
MAX	.00	1.1	3.8	160	251	1940	748	2380	83	1.7	.11	14
MIN	.00	.00	.00	2.3	1.2	1.9	6.3	6.5	.13	.00	.00	.00
AC-FT	.00	2.2	52	766	1570	12820	5730	20610	433	12	.7	81
CFSM	.00	.00	.01	.22	.50	3.65	1.69	5.87	.13	.00	.00	.02
IN.	.00	.00	.02	.25	.52	4.21	1.88	6.77	.14	.00	.00	.03

CAL YR 1989 TOTAL 14582.05 MEAN 40.0 MAX 2430 MIN .00 AC-FT 28920 CFSM .70 IN. 9.50
WTR YR 1990 TOTAL 21218.78 MEAN 58.1 MAX 2380 MIN .00 AC-FT 42090 CFSM 1.02 IN. 13.82

e Estimated

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. 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 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, 245,700 acre-ft May 4 at 1900 hours (elevation, 364.43 ft); minimum, 189,000 acre-ft Jan. 13 at 2200 hours (elevation, 360.17 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	365.0	254,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204500	198800	194000	189900	197700	212200	227900	226100	226700	214900	206200	195200
2	204400	198600	194000	189700	198300	211800	225800	227200	225800	214800	206000	195000
3	204200	198100	193500	190100	200600	211900	225400	239000	226400	214200	205400	194500
4	203900	197600	193100	190100	200100	211500	225300	245400	224700	213800	205400	194200
5	203500	197700	193100	190300	200000	211200	227200	239400	223800	213300	205700	193700
6	204000	197500	193500	190100	200400	211500	226400	229600	223700	213200	205300	193200
7	204800	197700	194600	190100	200200	214100	226700	226300	223400	212900	204800	192900
8	204500	197700	193100	190000	200100	222400	226100	225800	223100	212500	204200	192600
9	204300	197100	192400	190000	203100	224900	226100	227000	223200	212200	203800	194600
10	203900	196800	192900	189900	203700	221900	226700	226000	223100	211600	203400	200100
11	203400	196500	193700	190300	203900	221900	225700	226000	222700	211400	203100	200600
12	203400	196100	192000	189800	203400	222400	224700	230400	222100	211400	202600	200500
13	203300	196100	191600	189200	203500	221300	224900	232500	221700	210900	202300	200400
14	203000	195800	191400	189400	203900	227100	225800	227500	221500	209900	201700	200400
15	202800	196200	192000	189400	204400	225800	226100	224500	221300	209600	201500	200100
16	203400	195500	191100	189400	204300	225600	226100	226300	221100	209400	201100	199900
17	202400	195000	190900	190600	203800	226800	226400	225600	220700	209300	200600	199600
18	202500	194700	191100	193200	204500	226000	225700	225300	220700	209200	200200	199300
19	200600	194600	190800	195700	204700	226300	225300	225700	220400	208800	199900	199200
20	200200	194500	190600	195800	204800	226000	225000	227600	220000	208500	199700	199000
21	199900	194300	192000	196200	206500	225400	225800	228300	219700	208000	199300	198800
22	199600	196300	191000	196200	208500	225800	225700	226300	219600	207900	199100	199100
23	199200	195300	189900	196500	210100	226000	225400	226000	218800	208000	198500	198500
24	199300	194800	189900	198300	210600	226700	226500	225700	218100	208000	198200	197800
25	199200	195000	189800	196200	210500	226000	226000	225700	216900	207500	197800	197600
26	199000	195000	189800	195600	210500	225600	229200	225200	217100	207200	197700	197400
27	198700	195700	189800	196600	210900	225300	230000	225600	216700	207100	197200	197300
28	198300	195200	189700	196800	212500	225600	229400	225600	216100	206700	196700	197200
29	198100	194300	189900	196100	---	228100	226300	224500	215800	206300	196500	197100
30	199600	194100	190900	196500	---	229400	225300	224900	215400	206000	196100	197100
31	199100	---	190000	196200	---	231300	---	226400	---	205600	195600	---
MAX	204800	198800	194600	198300	212500	231300	230000	245400	226700	214900	206200	200600
MIN	198100	194100	189700	189200	197700	211200	224700	224500	215400	205600	195600	192600
(†)	360.98	360.58	360.25	360.75	362.03	363.41	362.98	363.06	362.25	361.49	360.70	360.82
(Φ)	-6000	-5000	-4100	+6200	+16300	+18800	-6000	+1100	-11000	-9800	-10000	+1500

CAL YR 1989 MAX 238300 MIN 178100 (Φ) +11400
WTR YR 1990 MAX 245400 MIN 189200 (Φ) -8000

(†) 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 1989 TO SEPTEMBER 1990

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)
JAN							
09...	1215	1.00	225	8.0	8.0	10.9	93
09...	1217	10.0	225	7.9	7.0	10.7	89
09...	1219	20.0	225	7.8	7.0	10.6	88
09...	1221	30.0	225	7.8	7.0	10.6	88
09...	1223	37.0	225	7.7	7.0	10.5	87
APR							
19...	1007	1.00	211	7.5	18.5	7.5	80
19...	1009	10.0	211	7.5	18.5	7.5	80
19...	1011	20.0	211	7.5	18.0	7.4	78
19...	1013	30.0	211	7.5	18.0	7.3	77
19...	1015	37.0	211	7.5	18.0	7.1	75
JUL							
17...	0920	1.00	206	7.4	27.0	5.4	68
17...	0922	10.0	206	7.4	27.0	5.3	67
17...	0924	20.0	206	7.4	27.0	5.3	67
17...	0926	30.0	206	7.4	27.0	5.3	67
17...	0928	35.0	206	7.4	27.0	5.3	67

311941096191401 - LAKE LIMESTONE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN										
09...	1235	1.00	228	8.2	8.0	0.90	11.3	96	74	11
09...	1237	10.0	228	8.1	7.5	--	11.1	93	--	--
09...	1239	20.0	228	8.0	7.0	--	10.7	89	--	--
09...	1241	30.0	228	7.9	7.0	--	10.7	89	--	--
09...	1243	43.0	228	7.9	7.0	--	10.7	89	72	9
APR										
19...	1022	1.00	210	7.5	18.0	0.30	7.4	78	67	13
19...	1024	10.0	210	7.5	18.0	--	7.4	78	--	--
19...	1026	20.0	210	7.5	18.0	--	7.4	78	--	--
19...	1028	30.0	210	7.5	18.0	--	7.4	78	--	--
19...	1030	44.0	211	7.4	17.5	--	6.6	69	68	12
JUL										
17...	0950	1.00	206	7.5	27.0	0.60	5.4	68	56	2
17...	0952	10.0	206	7.4	27.0	--	5.4	68	--	--
17...	0954	20.0	206	7.4	27.0	--	5.2	66	--	--
17...	0956	30.0	206	7.4	27.0	--	5.2	66	--	--
17...	0958	35.0	206	7.4	27.0	--	5.2	66	--	--
17...	1000	43.0	244	7.0	25.0	--	0	0	58	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)
JAN										
09...	23	4.1	13	0.7	4.7	63	16	20	0.20	5.7
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	22	4.1	13	0.7	4.6	63	16	20	0.20	5.7
APR										
19...	21	3.6	12	0.6	4.2	54	15	19	<0.10	5.0
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	21	3.7	12	0.6	4.3	56	15	18	<0.10	5.4
JUL										
17...	17	3.3	11	0.6	4.3	54	13	17	<0.10	5.8
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	17	3.8	11	0.6	4.3	77	11	17	<0.10	14

BRAZOS RIVER BASIN

08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

311941096191401 - LAKE LIMESTONE SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
09...	124	--	<0.010	<0.100	0.040	0.66	0.70	0.040	17	<1
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	<0.010	<0.100	0.050	0.55	0.60	0.040	20	<10
09...	--	--	--	--	--	--	--	--	--	--
09...	123	--	<0.010	<0.100	0.060	0.64	0.70	0.040	13	10
APR										
19...	112	0.470	0.030	0.500	0.060	0.54	0.60	0.200	41	3
19...	--	--	--	--	--	--	--	--	--	--
19...	--	0.470	0.030	0.500	0.020	0.68	0.70	0.070	30	<10
19...	--	--	--	--	--	--	--	--	--	--
19...	113	0.450	0.050	0.500	0.100	0.60	0.70	0.250	55	47
JUL										
17...	104	0.280	0.020	0.300	0.050	0.65	0.70	0.050	39	48
17...	--	--	--	--	--	--	--	--	--	--
17...	--	0.280	0.020	0.300	0.040	0.66	0.70	0.040	70	110
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	130	--	0.030	<0.100	1.00	1.0	2.0	0.420	2200	3300

312458096205101 - LAKE LIMESTONE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN										
09...	1305	1.00	230	8.1	9.0	1.00	11.0	96	74	10
09...	1307	10.0	230	8.0	8.0	--	10.7	91	--	--
09...	1309	20.0	230	7.9	8.0	--	10.6	90	--	--
09...	1311	26.0	230	7.9	8.0	--	10.5	90	75	11
APR										
19...	1055	1.00	192	7.5	19.0	0.30	7.3	79	61	10
19...	1057	10.0	192	7.5	19.0	--	7.3	79	--	--
19...	1059	20.0	190	7.4	19.0	--	7.2	78	--	--
19...	1101	28.0	186	7.4	18.5	--	6.6	71	60	8
JUL										
17...	1215	1.00	205	7.5	26.5	0.50	5.7	71	56	1
17...	1217	10.0	205	7.5	26.5	--	5.6	70	--	--
17...	1219	20.0	205	7.5	26.5	--	5.6	70	--	--
17...	1221	26.0	205	7.4	26.5	--	5.5	69	56	2

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)
JAN										
09...	23	4.1	14	0.7	4.7	64	16	20	0.20	5.7
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	23	4.2	14	0.7	4.6	64	16	20	0.20	5.8
APR										
19...	19	3.2	11	0.6	4.2	51	13	16	<0.10	6.5
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	19	3.1	10	0.6	4.0	52	12	16	0.10	7.3
JUL										
17...	17	3.3	11	0.6	4.4	55	13	17	<0.10	5.7
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	17	3.4	11	0.6	4.4	54	13	17	0.10	5.8

BRAZOS RIVER BASIN

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08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

312458096205101 - LAKE LIMESTONE SITE BC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
09...	126	--	<0.010	<0.100	0.010	0.69	0.70	0.040	8	<1
09...	--	--	<0.010	<0.100	0.020	0.58	0.60	0.030	20	<10
09...	--	--	--	--	--	--	--	--	--	--
09...	126	--	<0.010	<0.100	0.020	0.68	0.70	0.040	11	4
APR										
19...	104	0.460	0.040	0.500	0.090	0.61	0.70	0.090	33	2
19...	--	0.450	0.050	0.500	0.030	0.77	0.80	0.090	80	<10
19...	--	--	--	--	--	--	--	--	--	--
19...	103	0.350	0.050	0.400	0.130	0.67	0.80	0.110	120	15
JUL										
17...	104	--	<0.010	0.200	0.030	0.67	0.70	0.060	56	6
17...	--	--	<0.010	0.200	0.150	0.45	0.60	0.040	70	20
17...	--	--	--	--	--	--	--	--	--	--
17...	104	0.190	0.010	0.200	0.030	0.67	0.70	0.060	12	14

312625096205901 - LAKE LIMESTONE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
09...	1335	1.00	230	8.0	9.5	10.7	95
09...	1337	10.0	230	7.9	8.0	10.5	90
09...	1339	16.0	230	7.8	8.0	10.4	89
APR							
19...	1115	1.00	189	7.5	19.5	7.3	80
19...	1117	10.0	189	7.5	19.0	7.3	79
19...	1119	17.0	189	7.5	19.0	7.2	78
JUL							
17...	1155	1.00	208	7.8	26.0	6.5	81
17...	1157	10.0	208	7.8	26.0	6.4	79
17...	1159	17.0	208	7.7	26.0	6.2	77

312622096224201 - LAKE LIMESTONE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
JAN							
09...	1357	1.00	260	8.0	9.5	10.6	94
09...	1359	10.0	252	7.9	8.5	10.2	88
09...	1401	18.0	247	7.9	8.5	10.3	89
APR							
19...	1130	1.00	179	7.5	19.0	7.1	77
19...	1132	10.0	186	7.5	19.0	6.8	74
19...	1134	21.0	184	7.4	19.0	6.7	72
JUL							
17...	1055	1.00	218	7.8	26.0	6.3	78
17...	1057	10.0	219	7.7	26.0	6.2	77
17...	1059	19.0	223	7.6	26.0	6.0	74

BRAZOS RIVER BASIN

08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

312726096240001 - LAKE LIMESTONE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		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 CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)	
DATE	TIME										
JAN											
09...	1410	1.00	281	8.0	11.0	0.50	10.3	94	89	15	
09...	1412	12.0	267	7.7	9.0	--	9.4	82	86	14	
APR											
19...	1145	1.00	186	7.5	19.5	0.20	6.8	74	66	4	
19...	1147	10.0	186	7.5	19.5	--	6.7	73	--	--	
19...	1149	15.0	186	7.4	19.5	--	6.6	72	66	4	
JUL											
17...	1130	1.00	228	7.6	25.5	0.30	6.0	74	74	9	
17...	1132	13.0	228	7.6	25.5	--	5.7	70	62	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 CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
JAN											
09...	28	4.6	18	0.8	4.6	74	19	29	0.20	5.1	
09...	27	4.4	17	0.8	4.5	72	18	27	0.20	5.6	
APR											
19...	22	2.8	8.7	0.5	3.6	62	10	11	<0.10	9.2	
19...	--	--	--	--	--	--	--	--	--	--	--
19...	22	2.8	8.9	0.5	3.6	62	10	12	<0.10	9.2	
JUL											
17...	24	3.5	12	0.6	4.7	65	13	19	<0.10	2.6	
17...	19	3.6	12	0.7	4.7	64	13	17	<0.10	2.6	
DATE		SOLIDS, SUM OF CONSTITUENTS, 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)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
09...	153	--	0.010	<0.100	0.020	0.98	1.0	0.070	10	2	
09...	147	--	0.020	<0.100	0.080	0.92	1.0	0.100	6	8	
APR											
19...	105	0.350	0.050	0.400	0.120	0.78	0.90	0.140	52	4	
19...	--	--	--	--	--	--	--	--	--	--	--
19...	106	0.340	0.060	0.400	0.140	0.76	0.90	0.150	86	14	
JUL											
17...	118	--	<0.010	<0.100	0.020	0.98	1.0	0.100	12	12	
17...	110	--	0.010	<0.100	0.030	0.87	0.90	0.110	29	19	

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: 1962. Specific conductance (daily records): August 1947 to September 1947.

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. 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.--Records good. No estimated daily discharges. 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 at station.

AVERAGE DISCHARGE.--36 years (water years 1925-60) unregulated, 406 ft³/s (5.70 in/yr), 294,100 acre-ft/yr; 30 years (water years 1961-90) regulated, 425 ft³/s (5.96 in/yr), 307,900 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, 25,200 ft³/s Mar. 16 at 1200 hours (gage height, 23.72 ft); minimum daily, 2.4 ft³/s Nov. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	45	44	2.6	29	32	43	2500	2530	462	55	58	45		
2	44	42	2.8	27	66	49	4020	466	1090	55	48	46		
3	46	42	3.2	27	53	32	2580	1780	618	55	47	46		
4	48	43	3.4	28	44	21	255	4710	639	54	46	46		
5	49	44	4.3	28	54	15	60	13500	1010	54	45	47		
6	50	44	5.4	32	27	13	77	12400	168	57	45	47		
7	55	43	6.4	32	14	14	335	8770	53	56	45	47		
8	53	43	6.6	28	11	18	411	4080	38	54	44	47		
9	50	42	7.0	28	9.4	1310	399	1100	31	54	44	50		
10	50	43	8.7	28	23	5050	100	167	27	54	44	155		
11	50	43	9.9	28	112	5060	285	155	24	54	45	384		
12	49	43	9.3	29	70	1570	210	93	22	54	46	156		
13	49	44	11	29	33	105	72	1240	20	54	45	84		
14	47	44	11	29	18	121	51	4230	19	53	44	64		
15	47	44	12	31	14	6330	384	7460	18	53	45	57		
16	48	43	11	31	12	22600	127	5050	17	54	45	54		
17	48	43	14	32	9.4	7480	54	876	16	56	45	53		
18	50	43	13	80	9.1	2360	251	77	15	54	45	55		
19	49	43	14	111	11	549	147	62	15	51	45	54		
20	49	44	15	95	10	79	46	69	14	52	44	53		
21	50	27	15	54	39	60	38	859	14	52	44	53		
22	50	7.6	15	44	141	53	36	1370	13	52	46	37		
23	50	5.2	19	28	154	50	34	1180	43	79	46	14		
24	49	4.2	25	21	97	45	131	156	91	58	46	11		
25	49	3.4	24	17	49	44	758	50	77	52	45	11		
26	49	3.1	24	13	26	43	657	39	57	49	46	11		
27	49	2.9	24	14	17	40	2060	34	56	47	45	11		
28	49	2.6	25	17	20	40	3110	31	56	47	45	11		
29	50	2.4	29	21	---	43	3170	29	55	47	46	10		
30	51	2.5	30	20	---	580	3340	27	55	46	47	10		
31	48	---	32	18	---	1520	---	35	---	48	46	---		
TOTAL	1520	924.9	432.6	1049	1174.9	55337	25698	72625	4833	1660	1417	1769		
MEAN	49.0	30.8	14.0	33.8	42.0	1785	857	2343	161	53.5	45.7	59.0		
MAX	55	44	32	111	154	22600	4020	13500	1090	79	58	384		
MIN	44	2.4	2.6	13	9.1	13	34	27	13	46	44	10		
AC-FT	3010	1830	858	2080	2330	109800	50970	144100	9590	3290	2810	3510		
CFSM	.05	.03	.01	.03	.04	1.84	.88	2.42	.17	.06	.05	.06		
IN.	.06	.04	.02	.04	.05	2.13	.99	2.79	.19	.06	.05	.07		
CAL YR 1989	TOTAL	135149.5	MEAN	370	MAX	30900	MIN	2.4	AC-FT	268100	CFSM	.38	IN.	5.19
WTR YR 1990	TOTAL	168440.4	MEAN	461	MAX	22600	MIN	2.4	AC-FT	334100	CFSM	.48	IN.	6.47

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 except those for estimated daily discharges, which are poor. 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); 30 years (water years 1961-90) regulated, 570 ft³/s (413,000 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, 16,100 ft³/s Mar. 18 (time unknown) (gage height, 14.72 ft); minimum daily, no flow June 22-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	27	e.88	e10	17	e38	511	2780	540	17	11	3.4
2	20	26	e.85	e12	22	e52	918	e3530	308	14	10	3.7
3	13	22	e.82	e13	59	e45	1300	e3880	519	13	13	4.1
4	11	19	e.80	e11	78	e30	1830	3170	691	12	12	3.8
5	11	19	e.78	e11	51	e20	2300	2270	519	12	9.7	3.6
6	12	19	e.77	e11	33	e18	1450	3050	551	12	9.1	3.4
7	14	20	e.76	e12	28	e17	418	12400	574	12	8.5	3.1
8	16	19	e.78	e14	21	e21	235	12500	181	12	8.3	3.0
9	22	18	e.80	e13	16	e100	299	9240	52	13	8.4	3.1
10	20	17	e.83	e12	14	e600	319	5870	26	12	8.4	11
11	17	16	e.88	e12	14	e3500	e300	3510	16	12	8.4	31
12	15	16	.92	e13	23	e2500	e80	1500	11	11	8.4	117
13	14	16	1.0	e14	52	e500	e230	412	8.2	10	8.4	168
14	14	16	1.1	e19	35	e120	e160	290	5.7	10	8.4	96
15	14	16	1.4	e19	21	e90	e44	672	3.9	9.7	8.4	40
16	14	15	1.5	e20	16	e130	e40	1220	2.6	9.8	7.9	19
17	14	14	1.6	e22	14	e1500	e280	2600	1.6	11	7.5	12
18	14	e14	1.7	e24	14	e15500	e120	4980	1.1	13	7.3	9.1
19	14	e14	1.8	e58	14	e12000	e42	3520	.71	16	6.8	8.2
20	15	e14	2.2	e74	16	6600	e200	1300	.41	17	6.4	8.5
21	15	e14	2.6	e60	120	2310	e130	254	.13	14	5.7	8.7
22	15	e7.0	2.7	e56	e100	663	e30	219	.00	13	5.2	8.6
23	15	e3.0	2.9	e45	e80	162	e29	516	.00	16	5.3	7.8
24	16	e2.0	e4.9	e20	e45	78	e29	751	.00	22	7.3	6.9
25	16	e1.6	e4.8	e17	e35	52	540	678	2.8	62	6.9	3.5
26	13	e1.4	e4.6	e13	e30	42	465	172	33	46	5.7	1.2
27	13	e1.2	e5.4	e10	e22	37	1000	45	31	23	4.9	.71
28	14	e1.1	e8.0	e13	e28	35	1440	23	17	15	4.5	.36
29	17	e1.0	e10	e14	---	44	1730	15	13	13	4.2	.28
30	19	e.93	e9.4	16	---	58	2220	11	17	12	3.7	.20
31	22	---	e9.6	18	---	134	---	696	---	11	3.4	---
TOTAL	478	390.23	87.07	676	1018	46996	18689	82074	4126.15	495.5	233.1	589.25
MEAN	15.4	13.0	2.81	21.8	36.4	1516	623	2648	138	16.0	7.52	19.6
MAX	22	27	10	74	120	15500	2300	12500	691	62	13	168
MIN	11	.93	.76	10	14	17	29	11	.00	9.7	3.4	.20
AC-FT	948	774	173	1340	2020	93220	37070	162800	8180	983	462	1170

CAL YR 1989 TOTAL 137613.61 MEAN 377
WTR YR 1990 TOTAL 155852.30 MEAN 427

e Estimated

BRAZOS RIVER MAIN STEM

351

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. 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 Conservation Service floodwater-retarding structures, see station 081102000. Gage-height telemeter at station.

AVERAGE DISCHARGE.--52 years, 6,492 ft³/s (4,703,000 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, 60,700 ft³/s May 6 at 2300 hours to May 7 at 0200 hours (gage height, 40.28 ft); minimum daily, 533 ft³/s Jan. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1580	1070	664	903	991	2940	9430	31200	31500	5130	1650	1130
2	1620	1120	618	818	1260	2760	12100	33800	32000	4700	1700	1220
3	1140	1090	596	738	1230	2580	10100	37600	32700	4640	1640	1270
4	1190	1090	604	678	1510	2490	8410	44400	32500	4440	1690	1290
5	2090	1110	628	658	3400	2550	6980	51900	31700	3910	1930	1300
6	2010	1050	629	667	3790	2400	6790	58700	30700	3790	1830	1220
7	1760	1010	615	698	2570	2000	7910	57900	31100	3770	1780	1040
8	1570	1110	594	710	1970	1610	8010	48500	31400	3660	1780	983
9	1350	1100	592	689	1710	1430	8340	44000	28900	3700	1590	1440
10	1340	961	651	629	1630	9280	7070	43400	20000	3740	1330	1530
11	1330	1050	734	586	1540	11100	5600	45000	17100	3610	1290	1720
12	1230	954	700	564	1430	8010	4850	48000	24700	3520	1650	2100
13	1130	787	668	537	1370	6410	4680	49800	28000	3440	1730	2390
14	1090	709	675	533	1360	5650	4920	48600	29800	3350	1620	2620
15	1020	664	708	579	1360	6440	4870	45700	29700	3290	1390	2280
16	852	644	716	686	1360	22400	4560	41500	25900	3180	1450	1900
17	711	634	726	679	1390	29200	4360	42200	21400	3310	1350	1620
18	626	627	788	983	1690	22400	3760	42500	17100	3520	1750	1500
19	700	659	987	1820	1960	16900	3220	41600	13700	3440	2090	1340
20	867	680	1090	1420	1700	14900	4450	40000	13600	3240	2170	1320
21	903	653	1110	1290	2420	13900	5550	39100	12100	3050	2180	1420
22	902	635	1070	1570	5700	15100	5870	39500	11800	2970	2220	1640
23	813	681	1080	2320	3670	14400	5740	39000	11600	2910	2040	2410
24	700	737	1070	2950	3850	12800	7060	25800	11000	2860	1760	2170
25	646	830	1210	2810	3720	11300	12200	37200	8980	2850	1480	1950
26	629	781	2100	1620	3690	10200	20200	36200	6310	3770	1610	1600
27	662	738	3150	1270	3210	7790	31800	35400	7050	3370	1700	1400
28	694	699	2640	1160	2660	5900	38000	34600	6850	2730	1700	1300
29	742	690	1980	1220	---	5730	37800	33600	5990	2580	1730	1180
30	935	694	1380	1100	---	10300	31000	32100	5770	2220	1560	1050
31	1040	---	1080	1020	---	8890	---	31500	---	1850	1310	---
TOTAL	33872	25257	31853	33905	64141	289760	325630	1280300	610950	106540	52700	47333
MEAN	1093	842	1028	1094	2291	9347	10850	41300	20360	3437	1700	1578
MAX	2090	1120	3150	2950	5700	29200	38000	58700	32700	5130	2220	2620
MIN	626	627	592	533	991	1430	3220	25800	5770	1850	1290	983
AC-FT	67190	50100	63180	67250	127200	574700	645900	2539000	1212000	211300	104500	93880
CAL YR 1989	TOTAL	1856732	MEAN	5087	MAX	41600	MIN	324	AC-FT	3683000		
WTR YR 1990	TOTAL	2902241	MEAN	7951	MAX	58700	MIN	533	AC-FT	5757000		

BRAZOS RIVER BASIN

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 435 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.--27 years, 222 ft³/s (8.02 in/yr), 160,800 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 State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb 22	0700	*1,320	*11.90				

Minimum daily discharge, 1.0 ft³/s (estimated) Aug. 11-15, Sept. 1-8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	6.6	23	12	18	33	84	129	34	6.2	2.4	6.0	e1.0		
2	5.8	16	12	18	47	200	75	29	5.5	2.4	3.0	e1.0		
3	5.9	14	13	19	46	123	56	89	4.5	e2.3	1.8	e1.0		
4	5.9	13	13	23	43	72	45	233	4.4	e2.3	1.4	e1.0		
5	5.9	13	13	20	36	56	37	91	4.0	e2.2	e1.3	e1.0		
6	5.6	13	13	25	33	49	46	52	3.5	e2.2	e1.2	e1.0		
7	15	12	13	40	31	46	60	38	3.4	e2.1	e1.2	e1.0		
8	29	12	13	36	29	45	63	31	3.3	e2.1	e1.1	e1.0		
9	15	11	13	27	29	43	48	28	3.0	e2.0	e1.1	1.5		
10	11	11	13	24	45	40	42	26	2.8	e2.3	e1.1	5.3		
11	8.6	11	13	21	43	38	38	22	2.7	2.4	e1.0	7.3		
12	7.4	9.8	12	20	35	38	32	21	2.7	2.5	e1.0	16		
13	7.4	11	12	18	31	37	30	21	2.6	5.1	e1.0	28		
14	7.3	11	12	18	28	38	31	19	2.3	3.1	e1.0	11		
15	7.1	11	12	18	31	42	34	17	2.1	2.5	e1.0	5.6		
16	7.1	11	12	18	32	38	35	16	e2.0	2.9	1.6	3.8		
17	7.1	11	12	18	29	35	33	15	e2.0	4.3	2.2	2.7		
18	6.9	12	13	21	34	32	29	14	e1.9	4.8	2.3	4.8		
19	6.5	17	13	31	82	28	26	42	e1.9	4.3	2.1	18		
20	6.3	25	13	33	67	26	26	24	e1.9	5.3	1.7	9.8		
21	5.9	24	13	29	300	25	24	16	e1.8	4.8	1.5	5.3		
22	6.1	23	13	25	958	24	22	12	e1.8	3.7	e1.3	3.3		
23	6.1	29	13	23	296	24	20	10	e1.8	4.2	e1.3	2.3		
24	6.1	24	13	59	92	23	22	10	e1.8	5.1	e1.2	2.1		
25	6.3	18	13	111	62	22	52	8.7	e1.7	6.5	e1.2	2.0		
26	6.6	16	13	49	50	22	54	7.6	e2.0	4.6	e1.2	2.1		
27	6.7	15	13	36	44	22	250	7.1	e2.1	3.4	e1.1	e2.0		
28	6.7	14	14	35	47	23	260	7.1	2.5	2.7	e1.1	e1.9		
29	12	13	15	38	---	112	88	6.8	2.4	2.5	e1.1	e1.9		
30	23	12	19	32	---	300	52	6.6	2.4	2.5	e1.1	e1.8		
31	35	---	21	29	---	367	---	6.6	---	7.2	e1.1	---		
TOTAL	297.9	455.8	412	932	2633	2074	1759	960.5	83.0	106.7	47.3	146.5		
MEAN	9.61	15.2	13.3	30.1	94.0	66.9	58.6	31.0	2.77	3.44	1.53	4.88		
MAX	35	29	21	111	958	367	260	233	6.2	7.2	6.0	28		
MIN	5.6	9.8	12	18	28	22	20	6.6	1.7	2.0	1.0	1.0		
AC-FT	591	904	817	1850	5220	4110	3490	1910	165	212	94	291		
CFSM	.03	.04	.04	.08	.25	.18	.16	.08	.01	.01	.00	.01		
IN.	.03	.05	.04	.09	.26	.21	.17	.10	.01	.01	.00	.01		
CAL YR 1989	TOTAL	28220.6	MEAN	77.3	MAX	2610	MIN	2.8	AC-FT	55980	CFSM	.21	IN.	2.79
WTR YR 1990	TOTAL	9907.7	MEAN	27.1	MAX	958	MIN	1.0	AC-FT	19650	CFSM	.07	IN.	.98

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.--Estimated daily discharges: Dec. 5-8. Records good. 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); 50 years (water years 1941-90) regulated, 7,170 ft³/s (5,195,000 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, 55,800 ft³/s May 8 at 0930 hours (gage height, 38.75 ft); minimum daily, 602 ft³/s Oct. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1560	795	719	1770	1440	3460	11600	29700	29000	5990	2270	1300
2	1370	886	773	1440	1370	3780	9660	28800	28900	5590	1830	1180
3	1330	885	788	1240	1380	4390	12000	31200	29500	4860	1560	1130
4	1500	928	763	1120	1630	3780	11400	35800	30100	4500	1490	1020
5	1380	1120	e739	1030	1520	3110	9580	41600	29900	4490	1490	1010
6	1090	1170	e713	997	1650	2880	8390	47200	29100	4040	1500	1050
7	1900	1180	e726	981	3180	2900	7330	53000	28300	3600	1680	1010
8	2180	1160	e739	944	3470	2650	8050	55200	28500	3490	1630	1080
9	1800	1090	736	965	2810	2260	8580	50700	28700	3390	1600	1230
10	1500	1100	719	966	2270	1880	8800	44800	26300	3210	1590	1050
11	1260	1150	703	926	2020	3940	8680	42400	19500	3240	1410	1170
12	1170	1130	696	868	1900	11500	7030	43100	16100	3160	1170	1570
13	1210	1060	733	816	1760	9860	5780	44900	21900	3080	1090	1690
14	1250	1030	750	772	1570	7490	5270	46100	25500	3000	1210	1930
15	1160	881	712	746	1490	6300	5320	46500	27200	2900	1410	2370
16	1100	801	724	725	1440	6080	5390	44600	27200	2780	1370	2620
17	1000	730	761	699	1490	18900	5140	40900	23900	2690	1250	2320
18	878	727	756	728	1520	25900	4730	39800	19900	2780	1170	1970
19	742	775	715	798	1560	21500	4300	39900	16300	2950	1350	1660
20	668	780	665	958	2000	16600	3650	39200	13200	2980	1460	1510
21	602	797	735	1700	4210	14700	3290	37900	12500	2850	1800	1440
22	726	856	1040	1670	4950	13900	5260	37100	11600	2670	2000	1390
23	758	864	1160	1450	8310	14500	5840	37100	11000	2450	2080	1350
24	675	812	1170	1580	6840	14400	6460	36600	10800	2400	2010	1550
25	795	798	1160	2460	4390	13300	6360	35600	10400	2380	1930	2150
26	661	814	1180	3870	4050	12200	10900	34500	9470	2310	1770	2100
27	650	860	1240	3120	3780	11100	21100	33600	7340	2510	1360	1870
28	644	925	1920	2140	3650	9530	31100	32800	6510	3870	1250	1590
29	632	789	2910	1730	---	7570	35600	32000	7030	3690	1310	1450
30	689	741	2750	1520	---	7040	35100	31100	6390	2970	1320	1320
31	760	---	2250	1520	---	10600	---	29800	---	2700	1340	---
TOTAL	33640	27634	32145	42249	77650	288000	311690	1223500	592040	103520	47700	46080
MEAN	1085	921	1037	1363	2773	9290	10390	39470	19730	3339	1539	1536
MAX	2180	1180	2910	3870	8310	25900	35600	55200	30100	5990	2270	2620
MIN	602	727	665	699	1370	1880	3290	28800	6390	2310	1090	1010
AC-FT	66720	54810	63760	83800	154000	571200	618200	2427000	1174000	205300	94610	91400
CAL YR 1989	TOTAL	2018477	MEAN	5530	MAX	42100	MIN	424	AC-FT	4004000		
WTR YR 1990	TOTAL	2825848	MEAN	7742	MAX	55200	MIN	602	AC-FT	5605000		

e Estimated

BRAZOS RIVER MAIN STEM

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, 1,260 microsiemens Jan. 1; minimum daily, 320 microsiemens Feb. 26.

WATER TEMPERATURE: Maximum daily, 31.0°C several days in July and August; minimum daily, 1.0°C Dec. 23, 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
OCT 31...	0930	778	942	8.2	20.0	29	7.7	84	1.0	1000	820
FEB 07...	1155	3310	753	8.2	15.0	47	11.8	115	1.9	210	3000
MAR 26...	1500	12000	594	8.0	17.0	210	8.4	85	1.5	92	130
MAY 15...	1210	46400	748	7.9	25.0	430	7.9	96	1.1	120	950
JUN 26...	1140	9590	660	8.3	28.5	410	8.8	113	1.8	150	130
AUG 13...	1110	1020	807	8.4	29.5	25	6.8	89	2.4	130	28

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- LITY 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)
OCT 31...	240	54	68	17	98	3	4.7	180	92	130	0.30
FEB 07...	190	46	58	11	73	2	5.3	145	72	98	0.20
MAR 26...	150	56	47	8.5	57	2	6.4	97	55	87	<0.10
MAY 15...	180	71	53	11	75	2	4.5	105	75	120	0.30
JUN 26...	180	56	55	11	57	2	4.6	128	52	87	0.30
AUG 13...	220	69	65	15	76	2	4.9	156	80	110	0.30

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, 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)
OCT 31...	8.5	539	532	--	--	0.010	<0.010	<0.100	<0.100	0.020
FEB 07...	9.4	448	417	0.630	0.670	0.070	0.030	0.700	0.700	0.070
MAR 26...	7.4	350	329	0.320	0.390	0.080	0.010	0.400	0.400	0.070
MAY 15...	7.5	416	412	0.380	--	0.020	<0.010	0.400	0.400	0.010
JUN 26...	7.3	370	353	0.390	--	0.010	<0.010	0.400	0.400	0.010
AUG 13...	8.9	449	454	--	--	<0.010	<0.010	<0.100	<0.100	0.020

08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 31...	<0.010	0.48	0.50	0.130	0.050	0.060	0.18	53	111	95
FEB 07...	0.060	1.2	1.3	0.200	0.080	0.080	0.25	402	3590	89
MAR 26...	0.020	0.53	0.60	0.130	0.090	0.090	0.28	770	24900	80
MAY 15...	0.030	0.79	0.80	0.050	0.070	0.050	0.15	1670	209000	82
JUN 26...	0.020	0.39	0.40	0.150	0.050	0.050	0.15	857	22200	95
AUG 13...	0.010	0.38	0.40	0.110	0.040	0.020	0.06	33	91	99
DATE	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)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 31...	50	2	150	<0.5	<1.0	1	<3	2	51	<1
FEB 07...	--	--	--	--	--	--	--	--	--	--
MAR 26...	70	2	92	<0.5	<1.0	<5	<3	<10	49	10
MAY 15...	--	--	--	--	--	--	--	--	--	--
JUN 26...	20	2	83	<0.5	1.0	<1	<3	3	16	1
AUG 13...	<10	3	130	<0.5	1.0	1	<3	3	6	<1
DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 31...	18	12	<0.1	<10	2	<1	<1.0	750	<6	12
FEB 07...	--	--	--	--	--	--	--	--	--	--
MAR 26...	8	3	0.2	<10	<10	<1	1.0	410	<6	16
MAY 15...	--	--	--	--	--	--	--	--	--	--
JUN 26...	10	<1	<0.1	<10	1	<1	<1.0	530	<6	<3
AUG 13...	15	2	<0.1	<10	1	<1	<1.0	680	<6	<3

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1989 TO SEPTEMBER 1990

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. 1989	33640	1010	571	51800	160	14500	110	9640	250
NOV. 1989	27634	1010	574	42900	160	12100	110	7980	250
DEC. 1989	32145	1030	584	50700	170	14500	110	9510	250
JAN. 1990	42249	876	496	56600	130	15400	91	10400	220
FEB. 1990	77650	596	336	70400	78	16300	58	12100	170
MAR. 1990	288000	523	294	229000	65	50600	50	38800	150
APR. 1990	311690	853	482	406000	130	107000	87	73600	220
MAY 1990	1223500	755	426	1408E3	110	349500	75	249200	200
JUNE 1990	592040	774	437	698000	110	174000	77	123800	210
JULY 1990	103520	675	380	106000	90	25000	66	18400	190
AUG. 1990	47700	717	404	52100	98	12600	71	9120	200
SEPT 1990	46080	719	405	50400	99	12300	71	8860	200
TOTAL	2825848	**	**	3222000	**	804000	**	571000	**
WTD.AVG.	7742	748	422	**	110	**	75	**	200

BRAZOS RIVER MAIN STEM

08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	992	958	907	1260	755	622	636	716	793	718	729	651
2	979	980	966	e1240	756	589	524	603	801	738	707	619
3	1010	990	983	1230	764	519	614	978	817	704	707	673
4	1010	950	964	e1200	747	463	911	1060	814	686	633	782
5	1030	943	938	1170	797	417	732	991	795	695	641	814
6	1010	976	945	1150	762	454	621	830	788	691	668	816
7	1010	998	920	1080	764	517	795	659	779	712	655	783
8	954	1010	896	1100	708	546	858	541	781	705	643	767
9	1040	991	870	1090	804	619	894	536	771	776	649	785
10	1000	1030	890	1080	968	656	938	765	782	713	668	765
11	1010	1020	907	1050	e925	681	913	769	781	686	695	820
12	1020	1050	943	1020	896	975	929	773	765	708	685	830
13	1010	1070	932	1020	839	422	883	817	693	691	771	881
14	1020	1100	940	1010	700	354	825	800	776	657	844	855
15	999	1100	929	1010	628	351	767	753	859	689	796	833
16	1020	1060	833	1000	591	360	761	753	819	687	784	832
17	1030	1050	944	982	601	456	787	693	816	669	810	833
18	1040	1050	964	959	599	330	760	649	810	678	810	764
19	1030	1040	889	968	595	356	652	737	767	678	812	727
20	1020	1060	710	959	591	368	668	746	763	665	801	657
21	1020	1040	601	983	618	446	773	749	743	667	783	612
22	1020	1010	1010	962	377	511	911	758	679	636	793	598
23	1020	991	1050	865	553	572	959	764	712	654	728	563
24	1020	1010	1090	700	383	563	1050	738	652	650	733	564
25	1020	1010	1100	601	339	564	1170	731	651	634	705	565
26	989	1020	1120	623	320	574	1240	746	669	624	679	574
27	994	1010	1140	606	452	621	1130	769	670	598	666	588
28	1020	920	1140	608	560	708	918	789	660	611	664	631
29	991	1000	1170	521	---	774	797	795	682	580	664	605
30	960	1000	1220	565	---	818	807	797	661	e575	666	734
31	963	---	1240	711	---	780	---	791	---	570	670	---
MEAN	1010	1010	973	946	657	548	841	761	752	669	718	717

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	19.0	13.0	18.0	13.0	15.0	19.0	22.0	26.0	30.0	31.0	30.0
2	26.0	17.0	13.0	---	13.0	14.0	19.0	24.0	27.0	30.0	31.0	30.0
3	25.0	22.0	12.0	11.0	20.0	14.0	19.0	24.0	27.0	30.0	31.0	30.0
4	26.0	17.0	11.0	---	14.0	14.0	19.0	23.0	27.0	30.0	31.0	30.0
5	26.0	19.0	12.0	13.0	14.0	16.0	19.0	21.0	27.0	30.0	31.0	30.0
6	26.0	22.0	14.0	12.0	15.0	16.0	21.0	21.0	27.0	30.0	31.0	30.0
7	26.0	23.0	16.0	11.0	16.0	19.0	18.0	21.0	27.0	30.0	31.0	30.0
8	24.0	23.0	13.0	11.0	17.0	20.0	18.0	22.0	28.0	30.0	31.0	30.0
9	23.0	22.0	11.0	12.0	18.0	21.0	19.0	22.0	28.0	30.0	30.0	30.0
10	23.0	20.0	11.0	14.0	17.0	22.0	20.0	22.0	28.0	30.0	30.0	30.0
11	23.0	20.0	13.0	15.0	---	22.0	18.0	22.0	28.0	30.0	30.0	30.0
12	23.0	20.0	9.0	15.0	16.0	22.0	19.0	23.0	28.0	30.0	31.0	30.0
13	24.0	21.0	8.0	13.0	17.0	20.0	20.0	24.0	28.0	30.0	30.0	30.0
14	25.0	21.0	8.0	13.0	19.0	21.0	20.0	24.0	28.0	28.0	30.0	28.0
15	25.0	22.0	10.0	16.0	20.0	19.0	20.0	24.0	28.0	28.0	30.0	28.0
16	25.0	18.0	7.0	17.0	19.0	18.0	22.0	25.0	28.0	30.0	30.0	30.0
17	25.0	18.0	7.0	19.0	16.0	18.0	22.0	25.0	28.0	28.0	30.0	30.0
18	22.0	16.0	6.0	20.0	14.0	18.0	23.0	25.0	29.0	28.0	30.0	30.0
19	28.0	16.0	6.0	21.0	14.0	18.0	22.0	25.0	29.0	28.0	30.0	30.0
20	16.0	16.0	6.0	19.0	15.0	16.0	22.0	25.0	29.0	28.0	30.0	30.0
21	16.0	18.0	7.0	16.0	16.0	17.0	24.0	25.0	30.0	28.0	30.0	30.0
22	18.0	18.0	6.0	15.0	14.0	17.0	24.0	25.0	30.0	29.0	31.0	30.0
23	20.0	14.0	1.0	16.0	14.0	18.0	24.0	25.0	30.0	30.0	30.0	30.0
24	20.0	14.0	1.0	18.0	14.0	19.0	25.0	25.0	30.0	30.0	30.0	25.0
25	20.0	16.0	4.0	15.0	14.0	18.0	25.0	25.0	30.0	29.0	30.0	25.0
26	22.0	19.0	5.0	13.0	16.0	18.0	24.0	26.0	30.0	29.0	30.0	25.0
27	22.0	20.0	6.0	15.0	16.0	17.0	22.0	26.0	30.0	30.0	30.0	26.0
28	22.0	20.0	8.0	16.0	18.0	19.0	21.0	26.0	30.0	31.0	30.0	27.0
29	22.0	15.0	10.0	13.0	---	19.0	22.0	26.0	30.0	31.0	30.0	27.0
30	22.0	14.0	12.0	14.0	---	19.0	22.0	26.0	30.0	---	31.0	27.0
31	19.0	---	19.0	15.0	---	18.0	---	26.0	---	30.0	31.0	---
MEAN	23.0	18.5	9.0	15.0	16.0	18.0	21.0	24.0	28.5	29.5	30.5	29.0

BRAZOS RIVER BASIN

357

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.--No estimated daily discharges. Records fair. 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.--40 years (water years 1948-49, 1953-90), 35.0 ft³/s (25,360 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 21	2000	*2,100	*21.59	No other peaks greater than base discharge.			
Minimum daily discharge, 0.75 ft ³ /s June 15.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	.95	1.0	1.1	2.9	78	26	9.3	1.1	1.1	1.5	1.1
2	1.3	1.0	1.2	1.1	5.9	124	12	4.2	1.0	2.0	1.8	1.1
3	1.1	.84	1.2	1.1	3.8	33	5.9	81	.89	1.5	1.4	1.0
4	1.2	1.0	1.3	1.6	2.7	14	3.1	185	.82	.93	1.4	.95
5	.99	1.0	1.4	1.4	2.4	6.3	2.1	38	.83	1.3	1.5	1.6
6	1.0	1.2	1.3	13	2.1	3.6	84	13	.82	1.2	1.2	2.3
7	1.2	1.3	1.3	38	1.8	2.3	30	5.8	.79	2.4	1.2	.97
8	.98	1.2	1.1	6.1	1.8	1.9	8.5	4.0	.82	1.7	2.0	1.3
9	.85	1.2	.97	2.5	2.5	1.4	3.7	3.0	.98	1.2	1.4	1.3
10	.90	1.0	1.0	2.0	1.8	1.3	4.1	2.9	.84	1.3	1.6	4.3
11	.91	1.2	1.0	1.7	1.6	1.3	8.7	2.4	1.2	1.2	1.3	3.0
12	.88	1.2	1.0	1.6	1.4	1.1	2.4	2.1	2.1	1.0	1.2	1.9
13	.85	1.2	1.0	1.5	1.3	1.6	1.8	2.2	1.5	1.8	1.9	3.1
14	.88	1.2	1.1	1.5	1.2	1.3	51	2.0	.93	1.6	2.0	2.8
15	.89	1.2	1.1	1.5	1.4	1.1	35	1.9	.75	1.1	1.7	1.8
16	.93	1.1	1.2	1.4	1.3	1.1	9.7	1.8	.94	1.5	1.5	1.0
17	.93	.99	1.5	1.4	1.3	.91	4.4	2.1	.77	1.6	1.3	.93
18	.81	1.0	1.4	1.5	1.4	.93	2.4	3.6	1.1	1.8	1.4	.93
19	.92	1.4	1.2	1.4	1.6	.94	1.8	4.0	.87	3.8	1.9	.89
20	.78	1.2	1.1	1.3	1.4	.84	1.4	6.2	1.1	3.4	1.4	.91
21	.86	1.1	1.1	1.1	943	.88	1.3	5.6	.99	2.9	1.4	.88
22	.86	1.3	1.2	1.1	499	.87	1.3	60	1.1	2.1	1.4	.96
23	.82	1.8	1.9	1.1	73	1.0	1.2	80	1.1	1.6	1.4	.87
24	.79	1.3	1.6	1.1	22	.91	1.2	22	1.1	1.7	1.3	.87
25	.95	1.2	1.5	1.2	9.8	.91	1.2	11	1.1	1.4	.87	.81
26	.88	1.1	1.3	1.3	5.3	.86	105	6.0	1.8	3.0	1.2	.80
27	.88	1.6	1.1	1.2	3.9	.90	182	3.7	3.4	1.6	1.1	.92
28	.85	120	1.2	18	3.2	.89	199	2.5	1.1	1.3	1.2	.85
29	1.1	4.3	1.3	38	---	66	66	1.9	1.0	1.3	1.1	.84
30	1.3	1.6	1.2	7.8	---	219	22	1.5	.77	1.3	1.0	.85
31	1.3	---	1.1	5.0	---	107	---	1.2	---	1.8	1.0	---
TOTAL	30.09	157.68	37.87	159.6	1600.8	676.14	878.2	569.9	33.61	53.43	43.57	41.83
MEAN	.97	5.26	1.22	5.15	57.2	21.8	29.3	18.4	1.12	1.72	1.41	1.39
MAX	1.3	120	1.9	38	943	219	199	185	3.4	3.8	2.0	4.3
MIN	.78	.84	.97	1.1	1.2	.84	1.2	1.2	.75	.93	.87	.80
AC-FT	60	313	75	317	3180	1340	1740	1130	67	106	86	83
CAL YR 1989	TOTAL	9915.37	MEAN	27.2	MAX	2500	MIN	.75	AC-FT	19670		
WTR YR 1990	TOTAL	4282.72	MEAN	11.7	MAX	943	MIN	.75	AC-FT	8490		

BRAZOS RIVER MAIN STEM

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.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

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

REMARKS.--Records good 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 Soil Conservation Service floodwater-retarding structures, see Brazos River at Washington (station 08110200). Gage-height telemeter at station.

AVERAGE DISCHARGE.--19 years (water years 1968-80, 1985-90), 7,569 ft³/s (5,484,000 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 State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 51,600 ft³/s May 9 at 0300 hrs (gage height, 42.66 ft); minimum daily, 468 ft³/s Dec. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1020	1080	754	2010	1480	3770	11100	33300	29800	e6200	1960	901
2	1480	1080	748	1560	1420	4610	10100	29700	29600	e5600	1680	875
3	1360	1110	848	1180	1370	4660	9670	30900	30200	5040	1400	836
4	1280	1070	823	1110	1410	4370	11000	37300	31500	4540	1190	811
5	1350	1090	570	1000	1580	3760	9980	40400	31600	4340	1130	706
6	1050	1310	569	959	1510	3260	8710	44000	30900	4370	1130	694
7	1070	1370	683	1130	1850	3110	8080	48000	29700	3930	1100	719
8	1870	1370	613	1150	3210	3080	7360	51100	29700	3650	1240	735
9	2120	1140	682	888	3310	2860	7920	50700	29900	3530	1160	845
10	1820	1020	668	882	2780	2540	8160	46900	28700	3300	1000	979
11	1590	1000	582	857	2350	2240	8290	43300	24600	3160	911	917
12	1370	1040	662	864	2130	6130	7610	42200	17900	3160	812	1040
13	1260	1020	654	809	2030	9530	6350	42800	19400	3100	635	1460
14	1260	1030	679	789	1910	8170	5440	44100	25800	2960	531	1630
15	1260	1020	710	701	1670	6790	5290	44900	28300	2880	761	1870
16	1270	885	654	677	1580	5990	5320	44700	30100	2820	921	2180
17	1220	783	660	665	1520	9480	5190	42100	28000	2790	877	2250
18	963	711	678	639	1550	e19800	4790	40000	23500	2820	711	2010
19	831	680	564	695	1710	e20600	4430	39500	19700	3030	780	1770
20	741	745	512	804	1790	e18100	4030	39400	15900	3090	850	1500
21	e690	835	468	1020	2350	15300	3480	38500	e13000	3070	946	1360
22	e675	863	751	1530	7050	13500	3550	37500	e12000	2960	1290	1290
23	e715	1060	e974	1440	7260	13100	5000	37200	e11200	2730	1490	1320
24	715	1080	e1190	1280	7460	13400	5370	37000	e10900	2610	1510	1260
25	644	1010	e1340	1450	5410	13000	5640	36200	e10500	2500	1440	1490
26	735	995	1180	2330	4160	11800	6620	35300	e9800	2400	1370	1880
27	725	987	939	3150	3920	10700	15100	34400	e8400	2290	1190	1810
28	700	1030	978	2500	3790	9770	27000	33500	e7000	2480	892	1620
29	e804	1140	1730	2170	---	8340	34200	32800	e7200	3020	831	1450
30	e986	878	2600	1790	---	7700	36500	31900	e6700	2600	861	1330
31	e1150	---	2420	1550	---	8920	---	30900	---	2190	876	---
TOTAL	34724	30432	27883	39579	79560	268380	291280	1220500	631500	103160	33475	39538
MEAN	1120	1014	899	1277	2841	8657	9709	39370	21050	3328	1080	1318
MAX	2120	1370	2600	3150	7460	20600	36500	51100	31600	6200	1960	2250
MIN	644	680	468	639	1370	2240	3480	29700	6700	2190	531	694
AC-FT	68880	60360	55310	78500	157800	532300	577800	2421000	1253000	204600	66400	78420
CAL YR 1989	TOTAL	2003135	MEAN	5488	MAX	43000	MIN	197	AC-FT	3973000		
WTR YR 1990	TOTAL	2800011	MEAN	7671	MAX	51100	MIN	468	AC-FT	5554000		

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.--Estimated daily discharges: Feb. 24-26. Records good. 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 observations of water temperature were made during the year.

AVERAGE DISCHARGE.--36 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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 22	0800	*3,700	*19.07	No other peak greater than base discharge.			
Minimum daily discharge, 1.7 ft ³ /s Dec. 18.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	38	19	6.7	33	157	375	385	51	85	136	56
2	80	82	15	6.5	48	576	336	381	45	108	126	55
3	77	73	12	5.9	91	499	236	361	40	139	116	62
4	87	61	9.6	6.2	86	472	202	830	37	146	108	70
5	96	56	8.2	6.9	105	349	177	455	37	129	109	117
6	87	47	5.9	8.9	106	295	135	257	35	122	104	168
7	97	35	3.9	75	85	269	222	192	29	160	98	177
8	107	26	4.3	60	67	202	161	201	26	195	83	162
9	116	25	4.3	29	51	142	113	192	22	184	79	145
10	125	24	6.3	35	38	99	74	154	20	176	80	141
11	127	17	9.2	30	28	75	83	126	23	168	80	162
12	134	13	6.1	22	21	57	87	93	28	161	92	216
13	138	11	4.5	16	16	44	110	78	37	149	137	292
14	142	9.5	3.8	13	14	37	80	81	39	176	153	292
15	139	7.9	3.2	13	12	32	131	78	32	224	138	241
16	137	8.0	2.6	13	10	27	338	75	31	206	120	183
17	137	7.0	2.0	12	8.6	24	508	71	29	196	122	137
18	141	5.4	1.7	11	8.3	22	359	69	33	216	135	110
19	140	4.0	3.0	10	8.2	20	262	133	40	266	136	94
20	113	4.7	3.7	10	8.3	18	225	192	42	262	152	78
21	92	5.1	3.5	11	891	17	160	153	29	265	180	62
22	67	8.1	3.5	9.1	3350	16	104	121	23	284	168	48
23	52	11	18	8.3	1540	14	68	112	19	297	162	44
24	43	13	3.5	8.0	e960	12	48	117	18	256	155	50
25	41	23	3.4	7.6	e650	11	33	136	18	254	138	51
26	47	23	3.7	8.2	450	9.6	140	118	32	263	117	59
27	54	20	4.1	7.5	257	8.8	1380	101	41	246	103	70
28	60	112	4.1	8.9	188	8.7	964	80	48	207	98	78
29	57	74	5.9	207	---	18	873	56	72	179	90	78
30	51	29	7.3	124	---	257	576	51	88	156	72	80
31	42	---	6.5	57	---	543	---	51	---	142	63	---
TOTAL	2911	872.7	191.8	846.7	9130.4	4331.1	8560	5500	1064	6017	3650	3578
MEAN	93.9	29.1	6.19	27.3	326	140	285	177	35.5	194	118	119
MAX	142	112	19	207	3350	576	1380	830	88	297	180	292
MIN	41	4.0	1.7	5.9	8.2	8.7	33	51	18	85	63	44
AC-FT	5770	1730	380	1680	18110	8590	16980	10910	2110	11930	7240	7100

CAL YR 1989 TOTAL 84689.0 MEAN 232 MAX 3430 MIN 1.7 AC-FT 168000
WTR YR 1990 TOTAL 46652.7 MEAN 128 MAX 3350 MIN 1.7 AC-FT 92540

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 1990

Station no.	Station name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Dis-charge (ft³/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 Interregional Highway 35, at Salado.	--	1984-88, 1990	11-20-89 01-08-90 02-26-90 04-16-90 06-06-90 07-31-90 09-13-90	3.07 3.19 2.99 5.31 3.72 .62 4.10
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.	--	1984-76† 1988, 1990	11-20-89 01-08-90 02-26-90 04-16-90 06-06-90 07-31-90 09-13-90	11.2 10.6 10.1 12.4 18.3 10.2 11.4
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	11-20-89 01-08-90 02-26-90 04-16-90 06-06-90 07-31-90 09-13-90	5.01 4.51 4.57 5.52 6.84 3.39 4.45
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	11-20-89 01-08-90 02-26-90 04-16-90 06-06-90 07-31-90 09-13-90	.28 .38 .60 5.66 9.86 .51 .05
08105000	San Gabriel River at Georgetown, Tex.	Lat 30°39'14", long 97°39'18", Williamson County, on left bank 100 ft downstream from Missouri-Kansas Railroad bridge, 1.2 mi below confluence at North and South forks, about 1.5 mi northeast of Williamson County Courthouse in Georgetown.	399	1924-25† 1934-73† 1984-87† 1988, 1990	11-20-90 01-08-90 02-26-90 04-16-90 06-06-90 07-31-90 09-13-90	8.65 11.1 13.1 23.4 31.4 8.04 13.2
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 Interregional Highway 35 near Georgetown.	--	1984-88, 1990	11-20-89 01-08-90 02-26-90 04-16-90 06-06-90 07-31-90 09-13-90	0 0 0 0 0 0 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	11-20-89 01-08-90 02-26-90 04-16-90 06-06-90 07-31-90 09-13-90	0 0 0 .39 .09 0 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	11-20-89 01-08-90 02-26-90 04-16-90 06-06-90 07-03-90 09-13-90	0 1.06 .53 2.66 11.8 .52 0

† 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 occurring 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 1990

Station no.	Station name	Location	Drainage area (mi²)	Period of record	Annual maximum		
					Date	Gage height	Dis-charge (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	1984-90	03-28-90	*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	1984-90	02-21-90	25.58	--
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, 1979-90	02-22-90	60.60	--
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, 1987-90	02-21-90	29.46	2,390
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-north-east of Fulshear.	81.7	1986-90	02-21-90	10.27	--
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	1974-90	02-21-90	*105.89	--
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	1974-90	02-21-90	*99.66	--
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	1984-90	02-21-90	*44.29	3,420
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	1964-90†	10-29-89	*77.05	1,120
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	1965-90†	10-29-89	*64.97	3,130
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	1979-90	10-30-89	*34.48	--
8074760	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	1977-90	02-21-90	14.41	--
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, 1975-90	05-17-90	*75.38	--
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	1965-90	05-17-90	*70.59	1,670
08074810	Brays Bayou at Gessner Drive, Houston, Tex.	Lat 29°40'21", long 95°31'41", Harris County, at bridge on Gessner Drive in southwest Houston amd 0.10 mi below mouth of Keegans Bayou.	53.2	1977-90	04-27-90	*52.60	3,690
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	1965-90	02-21-90	*112.56	552
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	1986-90	10-15-89	*6.12	--

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

363

Annual maximum stage and (or) discharge during water year 1990—Continued

Station no.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height	Dis-charge (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	1984-90	04-26-90 05-08-90	*24.82	--
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	1985-90	05-03-90	*20.96	--
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.	--	1966-90	05-04-90	*7.37	--
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	1985-90	05-03-90	*7.17	--
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	1963-90	09-17-90	.65	13
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† 1965-90 1965-90	07-22-90	2.69	9

- * Elevation, in feet.
- † Operated as a continuous-record station.
- b Revised.
- c Gage height not determined.
- d Discharge not determined.
- e Estimated.

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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
<i>Length</i>		
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)
<i>Area</i>		
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)
<i>Volume</i>		
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)
<i>Flow</i>		
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)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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